



Agenda Items
Meeting
of the
Board of Regents

August 16, 2023



**MEETING OF THE BOARD OF REGENTS
THE TEXAS A&M UNIVERSITY SYSTEM**

**August 16, 2023
College Station, Texas**

REGULAR AGENDA ITEMS

1. COMMITTEE ON FINANCE

- 1.1 Approval of Fiscal Year 2024 Service Department Accounts, A&M System
- 1.2 Approval of Fiscal Year 2024 Operating Budgets, A&M System
- 1.3 Adoption of a Resolution Authorizing the Issuance of the Board of Regents of The Texas A&M University System Permanent University Fund Bonds, A&M System
- 1.4 Adoption of a Resolution Authorizing the Issuance of the Board of Regents of The Texas A&M University System Revenue Financing System Bonds, A&M System
- 1.5 Tuition and Fee Commitment for 2023-2024 and 2024-2025 Academic Years, A&M System

2. COMMITTEE ON AUDIT

- 2.1 Approval of System Internal Audit Plan for Fiscal Year 2024, BOR A&M System
(Draft Pending Committee Approval)

3. COMMITTEE ON BUILDINGS AND PHYSICAL PLANT

- 3.1 Approval of System Capital Plan for FY 2024 – FY 2028, A&M System
- 3.2 Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Central Operational Reliability and Efficiency Facility (CORE) Project, Texas A&M University-Central Texas, Killeen, Texas (Project No. 24-3376), A&M System
- 3.3 Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Deferred Maintenance Project, Texas A&M University-Kingsville, Kingsville, Texas (Project No. 17-3383), A&M System
- 3.4 Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Animal Reproductive Biotechnology Center Project, Texas A&M AgriLife Research, Bryan, Texas (Project No. 06-3397), A&M System

**Certified by the general counsel or other appropriate attorney as confidential or information that may be withheld from public disclosure in accordance with Section 551.1281 and Chapter 552 of the Texas Government Code.*

- 3.5 Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the CUP Structural Repairs Project, Texas A&M University, College Station, Texas (Project No. 02-3349), Texas A&M

Informational Report

Report of System Construction Projects Authorized by the Board

4. **COMMITTEE ON ACADEMIC AND STUDENT AFFAIRS**

(No agenda items)

5. **THE TEXAS A&M UNIVERSITY SYSTEM BOARD OF REGENTS *(not assigned to Committee)***

- 5.1 Adoption of a Resolution Honoring Dr. Marc A. Nigliazzo of Texas A&M University-Central Texas and Bestowing the Title of President Emeritus, A&M System
- 5.3 (PH) Authorization to Extend Term of the Special Committee of the Board of Regents on the Texas A&M University Corps of Cadets, BOR A&M System
- 5.10 Establishment of the Texas A&M Space Institute, A&M System

Executive Session Items

- 5.2 *Approval for Revisions to System Policy 08.01, Civil Rights Protections and Compliance, A&M System
- 5.4 Appointment of Interim President of Texas A&M University-Central Texas, A&M System
- 5.5 Appointment of Interim Vice Chancellor for Engineering, Interim Dean of the College of Engineering at Texas A&M University, and Interim Director of the Texas A&M Engineering Experiment Station, A&M System
- 5.6 *Authorization for the President to Negotiate and Execute Employment Contracts for the Assistant Coach – Tight Ends, Assistant Coach – Wide Receivers, Defensive Coordinator, Assistant Coach – Defensive Line, and Associate Athletic Director – Football Operations, Texas A&M
- 5.7 *Authorization to Negotiate and Execute a Ground Lease of .80 Acres of Land Located at 750 Agronomy Road, College Station, Brazos County, Texas, Texas A&M
- 5.8 *Authorization to Negotiate and Execute a Solar Lease in Pecos, Reeves County, Texas, AgriLife Research
- 5.9 *(Number not used)*

6. CONSENT AGENDA ITEMSThe Texas A&M University System/Board of Regents

- 6.1 Approval of Minutes
- 6.2 Granting of the Title of Emeritus, August 2023
- 6.3 Confirmation of Appointment and Commissioning of Peace Officers
- 6.4 Approval of List of Authorized Signers for Revolving Fund Bank Accounts for System Members
- 6.5 Approval of Non-substantive Revisions to System Policy 02.08, System Expansion
- 6.6 Approval of Revisions to System Policy 24.01, Risk Management, System Policy 34.07, Emergency Management, and Approval of New Policy 34.01, Environment, Safety and Security
- 6.7 Approval for Substantive Revisions to System Policy 41.01, Real Property
- 6.8 Approval for Revisions to System Policies 51.01, Capital Planning and 51.04, General Requirements and Delegations of Authority on Construction Projects
- 6.9 *(Number not used)*

Prairie View A&M University

- 6.10 Approval of Academic Tenure, August 2023
- 6.11 Granting of Faculty Development Leave for FY 2024

Tarleton State University

- 6.12 Approval of Academic Tenure, August 2023
- 6.13 Establishment of the Biotechnology Institute

Texas A&M International University

- 6.14 *Authorization to Establish a Quasi-Endowment in the System Endowment Fund Entitled the "Frank & Julieta Staggs Academy Quasi-Endowment"

Texas A&M University

- 6.15 Approval of Academic Tenure, August 2023
- 6.16 Approval of a New Master of Science Degree Program with a Major in Supply Chain and Analytics, and Authorization to Request Approval from the Texas Higher Education Coordinating Board

**Certified by the general counsel or other appropriate attorney as confidential or information that may be withheld from public disclosure in accordance with Section 551.1281 and Chapter 552 of the Texas Government Code.*

- 6.17 *Authorization for the Chief Operating Officer and Senior Vice President to Negotiate and Execute a Certain Specified Contract \$500,000 or More
- 6.18 *Authorization for the President to Negotiate and Execute Revenue Agreement(s) for the Mays Business School Center for Executive Development for Fiscal Year 2024
- 6.19 *Namings of Areas and Spaces in and Around Aggie Park
- 6.20 *Naming of a Room within the Student Services Building
- 6.21 *Naming of the Entry Vestibule of the Coolidge Football Performance Center
- 6.22 *Naming of a Laboratory within the H.J. (Bill) and Reta Haynes Engineering Building

Texas A&M University-Central Texas
(No consent agenda items)

Texas A&M University-Commerce

- 6.23 Approval of Academic Tenure, August 2023
- 6.24 *Naming of the Finance Labs on the Campuses of Texas A&M University-Commerce and Texas A&M University-Commerce at Dallas

Texas A&M University-Corpus Christi

- 6.25 Approval of Academic Tenure, August 2023
- 6.26 Approval of a New Bachelor of Science Degree Program with a Major in Public Health, and Authorization to Request Approval from the Texas Higher Education Coordinating Board
- 6.27 Approval of a New Master of Public Health Degree Program with a Major in Public Health, and Authorization to Request Approval from the Texas Higher Education Coordinating Board
- 6.28 *Naming of the Hospitality Suite within the Dr. Jack Dugan Family Soccer and Track Stadium

Texas A&M University-Kingsville
(No consent agenda items)

Texas A&M University-San Antonio

- 6.29 Approval of a New Doctor of Education Degree Program with a Major in Educational Leadership, and Authorization to Request Approval from the Texas Higher Education Coordinating Board

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Texas A&M University-Texarkana

- 6.30 Approval of Academic Tenure, August 2023

West Texas A&M University

- 6.31 Approval of a New Doctor of Philosophy Degree Program with a Major in Applied Sciences and Arts, and Authorization to Request Approval from the Texas Higher Education Coordinating Board
- 6.32 Adoption of a Resolution Honoring the West Texas A&M University Softball Team for Winning the 2021 NCAA Division II National Championship
- 6.33 Adoption of a Resolution Honoring the West Texas A&M University Volleyball Team for Winning the 2022 NCAA Division II National Championship
- 6.34 Adoption of a Resolution Honoring the West Texas A&M University Women's Outdoor Track and Field Team for Winning the 2022 NCAA Division II National Championship

Texas A&M AgriLife Extension Service

(No consent agenda items)

Texas A&M AgriLife Research

(No consent agenda items)

Texas A&M Engineering Experiment Station

- 6.35 *Naming of Rooms and Spaces within the Mike and Beverly Rowlett Industrial Distribution Building
- 6.36 Withdrawn

Texas A&M Forest Service

- 6.37 Authorization to Execute FY 2023 Federal Non-research Grant Agreements, and any Amendments, Modifications or Extensions

Texas A&M Engineering Extension Service

(No consent agenda items)

Texas A&M Veterinary Medical Diagnostic Laboratory

(No consent agenda items)

Texas A&M Transportation Institute

(No consent agenda items)

Texas Division of Emergency Management

(No consent agenda items)

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A&M System	The Texas A&M University System
A&M-Central Texas	Texas A&M University-Central Texas
A&M-Commerce	Texas A&M University-Commerce
A&M-Corpus Christi	Texas A&M University-Corpus Christi
A&M-San Antonio	Texas A&M University-San Antonio
A/E.....	Architect/Engineer
AgriLife Extension.....	Texas A&M AgriLife Extension Service
AgriLife Research	Texas A&M AgriLife Research
BOR	Board of Regents
FP&C.....	Facilities Planning and Construction
POR.....	Program of Requirements
PUF	Permanent University Fund
PVAMU	Prairie View A&M University
RELLIS	Respect, Excellence, Leadership, Loyalty, Integrity and Selfless Service
RFS.....	Revenue Financing System
TAMHSC	Texas A&M Health Science Center
TAMIU	Texas A&M International University
TAMUG.....	Texas A&M University at Galveston
TAMUT	Texas A&M University-Texarkana
Tarleton.....	Tarleton State University
TEES.....	Texas A&M Engineering Experiment Station
TEEX.....	Texas A&M Engineering Extension Service
Texas A&M at Qatar.....	Texas A&M University at Qatar
Texas A&M	Texas A&M University
Texas A&M-Kingsville.....	Texas A&M University-Kingsville
TDEM.....	Texas Division of Emergency Management
TFS.....	Texas A&M Forest Service
THECB.....	Texas Higher Education Coordinating Board
TTI.....	Texas A&M Transportation Institute
TVMDL.....	Texas A&M Veterinary Medical Diagnostic Laboratory
UTIMCO.....	The University of Texas/Texas A&M Investment Management Company
WTAMU.....	West Texas A&M University

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Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Approval of Fiscal Year 2024 Service Department Accounts

Proposed Board Action:

Approve the fiscal year 2024 service department accounts as submitted by the members of The Texas A&M University System (A&M System).

Background Information:

All members of the A&M System have submitted all service department accounts for the fiscal year ending August 31, 2024. Staff members in the System Office of Budgets and Accounting have reviewed these accounts in detail.

The General Appropriations Act allows appropriations to be used to reimburse any service department that is established by authority of the governing board and operated for the benefit of one or more members of a system. System Regulation [21.01.05, Service Departments or Centers](#), provides information regarding the general rules that govern the establishment, utilization and operation of service departments within the A&M System.

A detailed listing of service department accounts by member is included in the attached exhibit.

A&M System Funding or Other Financial Implications:

The funding implications of service departments are included in the fiscal year 2024 operating budgets.

Strategic Plan Imperative(s) this Item Advances:

This agenda item is relevant to the advancement of all the imperatives of the Strategic Plan.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
Office of the Deputy Chancellor and Chief Financial Officer
June 30, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of Fiscal Year 2024 Service Department Accounts

I recommend adoption of the following minute order:

“The service department accounts for the members of The Texas A&M University System for the fiscal year ending August 31, 2024, included in the exhibit, are hereby approved subject to the provisions contained in System Regulation 21.01.05, *Service Departments or Centers*.”

Respectfully submitted,

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

Approved for Legal Sufficiency:

John Sharp
Chancellor

Ray Bonilla
General Counsel

**The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024**

ITEM
EXHIBIT

Prairie View A&M University

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
227100 - Utility System Revenue Fund	\$0	\$1,362,831	\$1,362,831	\$0	\$0	\$0
227106 - Water Treatment Plant	\$0	\$438,000	\$438,000	\$0	\$0	\$0
227107 - Wastewater Treatment Plant	\$0	\$802,000	\$802,000	\$0	\$0	\$0
227155 - Outsourced Services	\$0	\$8,795,794	\$8,795,794	\$0	\$0	\$0
227311 - Lump Sum Reserve - Local Accounts	\$0	\$108,250	\$108,250	\$0	\$0	\$0
227600 - Surplus Property	\$0	\$7,211	\$7,211	\$0	\$0	\$0
227701 - Campus Mail Services	\$0	\$96,000	\$96,000	\$0	\$0	\$0
227710 - Voice Over Ip	\$0	\$1,118,399	\$1,118,399	\$0	\$0	\$0
227800 - Transportation Center	\$0	\$270,000	\$412,832	(\$142,832)	\$142,832	\$0
271300 - Administrative Ohcr	\$0	\$5,441,478	\$0	\$5,441,478	(\$5,441,478)	\$0
271301 - Business Affairs	\$0	\$0	\$115,032	(\$115,032)	\$115,032	\$0
271302 - Financial Management Services	\$0	\$0	\$839,679	(\$839,679)	\$839,679	\$0
271303 - Procurement And Disbursement	\$0	\$0	\$398,187	(\$398,187)	\$398,187	\$0
271305 - Human Resources	\$0	\$0	\$835,032	(\$835,032)	\$835,032	\$0
271306 - Campus Planning	\$0	\$0	\$592,151	(\$592,151)	\$592,151	\$0
271307 - Information Resource	\$0	\$0	\$62,362	(\$62,362)	\$62,362	\$0
271308 - Environmental Health & Safety	\$0	\$0	\$68,542	(\$68,542)	\$68,542	\$0
271312 - University Assessments	\$0	\$0	\$1,389,381	(\$1,389,381)	\$1,389,381	\$0
271314 - University Police Department	\$0	\$0	\$998,280	(\$998,280)	\$998,280	\$0
Total	\$0	\$18,439,963	\$18,439,963	\$0	\$0	\$0

**The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024**

Prairie View A&M University

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
Revenue	Sales And Services		\$18,439,963	\$0			
Expense	Salaries - Non-Faculty		\$0	\$3,178,604			
	Wages		\$0	\$154,141			
	Benefits		\$0	\$887,347			
	Utilities		\$0	\$48,232			
	Operations And Maintenance		\$0	\$14,071,639			
	Equipment (Capitalized)		\$0	\$100,000			
Total		\$0	\$18,439,963	\$18,439,963	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Tarleton State University

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
280700 - Motor Pool-Transportation		\$0	\$29,737	\$29,737	\$0	\$0	\$0
281100 - Tiaer Laboratory Services		\$0	\$133,765	\$133,765	\$0	\$0	\$0
282000 - Uci Reserve		\$0	\$43,683	\$43,683	\$0	\$0	\$0
283000 - Lump Sum Reserve		\$0	\$472,952	\$472,952	\$0	\$0	\$0
Total		\$0	\$680,137	\$680,137	\$0	\$0	\$0
Revenue	Sales And Services		\$680,137	\$0			
Expense	Operations And Maintenance		\$0	\$680,137			
Total		\$0	\$680,137	\$680,137	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M International University

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
218030 - Service Department-Postage		\$0	\$27,000	\$27,000	\$0	\$0	\$0
218040 - Service Department-Printing & Suppo		\$0	\$76,000	\$76,000	\$0	\$0	\$0
218050 - Service Department-Paper Supply		\$0	\$20,000	\$20,000	\$0	\$0	\$0
230062 - Unemployment Compensation Insurance		\$0	\$50,000	\$50,000	\$0	\$0	\$0
250001 - Lump Sum Reserve Service Center-Is		\$0	\$100,000	\$100,000	\$0	\$0	\$0
Total		\$0	\$273,000	\$273,000	\$0	\$0	\$0
Revenue	Sales And Services		\$273,000	\$0			
Expense	Benefits		\$0	\$150,000			
	Operations And Maintenance		\$0	\$123,000			
Total		\$0	\$273,000	\$273,000	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
200230 - University Police	\$0	\$3,661,703	\$3,661,703	\$0	\$0	\$0
270040 - Chemistry Department Stockroom Revo	\$0	\$275,000	\$275,000	\$0	\$0	\$0
270120 - Hazardous Waste Disposal	\$0	\$167,000	\$167,000	\$0	\$0	\$0
270160 - Utilities & Energy Services	\$14,510,250	\$57,541,413	\$39,634,935	\$17,906,478	(\$17,621,604)	\$14,795,124
270180 - Laboratory For Molecular Simulation	\$0	\$31,337	\$31,337	\$0	\$0	\$0
270220 - Landscape Maintenance - Outsourced	\$0	\$13,297,422	\$13,297,422	\$0	\$0	\$0
270230 - Building Maintenance - Outsourced	\$0	\$38,962,555	\$38,962,555	\$0	\$0	\$0
270240 - Custodial Services - Outsourced	\$0	\$26,690,290	\$26,690,290	\$0	\$0	\$0
270260 - Procurement Services	\$0	\$0	\$519,314	(\$519,314)	\$519,314	\$0
270280 - Lab For Gas-Surface Interactions	\$0	\$40,000	\$40,000	\$0	\$0	\$0
270300 - Texas A&M Information Technology	\$4,053,924	\$72,739,207	\$76,597,627	(\$3,858,420)	(\$195,504)	\$0
270310 - Tamu Geoinnovation Service Center	\$0	\$145,000	\$145,000	\$0	\$0	\$0
270370 - Uci Reserve	\$0	\$508,282	\$326,322	\$181,960	\$0	\$181,960
270390 - Hif	\$0	\$360,000	\$360,000	\$0	\$0	\$0
270430 - Experimental Genomics Core	\$0	\$1,200,000	\$1,200,000	\$0	\$0	\$0
270440 - Rodent Preclinical Phenotyping Core	\$0	\$85,000	\$85,000	\$0	\$0	\$0
270450 - Center For Chemical Characterizatio	\$0	\$100,000	\$100,000	\$0	\$0	\$0
270490 - Cyclotron Operations	\$0	\$5,000,000	\$5,000,000	\$0	\$0	\$0
270500 - Carc Support Services - Sales	\$0	\$170,000	\$170,000	\$0	\$0	\$0
270530 - Microscopy & Imaging Operations	\$0	\$283,378	\$283,378	\$0	\$0	\$0
270580 - University Mail Service	\$0	\$1,090,000	\$1,090,000	\$0	\$0	\$0
270590 - Cmp Services	\$0	\$2,900,000	\$2,900,000	\$0	\$0	\$0
270600 - Library Photocopy & Ind Service	\$0	\$20,000	\$20,000	\$0	\$0	\$0
270620 - Transportation Center Vehicle Renta	\$1,910,960	\$9,090,270	\$7,274,683	\$1,815,587	\$0	\$3,726,547
270640 - Veterinary Pathological Service	\$0	\$52,500	\$52,500	\$0	\$0	\$0
270660 - Veterinary Medical Park-Other	\$0	\$525,000	\$525,000	\$0	\$0	\$0
270710 - Interactive Video Network	\$0	\$3,711,656	\$3,711,656	\$0	\$0	\$0
270780 - Biology Services Account	\$0	\$200,000	\$200,000	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270800 - Environmental Health & Safety	\$0	\$50,000	\$50,000	\$0	\$0	\$0
270820 - Cet Service Department	\$0	\$135,000	\$135,000	\$0	\$0	\$0
270880 - Physics Services	\$0	\$87,280	\$87,280	\$0	\$0	\$0
270940 - Ppri Survey Lab	\$0	\$70,000	\$70,000	\$0	\$0	\$0
270990 - Purchased Utilities	\$0	\$48,281,819	\$48,281,819	\$0	\$0	\$0
271020 - Protein Chemistry Laboratory	\$20,000	\$80,000	\$88,000	(\$8,000)	\$0	\$12,000
271050 - Material Characterization Facility	\$0	\$300,000	\$300,000	\$0	\$0	\$0
271060 - Image Analysis Service Center	\$0	\$15,750	\$15,750	\$0	\$0	\$0
271150 - Auxiliary Overhead Assessment	\$50,000	\$8,554,800	\$10,558	\$8,544,242	(\$8,594,242)	\$0
271160 - President'S Office	\$0	\$0	\$109,188	(\$109,188)	\$109,188	\$0
271260 - Vpfn/Cfo	\$0	\$0	\$186,857	(\$186,857)	\$186,857	\$0
271270 - Budget Office	\$0	\$0	\$17,977	(\$17,977)	\$17,977	\$0
271290 - Employee & Org Development	\$0	\$0	\$2,347,938	(\$2,347,938)	\$2,347,938	\$0
271300 - Fmo & Uas	\$0	\$0	\$65,442	(\$65,442)	\$65,442	\$0
271330 - Marcom Operating	\$1,500,000	\$600,000	\$2,504,655	(\$1,904,655)	\$404,655	\$0
271340 - Vp For Operations	\$0	\$0	\$95,000	(\$95,000)	\$95,000	\$0
271350 - Ehstd	\$200,000	\$0	\$498,122	(\$498,122)	\$298,122	\$0
271360 - University Risk And Compliance	\$0	\$0	\$112,689	(\$112,689)	\$112,689	\$0
271380 - Contract Administration	\$4,411	\$0	\$46,864	(\$46,864)	\$42,453	\$0
271390 - Student Affairs Finance	\$0	\$1,267,661	\$1,267,661	\$0	\$0	\$0
271400 - System Assessments	\$0	\$0	\$2,409,305	(\$2,409,305)	\$2,409,305	\$0
271410 - Background Checks	\$0	\$0	\$225,000	(\$225,000)	\$225,000	\$0
271490 - Vp University Advancement	\$0	\$0	\$300,000	(\$300,000)	\$300,000	\$0
271570 - Flow Cytometry Facility	\$0	\$21,000	\$21,000	\$0	\$0	\$0
271630 - Lump Sum Termination Reserve-Nonfac	\$0	\$1,846,000	\$2,000,000	(\$154,000)	\$0	(\$154,000)
271670 - Histology Services	\$0	\$89,250	\$89,250	\$0	\$0	\$0
271680 - Necropsy Services	\$0	\$47,250	\$47,250	\$0	\$0	\$0
271690 - Key Control	\$0	\$1,275,000	\$1,274,962	\$38	\$0	\$38

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
271720 - Facm Aux Billing	\$0	\$1,030,500	\$1,030,500	\$0	\$0	\$0
271740 - Human Resources Department	\$0	\$500,000	\$500,000	\$0	\$0	\$0
271750 - Auxiliary Retiree Gip	\$400,000	\$0	\$1,322,507	(\$1,322,507)	\$922,507	\$0
271790 - Radiogenic Isotope Lab Service Ctr	\$0	\$75,000	\$75,000	\$0	\$0	\$0
271810 - Tips Services	\$0	\$140,000	\$140,000	\$0	\$0	\$0
271840 - Tprl(Translational Pathology Resear	\$0	\$200,000	\$200,000	\$0	\$0	\$0
271870 - Stable Isotope Geosciences Facility	\$0	\$150,000	\$150,000	\$0	\$0	\$0
271890 - Metal Shop	\$0	\$50,000	\$50,000	\$0	\$0	\$0
271900 - Glass Shop	\$0	\$50,000	\$50,000	\$0	\$0	\$0
271910 - X-Ray Diffraction	\$0	\$100,000	\$100,000	\$0	\$0	\$0
271920 - Nmr Spectroscopy	\$0	\$100,000	\$100,000	\$0	\$0	\$0
271940 - Nitrogen Services	\$0	\$75,000	\$75,000	\$0	\$0	\$0
271960 - Ilsb Service/Supplies	\$0	\$30,000	\$30,000	\$0	\$0	\$0
272010 - Procurement Services	\$0	\$0	\$556,830	(\$556,830)	\$556,830	\$0
272110 - Global Health Research Complex	\$0	\$1,400,000	\$1,400,000	\$0	\$0	\$0
273010 - Tips Operational Support Services-O	\$0	\$55,000	\$55,000	\$0	\$0	\$0
274000 - Sponsored Research Services	\$0	\$21,374,335	\$21,374,335	\$0	\$0	\$0
274200 - Research Info Systems Service Dept	\$0	\$3,537,305	\$3,537,305	\$0	\$0	\$0
Total	\$22,649,545	\$330,434,963	\$316,724,766	\$13,710,197	(\$17,798,073)	\$18,561,669

**The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024**

Texas A&M University

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
Revenue	Sales And Services		\$329,228,963	\$0			
	Investment Income		\$140,000	\$0			
	Other Operating Income		\$1,066,000	\$0			
Expense	Salaries - Faculty		\$0	\$116,000			
	Salaries - Non-Faculty		\$0	\$72,170,246			
	Wages		\$0	\$4,145,357			
	Benefits		\$0	\$26,724,048			
	Utilities		\$0	\$47,995,479			
	Operations And Maintenance		\$0	\$165,161,780			
	Equipment (Capitalized)		\$0	\$411,856			
Total		\$22,649,545	\$330,434,963	\$316,724,766	\$13,710,197	(\$17,798,073)	\$18,561,669

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University at Galveston

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
290010 - Uci Reserve		\$0	\$75,000	\$75,000	\$0	\$0	\$0
290020 - Copy Center Revolving Fund		\$0	\$150,000	\$150,000	\$0	\$0	\$0
290040 - Telephone Operations		\$0	\$65,000	\$65,000	\$0	\$0	\$0
290050 - University Mail Service		\$0	\$2,000	\$2,000	\$0	\$0	\$0
290060 - University Mail - Postage		\$0	\$24,000	\$24,000	\$0	\$0	\$0
290140 - Seafood Safety Lab		\$0	\$40,000	\$40,000	\$0	\$0	\$0
290230 - Rmo:Poster Printing		\$0	\$0	\$0	\$0	\$0	\$0
290290 - Phpl:Wastewater Treatment Services		\$0	\$25,000	\$25,000	\$0	\$0	\$0
290310 - List:Aquanautics Recharge Cntr		\$0	\$10,000	\$10,000	\$0	\$0	\$0
290600 - Messo Operations Revolving		\$0	\$100,000	\$100,000	\$0	\$0	\$0
Total		\$0	\$491,000	\$491,000	\$0	\$0	\$0
Revenue	Sales And Services		\$491,000	\$0			
Expense	Salaries - Non-Faculty		\$0	\$112,233			
	Benefits		\$0	\$30,430			
	Operations And Maintenance		\$0	\$348,337			
Total		\$0	\$491,000	\$491,000	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Health Science Center

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
280040 - Uci Reserve	\$0	\$60,000	\$60,000	\$0	\$0	\$0
280080 - Som Cell Analysis Facility	\$0	\$50,000	\$50,000	\$0	\$0	\$0
280110 - Animal Resource Unit	\$0	\$200,000	\$200,000	\$0	\$0	\$0
280160 - Lump Sum Accrued Leave Payout Reser	\$0	\$810,000	\$810,000	\$0	\$0	\$0
280170 - Prf-Pharmaceutical Research Facility	\$0	\$30,000	\$30,000	\$0	\$0	\$0
280200 - Ibt Flow Cytometry Facility	\$0	\$30,000	\$30,000	\$0	\$0	\$0
280210 - Protein Prod,Charact & Mol Interact	\$0	\$45,000	\$45,000	\$0	\$0	\$0
280220 - Clinical Learning Resource Center	\$0	\$1,418,102	\$1,418,102	\$0	\$0	\$0
280240 - Antibody Biopharma Core	\$0	\$20,000	\$20,000	\$0	\$0	\$0
280260 - Rigor Reproducibility Core	\$0	\$5,000	\$5,000	\$0	\$0	\$0
280280 - Center For Advance Imaging	\$0	\$20,000	\$20,000	\$0	\$0	\$0
280290 - Integrated Microscopy/Imaging Lab	\$0	\$40,000	\$40,000	\$0	\$0	\$0
280310 - Preclinical Imaging Core	\$0	\$50,000	\$50,000	\$0	\$0	\$0
280340 - Center Systematic Rev And Research	\$0	\$20,000	\$20,000	\$0	\$0	\$0
280440 - Clrc-Internal & External	\$0	\$300,000	\$300,000	\$0	\$0	\$0
280490 - Ibt - Animal Care Laboratory	\$0	\$300,000	\$300,000	\$0	\$0	\$0
Total	\$0	\$3,398,102	\$3,398,102	\$0	\$0	\$0

Revenue	Sales And Services	\$3,398,102	\$0			
Expense	Salaries - Faculty	\$0	\$48,000			
	Salaries - Non-Faculty	\$0	\$267,746			
	Wages	\$0	\$750,000			
	Benefits	\$0	\$203,354			
	Operations And Maintenance	\$0	\$2,129,002			
Total		\$0	\$3,398,102	\$3,398,102	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University - Central Texas

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
280100 - Serv Dept-Unemployment Comp Insuran		\$17,000	\$18,000	\$0	\$18,000	\$0	\$35,000
280150 - Serv Dept-Lump Sum Reserve		\$185,000	\$10,000	\$38,000	(\$28,000)	\$0	\$157,000
280200 - Serv Dept-Telecommunications		\$0	\$90,000	\$90,000	\$0	\$0	\$0
Total		\$202,000	\$118,000	\$128,000	(\$10,000)	\$0	\$192,000
Revenue	Sales And Services		\$118,000	\$0			
Expense	Wages		\$0	\$35,000			
	Benefits		\$0	\$3,000			
	Operations And Maintenance		\$0	\$90,000			
Total		\$202,000	\$118,000	\$128,000	(\$10,000)	\$0	\$192,000

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University - Commerce

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
272000 - Transportation		\$0	\$30,000	\$30,000	\$0	\$0	\$0
272001 - Telephone Operations		\$0	\$300,000	\$300,000	\$0	\$0	\$0
272050 - Lump Sum Vacation Reserve		\$0	\$50,000	\$50,000	\$0	\$0	\$0
272100 - Unemployment Comp Ins Reserve (Uci)		\$0	\$35,000	\$35,000	\$0	\$0	\$0
Total		\$0	\$415,000	\$415,000	\$0	\$0	\$0
Revenue	Sales And Services		\$415,000	\$0			
Expense	Benefits		\$0	\$85,000			
	Operations And Maintenance		\$0	\$330,000			
Total		\$0	\$415,000	\$415,000	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University - Corpus Christi

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270001 - Telecommunications	\$0	\$1	\$1	\$0	\$0	\$0
270032 - Administrative Copiers	\$0	\$375,000	\$375,000	\$0	\$0	\$0
270051 - Mail Services-Operating	\$0	\$94,000	\$94,000	\$0	\$0	\$0
270091 - Upd Special Events	\$0	\$35,000	\$35,000	\$0	\$0	\$0
270101 - Uci - Institutional Reserve	\$0	\$57,000	\$57,000	\$0	\$0	\$0
270111 - Local Acap Reserve Service Center	\$0	\$250,000	\$250,000	\$0	\$0	\$0
270141 - Cbi - Transportation/Maintenance	\$0	\$103,567	\$103,567	\$0	\$0	\$0
270150 - Cardinal Service Department	\$0	\$1	\$1	\$0	\$0	\$0
270190 - Boat Maintenance	\$0	\$8,250	\$5,800	\$2,450	\$0	\$2,450
270200 - Truck Maintenance	\$0	\$6,000	\$4,500	\$1,500	\$0	\$1,500
270210 - Genomics Core Lab	\$0	\$250,000	\$241,000	\$9,000	\$0	\$9,000
270220 - Wetz Lab - Sample Analysis Fees	\$0	\$0	\$0	\$0	\$0	\$0
270230 - Laguna Madre Field Station Rental	\$0	\$3,000	\$3,000	\$0	\$0	\$0
270240 - Coll Of Sci Vehicle Maintenance	\$0	\$22,000	\$15,000	\$7,000	\$0	\$7,000
270250 - Coll Of Sci Boat Maintenance	\$0	\$24,000	\$20,000	\$4,000	\$0	\$4,000
270290 - Watr Truck Maintenance	\$0	\$1	\$1	\$0	\$0	\$0
270305 - Tv Programming Services/Cable Tv	\$0	\$0	\$0	\$0	\$0	\$0
270310 - User Support Services Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270320 - Isotope Core Laboratory	\$0	\$0	\$0	\$0	\$0	\$0
270330 - Plotter Maintenance	\$0	\$1	\$1	\$0	\$0	\$0
270340 - Icore	\$0	\$4,000	\$4,000	\$0	\$0	\$0
270350 - Jung - Sample Analysis	\$0	\$52,800	\$52,800	\$0	\$0	\$0
270360 - Hu-Sample Analysis	\$0	\$3,000	\$3,000	\$0	\$0	\$0
270370 - Portnoy-Sample Analysis	\$0	\$16,000	\$16,000	\$0	\$0	\$0
270390 - Zhang - Sample Analysis	\$0	\$0	\$1	(\$1)	\$0	(\$1)
270410 - Abdulla-Sample Analysis	\$0	\$180,000	\$180,000	\$0	\$0	\$0
270420 - Dso Fee	\$0	\$1,501	\$1,501	\$0	\$0	\$0
270430 - Reese - Sample Analysis	\$0	\$1,000	\$1,000	\$0	\$0	\$0

**The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024**

Texas A&M University - Corpus Christi

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270440 - Griidc Service Center		\$0	\$50,000	\$50,000	\$0	\$0	\$0
Total		\$0	\$1,537,122	\$1,513,173	\$23,949	\$0	\$23,949
Revenue	Sales And Services		\$1,537,122	\$0			
Expense	Salaries - Non-Faculty		\$0	\$263,872			
	Wages		\$0	\$25,720			
	Benefits		\$0	\$377,672			
	Operations And Maintenance		\$0	\$845,909			
Total		\$0	\$1,537,122	\$1,513,173	\$23,949	\$0	\$23,949

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University - Kingsville

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
299980 - Local Lump Sum Vac Service Dept	\$0	\$200,000	\$200,000	\$0	\$0	\$0
299981 - Auxiliary Overhead Assessment	\$0	\$365,000	\$365,000	\$0	\$0	\$0
299983 - Service Department-Its Salaries	\$0	\$103,705	\$103,705	\$0	\$0	\$0
299986 - Ssc Contract	\$0	\$7,000,000	\$7,000,000	\$0	\$0	\$0
299989 - Service Department -Upd	\$0	\$100,000	\$100,000	\$0	\$0	\$0
299991 - Service Department - Proj Mgmt Fees	\$0	\$400,000	\$400,000	\$0	\$0	\$0
299999 - Service Department - Uci	\$0	\$40,000	\$40,000	\$0	\$0	\$0
Total	\$0	\$8,208,705	\$8,208,705	\$0	\$0	\$0

Revenue	Sales And Services	\$8,208,705	\$0			
Expense	Salaries - Non-Faculty	\$0	\$617,350			
	Wages	\$0	\$230,000			
	Benefits	\$0	\$286,355			
	Operations And Maintenance	\$0	\$7,075,000			
Total		\$0	\$8,208,705	\$8,208,705	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University - San Antonio

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270000 - Unemployment Compensation-Srvs Dept		\$0	\$33,120	\$33,120	\$0	\$0	\$0
270100 - Lump Sum Termination-Srvs Dept		\$0	\$100,000	\$100,000	\$0	\$0	\$0
Total		\$0	\$133,120	\$133,120	\$0	\$0	\$0
Revenue	Sales And Services		\$133,120	\$0			
Expense	Wages		\$0	\$87,000			
	Benefits		\$0	\$13,000			
	Operations And Maintenance		\$0	\$33,120			
Total		\$0	\$133,120	\$133,120	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M University - Texarkana

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270200 - Postage Service Center		\$0	\$39,129	\$39,129	\$0	\$0	\$0
270400 - Transportation		\$0	\$100	\$100	\$0	\$0	\$0
270501 - Unemployemnt Comp Ins-Service Cntr		\$0	\$17,634	\$17,634	\$0	\$0	\$0
270600 - Internal Printing		\$0	\$11,500	\$11,500	\$0	\$0	\$0
279900 - Lump Sum Vacation Payments		\$0	\$12,145	\$12,145	\$0	\$0	\$0
Total		\$0	\$80,508	\$80,508	\$0	\$0	\$0
Revenue	Sales And Services		\$80,508	\$0			
Expense	Benefits		\$0	\$29,779			
	Operations And Maintenance		\$0	\$50,729			
Total		\$0	\$80,508	\$80,508	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

West Texas A&M University

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270001 - Goldcard Mnt & Capital Accrual		\$0	\$133,000	\$133,000	\$0	\$0	\$0
270002 - Print Shop		\$0	\$224,033	\$224,033	\$0	\$0	\$0
270003 - Central Supply		\$0	\$46,000	\$46,000	\$0	\$0	\$0
270004 - Telecom Services		\$0	\$516,000	\$515,999	\$1	\$0	\$1
270007 - Postage		\$0	\$220,000	\$220,000	\$0	\$0	\$0
270009 - Media Supply		\$0	\$19,726	\$19,726	\$0	\$0	\$0
270011 - Local Uci Expense		\$0	\$20,700	\$20,700	\$0	\$0	\$0
270014 - Network Services		\$0	\$364,399	\$364,398	\$1	\$0	\$1
270016 - Pc Support		\$0	\$159,038	\$159,039	(\$1)	\$0	(\$1)
270018 - Tele Long Distance Svc		\$0	\$180,000	\$180,000	\$0	\$0	\$0
270057 - Lump Sum Termination Reserve		\$0	\$240,000	\$240,000	\$0	\$0	\$0
Total		\$0	\$2,122,896	\$2,122,895	\$1	\$0	\$1
Revenue	Sales And Services		\$2,122,896	\$0			
Expense	Salaries - Non-Faculty		\$0	\$761,315			
	Benefits		\$0	\$179,239			
	Operations And Maintenance		\$0	\$1,120,907			
	Equipment (Capitalized)		\$0	\$61,434			
Total		\$0	\$2,122,896	\$2,122,895	\$1	\$0	\$1

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M AgriLife Research

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270024 - Uvalde-Efs-Equip/Facilities Service	\$1,500	\$1,000	\$1,000	\$0	\$0	\$1,500
270025 - Uvalde-Lcs-Land & Crop Service Ctr	\$4,000	\$2,800	\$6,500	(\$3,700)	\$0	\$300
270026 - Amar-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270027 - Amar-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270028 - Beau-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270029 - Beau-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270030 - Unemployment Comp Ins Reserve-Local	\$825,000	\$170,000	\$50,000	\$120,000	\$0	\$945,000
270060 - Accrued Compensable Leave-Lump Sum	\$60,000	\$550,000	\$476,000	\$74,000	\$0	\$134,000
270070 - Ait-Agrilife Research Cloud	\$55,000	\$200,000	\$181,000	\$19,000	\$0	\$74,000
270072 - Geno - Genomics Sequencing Lab	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270073 - Bcbp - Protein Chemistry Lab	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270080 - Corp-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270081 - Plpm-Synthetic/Systems Biol Inn Hub	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270082 - Dall-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270083 - Dall-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270084 - Epas-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270085 - Epas-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270086 - Lubb-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270087 - Lubb-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270088 - Over-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270089 - Over-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270090 - Sang-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270091 - Sang-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270092 - Step-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270093 - Step-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270094 - Temp-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270095 - Temp-Lcs-Land & Crop Service Center	\$0	\$1,000	\$1,000	\$0	\$0	\$0
270096 - Vern-Efs-Equip/Facilities Service	\$0	\$1,000	\$1,000	\$0	\$0	\$0

**The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024**

Texas A&M AgriLife Research

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270097 - Vern-Lcs-Land & Crop Service Center		\$0	\$1,000	\$1,000	\$0	\$0	\$0
270098 - Wesl-Efs-Equip/Facilities Service		\$0	\$1,000	\$1,000	\$0	\$0	\$0
270099 - Wesl-Lcs-Land & Crop Service Center		\$0	\$1,000	\$1,000	\$0	\$0	\$0
292069 - Livestock Revolving		\$28,000	\$547,000	\$575,000	(\$28,000)	\$0	\$0
293027 - Farm Services Budget		\$310,000	\$215,000	\$425,150	(\$210,150)	\$0	\$99,850
293068 - Bio & Bio Stockroom Budget		\$0	\$1,520,000	\$1,479,450	\$40,550	\$0	\$40,550
Total		\$1,283,500	\$3,231,800	\$3,220,100	\$11,700	\$0	\$1,295,200
Revenue	Sales And Services		\$3,231,800	\$0			
Expense	Salaries - Non-Faculty		\$0	\$155,550			
	Wages		\$0	\$601,500			
	Benefits		\$0	\$180,100			
	Operations And Maintenance		\$0	\$2,282,950			
Total		\$1,283,500	\$3,231,800	\$3,220,100	\$11,700	\$0	\$1,295,200

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M AgriLife Extension Service

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
210440 - Fleet Service Center		\$298,850	\$900,000	\$723,000	\$177,000	\$0	\$475,850
211000 - Uci Reserve - Local Funds		\$203,768	\$36,996	\$53,014	(\$16,018)	\$0	\$187,750
211005 - Service Center - Lump Sum Payments		\$0	\$315,129	\$290,386	\$24,743	\$0	\$24,743
257440 - Computer Service Center		\$52,393	\$2,660,420	\$2,510,365	\$150,055	\$0	\$202,448
Total		\$555,011	\$3,912,545	\$3,576,765	\$335,780	\$0	\$890,791
Revenue	Sales And Services		\$3,862,545	\$0			
	Other Operating Income		\$50,000	\$0			
Expense	Salaries - Non-Faculty		\$0	\$143,603			
	Wages		\$0	\$436,552			
	Benefits		\$0	\$86,699			
	Operations And Maintenance		\$0	\$2,909,911			
Total		\$555,011	\$3,912,545	\$3,576,765	\$335,780	\$0	\$890,791

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Forest Service

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270011 - Fleet Leasing & Sales		\$0	\$300	\$300	\$0	\$0	\$0
270021 - Information Resources Service Dept		\$0	\$811,512	\$811,512	\$0	\$0	\$0
270110 - Uci Local Reserve		\$1,850	\$350	\$2,200	(\$1,850)	\$0	\$0
270120 - Lump Sum Payments Reserve		\$7,000	\$13,000	\$20,000	(\$7,000)	\$0	\$0
271002 - Equip Repairs/Replacement-Frd		\$415,000	\$0	\$415,000	(\$415,000)	\$0	\$0
280013 - Wildfire Cache Svc Dept		\$0	\$100,000	\$100,000	\$0	\$0	\$0
280022 - Tfs Catering Service Department		\$0	\$1,000	\$1,000	\$0	\$0	\$0
Total		\$423,850	\$926,162	\$1,350,012	(\$423,850)	\$0	\$0
Revenue	Sales And Services		\$926,162	\$0			
Expense	Salaries - Non-Faculty		\$0	\$479,452			
	Wages		\$0	\$18,000			
	Benefits		\$0	\$164,060			
	Operations And Maintenance		\$0	\$273,500			
	Equipment (Capitalized)		\$0	\$415,000			
Total		\$423,850	\$926,162	\$1,350,012	(\$423,850)	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Veterinary Medical Diagnostic Laboratory

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
295020 - Uci Reserve - Ps		\$0	\$2,653	\$2,653	\$0	\$0	\$0
295050 - Lump Sum Termination Reserve-Nonfac		\$0	\$106,147	\$106,147	\$0	\$0	\$0
Total		\$0	\$108,800	\$108,800	\$0	\$0	\$0
Revenue	Sales And Services		\$108,800	\$0			
Expense	Benefits		\$0	\$108,800			
	Operations And Maintenance		\$0	\$0			
Total		\$0	\$108,800	\$108,800	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Engineering Experiment Station

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270000 - Wind Tunnel-Internal Research Servi	\$0	\$100,000	\$100,000	\$0	\$0	\$0
270060 - Cleanroom Operating Account	\$0	\$200,000	\$200,000	\$0	\$0	\$0
270230 - Reactor Services-Internal	\$0	\$65,000	\$65,000	\$0	\$0	\$0
270320 - Materials & Mechanics Lab-Internal	\$0	\$25,000	\$25,000	\$0	\$0	\$0
270420 - Thermal Analysis Dsc/Tga (Internal)	\$0	\$42,919	\$42,919	\$0	\$0	\$0
270430 - Materials Char X-Ray Diff (New)	\$0	\$22,000	\$22,000	\$0	\$0	\$0
270460 - High Bay Lab - Internal	\$0	\$80,000	\$80,000	\$0	\$0	\$0
270690 - Materials Prep Edm Usage (New)	\$0	\$72,000	\$72,000	\$0	\$0	\$0
270700 - Magnetic Prop Meas Syst - Internal	\$0	\$20,000	\$20,000	\$0	\$0	\$0
270730 - Nctm Equipment Service (Internal)	\$0	\$59,188	\$59,188	\$0	\$0	\$0
270740 - Uci Assessments	\$0	\$30,000	\$30,000	\$0	\$0	\$0
270760 - Material Char & Manuf Labs-Internal	\$0	\$4,812	\$4,812	\$0	\$0	\$0
270810 - Direct Digital Manuf Fac - Internal	\$0	\$2,314	\$2,314	\$0	\$0	\$0
270910 - Nal Services - Internal	\$0	\$150,000	\$150,000	\$0	\$0	\$0
270930 - Hr Services	\$0	\$100,000	\$100,000	\$0	\$0	\$0
270950 - Etb Cost Center (Int)	\$0	\$30,000	\$30,000	\$0	\$0	\$0
271100 - Qatar Allowances	\$0	\$880,000	\$880,000	\$0	\$0	\$0
271130 - Lump Sum Acap Reserve - Local	\$0	\$550,000	\$550,000	\$0	\$0	\$0
271140 - Qatar Admin Effort	\$0	\$355,000	\$355,000	\$0	\$0	\$0
271340 - Aerospace Fdm360 Rapid Prototype	\$0	\$1,526	\$1,526	\$0	\$0	\$0
271350 - Metallography (Internal)	\$0	\$7,596	\$7,596	\$0	\$0	\$0
271390 - Ecae Processing (Internal)	\$0	\$8,176	\$8,176	\$0	\$0	\$0
271410 - Lens Laser (Internal)	\$0	\$2,370	\$2,370	\$0	\$0	\$0
271420 - Ct Scanner (Internal)	\$0	\$3,299	\$3,299	\$0	\$0	\$0
271430 - Turbo Lab Machine Shop (Internal)	\$0	\$20,353	\$20,353	\$0	\$0	\$0
271440 - Soft Matter Facility (Internal)	\$0	\$65,000	\$65,000	\$0	\$0	\$0
271600 - Environmental Biotechnology Svc	\$0	\$7,333	\$7,333	\$0	\$0	\$0
271640 - Research Integration Ctr (Internal)	\$0	\$107,539	\$107,539	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Engineering Experiment Station

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
271650 - Sai Services (Internal)	\$0	\$4,860	\$4,860	\$0	\$0	\$0
271660 - Ieei Services (Internal)	\$0	\$2,366	\$2,366	\$0	\$0	\$0
271670 - Ion Chromatography Measurement	\$0	\$2,307	\$2,307	\$0	\$0	\$0
271690 - Bcdc Ipg Services (Internal)	\$0	\$22,720	\$22,720	\$0	\$0	\$0
271720 - Small Scale Mechanical Behavior (I)	\$0	\$328,314	\$328,314	\$0	\$0	\$0
Total	\$0	\$3,371,992	\$3,371,992	\$0	\$0	\$0

Revenue	Sales And Services	\$3,371,992	\$0			
Expense	Salaries - Faculty	\$0	\$99,420			
	Salaries - Non-Faculty	\$0	\$219,004			
	Wages	\$0	\$678,759			
	Benefits	\$0	\$139,761			
	Operations And Maintenance	\$0	\$2,206,968			
	Equipment (Capitalized)	\$0	\$28,080			
Total		\$0	\$3,371,992	\$3,371,992	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Transportation Institute

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
270199 - Budget-027010 Motor Vehicles		\$350,000	\$135,000	\$135,000	\$0	\$0	\$350,000
270299 - Budget-027020 Computer Operations		\$0	\$2,575,724	\$2,575,724	\$0	\$0	\$0
270399 - Budget-027030 Research Equip & Test		\$325,000	\$310,767	\$310,767	\$0	\$0	\$325,000
270499 - Budget-027040 Supplies & Services		\$9,500	\$101,973	\$101,973	\$0	\$0	\$9,500
270599 - Budget-027050 Visual Media		\$45,000	\$637,099	\$637,099	\$0	\$0	\$45,000
270699 - Budget-027060 Proving Grounds		\$1,600,000	\$1,901,617	\$1,901,617	\$0	\$0	\$1,600,000
270799 - Budget-027070 Cloud Service		\$7,800	\$6,564	\$6,564	\$0	\$0	\$7,800
279099 - Budget-027900 Uci Reserve		\$276,600	\$20,000	\$20,000	\$0	\$0	\$276,600
279999 - Budget-027995 Lump Sum Reserve		\$2,500	\$758,857	\$758,857	\$0	\$0	\$2,500
Total		\$2,616,400	\$6,447,601	\$6,447,601	\$0	\$0	\$2,616,400
Revenue	Sales And Services		\$6,447,601	\$0			
Expense	Salaries - Faculty		\$0	\$108,176			
	Salaries - Non-Faculty		\$0	\$3,098,725			
	Wages		\$0	\$567,200			
	Benefits		\$0	\$1,053,500			
	Operations And Maintenance		\$0	\$1,425,000			
	Equipment (Capitalized)		\$0	\$195,000			
Total		\$2,616,400	\$6,447,601	\$6,447,601	\$0	\$0	\$2,616,400

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M Engineering Extension Service

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
230100 - Digital Printing Services		\$314,873	\$2,316,010	\$2,316,009	\$1	\$0	\$314,874
232100 - Unemployment Comp Ins		\$500,000	\$20,000	\$20,000	\$0	\$0	\$500,000
237100 - Curriculum		\$724,438	\$2,090,765	\$2,242,021	(\$151,256)	\$0	\$573,182
238100 - Professional Development		\$636,458	\$128,346	\$150,650	(\$22,304)	\$0	\$614,154
239100 - Business Marketing		\$155,760	\$1,097,311	\$976,806	\$120,505	\$0	\$276,265
240100 - Vehicle Operations		\$1,774,916	\$820,199	\$708,824	\$111,375	\$0	\$1,886,291
259100 - Infrastructure		\$21,089,000	\$4,904,721	\$484,795	\$4,419,926	(\$4,075,454)	\$21,433,472
260100 - Maintenance		\$188,353	\$4,653,097	\$4,711,542	(\$58,445)	\$0	\$129,908
268100 - Equipment Use Charge		\$7,824,366	\$2,178,455	\$1,110,746	\$1,067,709	\$0	\$8,892,075
281100 - Lump Sum Leave Pay		\$1,000,000	\$400,000	\$400,000	\$0	\$0	\$1,000,000
Total		\$34,208,164	\$18,608,904	\$13,121,393	\$5,487,511	(\$4,075,454)	\$35,620,221
Revenue	Sales And Services		\$18,608,904	\$0			
Expense	Salaries - Non-Faculty		\$0	\$5,295,735			
	Wages		\$0	\$693,275			
	Benefits		\$0	\$1,459,901			
	Operations And Maintenance		\$0	\$5,577,482			
	Equipment (Capitalized)		\$0	\$95,000			
Total		\$34,208,164	\$18,608,904	\$13,121,393	\$5,487,511	(\$4,075,454)	\$35,620,221

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas Division of Emergency Management

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
299990 - Svc Ctr-Fleet Management		\$0	\$150,000	\$150,000	\$0	\$0	\$0
299995 - Svc Ctr-It Services & Support		\$0	\$110,000	\$110,000	\$0	\$0	\$0
299996 - Svc Ctr-Training & Development		\$0	\$90,000	\$90,000	\$0	\$0	\$0
299998 - Svc Ctr-Equipment/Facilities Svcs		\$0	\$100,000	\$100,000	\$0	\$0	\$0
Total		\$0	\$450,000	\$450,000	\$0	\$0	\$0
Revenue	Sales And Services		\$450,000	\$0			
Expense	Operations And Maintenance		\$0	\$450,000			
Total		\$0	\$450,000	\$450,000	\$0	\$0	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M System Offices

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
250050 - Group Health/Dental Esr	\$73,746,112	\$0	\$0	\$0	\$0	\$73,746,112
250070 - Flexible Spending Account	\$289,953	\$0	\$162,000	(\$162,000)	\$150,000	\$277,953
250090 - Basic Life Reserve	\$2,080,772	\$0	\$4,000	(\$4,000)	\$0	\$2,076,772
250100 - Optional/Dependent Life Reserve	\$508,800	\$0	\$60,000	(\$60,000)	\$0	\$448,800
250150 - System-Wide Value Added Programs	\$0	\$0	\$2,573,052	(\$2,573,052)	\$2,573,052	\$0
260040 - Tamus - Self Insured Health/Dental	\$0	\$452,548,734	\$461,261,298	(\$8,712,564)	\$8,712,564	\$0
260100 - Lump Sum Payment Reserve	\$200,000	\$180,000	\$0	\$180,000	\$0	\$380,000
260500 - Health Plan Administration	\$0	\$0	\$1,413,697	(\$1,413,697)	\$1,413,697	\$0
261010 - Worker'S Compensation Insurance	\$4,600,000	\$5,700,000	\$2,500,000	\$3,200,000	(\$1,488,047)	\$6,311,953
261030 - Rms Administration	\$0	\$0	\$1,636,983	(\$1,636,983)	\$1,636,983	\$0
261200 - Property Insurance	\$6,500,000	\$21,000,000	\$22,000,000	(\$1,000,000)	(\$1,690,560)	\$3,809,440
261300 - Auto Insurance	\$1,200,000	\$500,000	\$460,000	\$40,000	(\$80,000)	\$1,160,000
261400 - Malpractice Insurance	\$1,500,000	\$0	\$1,000	(\$1,000)	\$0	\$1,499,000
261500 - Rolling Owner Controlled Insurance	\$6,500,000	\$0	\$0	\$0	\$0	\$6,500,000
270010 - System Aircraft	\$0	\$200,000	\$1,133,164	(\$933,164)	\$933,164	\$0
271001 - Sago Services - Revenues	\$7,600,000	\$10,535,259	\$0	\$10,535,259	(\$11,225,571)	\$6,909,688
271010 - Administrative Oversight Account	\$0	\$0	\$119,000	(\$119,000)	\$119,000	\$0
271030 - Famis Services	\$0	\$0	\$154,848	(\$154,848)	\$154,848	\$0
271050 - Human Resources Administration	\$0	\$0	\$6,000	(\$6,000)	\$6,000	\$0
271060 - Chancellor'S Salary	\$0	\$0	\$1,023,722	(\$1,023,722)	\$1,023,722	\$0
271070 - Executive Vice Chancellor & Cfo	\$0	\$0	\$94,065	(\$94,065)	\$94,065	\$0
271080 - Treasury Services	\$0	\$0	\$560,233	(\$560,233)	\$560,233	\$0
271100 - System Internal Audit	\$0	\$0	\$3,741,698	(\$3,741,698)	\$3,741,698	\$0
271160 - Federal Relations	\$0	\$0	\$1,351,057	(\$1,351,057)	\$1,351,057	\$0
271180 - Building Operations - Local	\$0	\$0	\$163,200	(\$163,200)	\$163,200	\$0
271200 - System Enterprise Applications	\$0	\$0	\$2,081,352	(\$2,081,352)	\$2,081,352	\$0
271260 - Services-Information Technology	\$0	\$0	\$55,281	(\$55,281)	\$55,281	\$0
271270 - Svcs-Research Office	\$0	\$0	\$31,350	(\$31,350)	\$31,350	\$0

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M System Offices

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
271300 - System Ethics & Compl Off - Assess		\$0	\$0	\$202,345	(\$202,345)	\$202,345	\$0
271400 - Services - Board Of Regents		\$0	\$0	\$212,710	(\$212,710)	\$212,710	\$0
271440 - Svcs - Academic Affairs		\$0	\$0	\$144,564	(\$144,564)	\$144,564	\$0
271470 - Services - State Relations		\$0	\$0	\$25,000	(\$25,000)	\$25,000	\$0
271510 - Svcs - Chanc Student Adisory Board		\$0	\$0	\$2,000	(\$2,000)	\$2,000	\$0
271560 - Services - Sys Ofce Of Mrktg & Comm		\$0	\$0	\$139,695	(\$139,695)	\$139,695	\$0
271690 - Budgets & Accounting		\$0	\$0	\$1,442,554	(\$1,442,554)	\$1,442,554	\$0
271730 - Business Affairs		\$0	\$0	\$3,000	(\$3,000)	\$3,000	\$0
271740 - Hub & Procurement Services		\$0	\$0	\$2,000	(\$2,000)	\$2,000	\$0
271780 - Business Computing Services-Local		\$0	\$0	\$79,535	(\$79,535)	\$79,535	\$0
271990 - Merit Increases - Assessments		\$0	\$0	\$520,000	(\$520,000)	\$520,000	\$0
271995 - Information Security Officer		\$0	\$0	\$10,000	(\$10,000)	\$10,000	\$0
273001 - Facilities Planning & Construction		\$0	\$22,074,917	\$17,332,738	\$4,742,179	(\$594,192)	\$4,147,987
Total		\$104,725,637	\$512,738,910	\$522,703,141	(\$9,964,231)	\$12,506,299	\$107,267,705
Revenue	Sales And Services		\$32,990,176	\$0			
	Other Operating Income		\$479,748,734	\$0			
Expense	Salaries - Non-Faculty		\$0	\$16,989,909			
	Wages		\$0	\$211,444			
	Benefits		\$0	\$4,673,625			
	Operations And Maintenance		\$0	\$32,432,107			
	Claims And Losses		\$0	\$468,380,306			
	Equipment (Capitalized)		\$0	\$15,750			
Total		\$104,725,637	\$512,738,910	\$522,703,141	(\$9,964,231)	\$12,506,299	\$107,267,705

The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024

Texas A&M System Shared Service Center

Account And Desc	Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
261000 - Risk Transfer Policy Mgt Personnel	\$0	\$0	\$109,660	(\$109,660)	\$109,660	\$0
261001 - Environmental Safety & Security	\$0	\$0	\$94,448	(\$94,448)	\$94,448	\$0
261200 - Benefits Partner	\$0	\$0	\$153,141	(\$153,141)	\$153,141	\$0
271780 - Hcm Administration	\$0	\$3,200,000	\$1,071,615	\$2,128,385	(\$2,128,385)	\$0
271781 - Workday Services - Tech	\$0	\$590,000	\$590,000	\$0	\$0	\$0
271782 - Program And Project Management	\$0	\$225,000	\$225,000	\$0	\$0	\$0
272001 - Texas A&M System Cybersecurity	\$0	\$4,500,000	\$4,500,000	\$0	\$0	\$0
272050 - Retiree Gip	\$0	\$0	\$70,000	(\$70,000)	\$70,000	\$0
272200 - Research Security Officer	\$0	\$3,500,000	\$3,500,000	\$0	\$0	\$0
272300 - Finance Discovery	\$0	\$0	\$0	\$0	\$0	\$0
272400 - Eir Accessibility	\$0	\$203,200	\$203,200	\$0	\$0	\$0
272600 - A&M System It Shared Services	\$0	\$0	\$1,252,797	(\$1,252,797)	\$1,252,797	\$0
272610 - It Operations And Support	\$0	\$0	\$701,550	(\$701,550)	\$701,550	\$0
272620 - It Training And Development	\$0	\$0	\$174,038	(\$174,038)	\$174,038	\$0
273001 - Hr Shared Services	\$0	\$182,000	\$182,000	\$0	\$0	\$0
277200 - Rellis - Campus Operations	\$0	\$2,500,000	\$2,500,000	\$0	\$0	\$0
277400 - Rellis - Campus 5g Network	\$0	\$300,000	\$300,000	\$0	\$0	\$0
277500 - Rellis - Campus Network As A Servic	\$0	\$1,950,000	\$1,950,000	\$0	\$0	\$0
277600 - Rellis - Real Property	\$0	\$330,000	\$330,000	\$0	\$0	\$0
278000 - Ttc-Operating-Account-Income-Local	\$0	\$8,784,779	\$8,784,779	\$0	\$0	\$0
Total	\$0	\$26,264,979	\$26,692,228	(\$427,249)	\$427,249	\$0

**The Texas A&M University System
Service Department Activities
Budget for Fiscal Year Ending: August 31, 2024**

Texas A&M System Shared Service Center

Account And Desc		Beginning Balance	Revenue Budget	Expense Budget	Net Operating	Transfers	Ending Balance
Revenue	Sales And Services		\$26,264,979	\$0			
Expense	Salaries - Non-Faculty		\$0	\$13,022,392			
	Wages		\$0	\$356,500			
	Benefits		\$0	\$3,812,549			
	Utilities		\$0	\$103,600			
	Operations And Maintenance		\$0	\$8,885,187			
	Equipment (Capitalized)		\$0	\$512,000			
Total		\$0	\$26,264,979	\$26,692,228	(\$427,249)	\$427,249	\$0

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Approval of Fiscal Year 2024 Operating Budgets

Proposed Board Action:

Approve the fiscal year 2024 operating budgets recommended by the Chief Executive Officers (CEO) of The Texas A&M University System (A&M System).

Background Information:

The Presidents of the academic universities, the Vice Chancellor for Agriculture and Life Sciences, the Interim Vice Chancellor for Engineering, the Vice Chancellor for Disaster and Emergency Services, and the Chancellor of the A&M System have submitted budget recommendations for the fiscal year ending August 31, 2024.

Financial reviews of the proposed FY 2024 operating budgets have been performed by the System Office of Budgets and Accounting staff. Based on these reviews, an executive summary of the detailed operating budgets for the A&M System has been provided to each member of the Board for review. In addition, programmatic budget reviews were held on July 31st and August 1st which allowed each CEO an opportunity to present an overview of their programmatic and financial direction of their institution/agency.

A&M System Funding or Other Financial Implications:

Approval of the FY 2024 operating budgets will appropriate approximately \$7.8 billion.

Strategic Plan Imperative(s) this Item Advances:

This agenda item is relevant to the advancement of all the imperatives of the Strategic Plan.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
Office of the Deputy Chancellor and Chief Financial Officer
August 2, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of Fiscal Year 2024 Operating Budgets

I recommend adoption of the following minute order:

“The operating budgets, included in the exhibit, as submitted by the members of The Texas A&M University System for the fiscal year ending August 31, 2024, are hereby approved and adopted subject to the provisions contained in System Policy 27.04, *Budget Authorizations, Limitations and Delegations of Authority*.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

Approved for Legal Sufficiency:

John Sharp
Chancellor

Ray Bonilla
General Counsel



The Texas A&M University System
FY 2024 Operating Budgets
(In Thousands)

ITEM
EXHIBIT

Member	FY 2024 Budget
Prairie View A&M University	\$ 298,648
Tarleton State University	288,827
Texas A&M International University	152,611
Texas A&M University	2,410,607
Texas A&M University at Galveston	87,130
Texas A&M Health Science Center	455,935
Texas A&M University - Central Texas	52,259
Texas A&M University - Commerce	211,763
Texas A&M University - Corpus Christi	276,392
Texas A&M University - Kingsville	176,163
Texas A&M University - San Antonio	118,896
Texas A&M University - Texarkana	66,633
West Texas A&M University	184,979
ACADEMIC SUBTOTAL	\$ 4,780,842
Texas A&M AgriLife Research	\$ 270,556
Texas A&M AgriLife Extension Service	163,178
Texas A&M Forest Service	100,072
Texas A&M Veterinary Medical Diagnostic Lab	31,046
Texas A&M Engineering Experiment Station	273,540
Texas A&M Engineering Extension Service	117,957
Texas A&M Transportation Institute	85,701
Texas Division of Emergency Management	1,483,595
AGENCY SUBTOTAL	\$ 2,525,646
System Offices	
Operations and Debt Service	500,216
Texas A&M Shared Services	17,148
The Texas A&M University System	\$ 7,823,852

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Maria L. Robinson, Chief Investment Officer and Treasurer
The Texas A&M University System

Subject: Adoption of a Resolution Authorizing the Issuance of the Board of Regents of The Texas A&M University System Permanent University Fund Bonds

Proposed Board Action:

Adopt a resolution authorizing the issuance of Permanent University Fund Bonds.

Background Information:

The resolution provides the authority for the issuance of one or more series of Permanent University Fund Bonds to: convert all or a portion of commercial paper to long-term bonds; provide funds for construction, renovation and other projects; refund previously issued bonds; and pay the costs of issuing the bonds. The authority in the amount of \$550 million (including issuance costs) will be for the period from September 1, 2023 to August 31, 2024.

Bonds will be issued only for those projects approved by the Board of Regents, and the projects which may be financed during the fiscal year are estimated at \$386 million.

Previously issued bonds which are candidates for refunding total approximately \$161 million; however, only those bonds that meet savings targets will be included in a refunding issue.

A&M System Funding or Other Financial Implications:

Debt service for Permanent University Fund Bonds will be funded with the Available University Fund.

Strategic Plan Imperative(s) this Item Advances:

This item advances Strategic Plan Imperative 6, which provides that “The A&M System, in adhering to the high standard of excellence and growth required in this strategic plan, will display prudent financial stewardship and sustainability.”

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
Office of the Chief Investment Officer and Treasurer
July 12, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Adoption of a Resolution Authorizing the Issuance of the Board of Regents
of The Texas A&M University System Permanent University Fund Bonds

I recommend adoption of the following minute order:

“The resolution authorizing the issuance of the Board of Regents of The Texas A&M University System Permanent University Fund Bonds, substantially in the form of the attached exhibit, is adopted. The Chief Investment Officer and Treasurer, or other designated financial officer, is hereby authorized to take such actions as are necessary to accomplish the purposes of the resolution, including those relating to the issuance, sale, security and delivery of the bonds, all in accordance with the provisions of the resolution.”

Respectfully submitted,

Maria L. Robinson
Chief Investment Officer and Treasurer

Approval Recommended:

John Sharp
Chancellor

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

ITEM
EXHIBIT

A RESOLUTION AUTHORIZING THE ISSUANCE, SALE, AND DELIVERY OF BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM PERMANENT UNIVERSITY FUND BONDS IN THE MAXIMUM AGGREGATE PRINCIPAL AMOUNT OF \$550 MILLION, PLEDGING REVENUES FOR THE PAYMENT THEREOF, AND APPROVING AND AUTHORIZING INSTRUMENTS AND PROCEDURES RELATING THERETO

Adopted August 16, 2023

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A RESOLUTION AUTHORIZING THE ISSUANCE, SALE, AND DELIVERY OF BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM PERMANENT UNIVERSITY FUND BONDS IN THE MAXIMUM AGGREGATE PRINCIPAL AMOUNT OF \$550 MILLION, PLEDGING REVENUES FOR THE PAYMENT THEREOF, AND APPROVING AND AUTHORIZING INSTRUMENTS AND PROCEDURES RELATING THERETO

WHEREAS, the Board of Regents (the "Board") of The Texas A&M University System (the "System") hereby determines to issue obligations pursuant to the provisions of Article VII, Section 18 of the Constitution of the State of Texas, as amended (the "Constitutional Provision"), Chapters 1207 and 1371, Texas Government Code, as amended, and other applicable laws (collectively, "Applicable Law") for the purposes hereinafter described; and

WHEREAS, the Constitutional Provision authorizes the Board to issue bonds and notes not to exceed a total amount of 10% of the cost value of investments and other assets of the Permanent University Fund (exclusive of real estate) at the time of issuance thereof, and to pledge all or any part of the Available University Fund Share (defined herein) to secure the payment of the principal and interest of those bonds and notes, for the purpose of acquiring land either with or without permanent improvements, constructing and equipping buildings or other permanent improvements, major repair and rehabilitation of buildings and other permanent improvements, acquiring capital equipment and library books and library materials, and refunding bonds or notes issued under such section or prior law, at or for the System's administration and certain component institutions and agencies of the System; and

WHEREAS, the Board has heretofore duly authorized, sold, and delivered certain outstanding obligations pursuant to the provisions of the Constitutional Provision, payable from, and secured by a first lien on and pledge of, the Available University Fund Share (such outstanding obligations, collectively, the "Outstanding Parity Bonds"), in the manner and to the extent provided in the respective resolutions authorizing the issuance of each of the Outstanding Parity Bonds (collectively, the "Parity Bond Resolutions"); and

WHEREAS, the Board has also heretofore duly authorized certain obligations pursuant to the provisions of the Constitutional Provision, payable from, and secured by a lien on and pledge of, the Available University Fund share that is junior and subordinate to the pledge of and lien on the Available University Fund Share that secures Parity Obligations (defined below) (such obligations, collectively, the "Subordinate Lien Obligations"); and

WHEREAS, the Parity Bond Resolutions reserved the right and power in the Board to issue, under certain conditions, Additional Parity Obligations (defined herein) for the purposes and to the extent provided in the Constitutional Provision and the Parity Bond Resolutions, said Additional Parity Obligations to be on a parity with the Outstanding Parity Bonds, and equally and ratably secured by and payable from a first lien on and pledge of the Available University Fund Share in the same manner and to the same extent as are the Outstanding Parity Bonds; and

WHEREAS, the Board deems it necessary and desirable to issue Additional Parity Obligations to (i) refund such of its outstanding Subordinate Lien Obligations as shall be specified

in the Award Certificate (defined herein) executed in accordance with the terms of this Resolution for the purposes of providing permanent financing for facilities and improvements financed with the proceeds of such refunded Subordinate Lien Obligations and of providing the Board with the ability to issue additional Subordinate Lien Obligations in the future as part of the System's continuing Subordinate Lien Obligations program; (ii) refund such of its Outstanding Parity Bonds as shall be specified in the Award Certificate executed in accordance with the terms of this Resolution, for the purpose of producing a net present value savings in accordance with the requirements of this Resolution; (iii) pay the Project Costs (as defined herein) of certain Eligible Projects (as defined herein); and (iv) pay costs of issuance of such Additional Parity Obligations; and

WHEREAS, the Bonds (defined herein) hereinafter authorized are to be issued and delivered as Additional Parity Obligations pursuant to the Parity Bond Resolutions and Applicable Law.

THEREFORE, BE IT RESOLVED BY THE BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM AS FOLLOWS:

SECTION 1. AUTHORIZATION AND FINDINGS.

(a) Bonds Authorized. The Board's bonds, designated as the "Board of Regents of The Texas A&M University System Permanent University Fund Bonds, Series ____" (the "Bonds"), are hereby authorized to be issued and delivered in one or more Series (defined herein) in the maximum aggregate principal amount of \$550 million (without regard to premium or discount affecting the sale price) for the purposes of (i) refunding the Refunded Notes (defined herein), (ii) refunding all or a portion of the Potential Refunded Bonds (defined herein), (iii) paying the Project Costs of certain Eligible Projects, and (iv) paying the costs of issuance relating to the Bonds. The Bonds shall be designated by the year in which they are awarded pursuant to Section 2(b) below; provided that for any Series of Bonds issued as Taxable Bonds (defined herein) the word "Taxable" shall be included in the designation of such Bonds before the word "Series."

(b) Refunding Purposes.

(i) The Board may issue Bonds to refund Refunded Obligations (defined herein) for the purpose of restructuring certain of its outstanding debt. Pursuant to Section 1207.008, Texas Government Code, as amended, the Board hereby finds that, because the Refunded Notes bear interest at variable rates, the amount of savings or loss as a result of the refunding of the Refunded Notes cannot be ascertained, and that issuing the Bonds to refund the Refunded Notes for the aforementioned purpose is in the best interest of the System.

(ii) The Board may issue Bonds to refund Refunded Bonds (defined herein) for the public purpose of producing a net present value savings expressed as a percentage of the principal amount of the Refunded Bonds, all in accordance with Section 2(b) of this Resolution.

(c) Type of Bonds. Each Series of Bonds herein authorized, unless otherwise indicated, shall be in the form of fixed rate bonds as either Current Interest Bonds (defined herein) or Capital Appreciation Bonds (defined herein).

SECTION 2. DATE, DENOMINATIONS, NUMBERS, MATURITIES OF AND INTEREST ON THE BONDS.

(a) Date, Denominations, and Numbers. The Bonds of each Series shall initially be issued, sold, and delivered hereunder as fully registered bonds, without interest coupons, in the form of (i) Taxable Bonds or Tax-Exempt Bonds (defined herein) and (ii) Current Interest Bonds or Capital Appreciation Bonds, numbered consecutively for each Series of Bonds from R-1 upward (or CR-1 upward, in the case of Capital Appreciation Bonds) (except the Initial Bond (defined herein) which shall be numbered T-1 for the Current Interest Bonds and TR-1 for the Capital Appreciation Bonds), payable to the initial purchaser of the Bonds (the "Initial Purchaser") specified by the Authorized Representative (defined herein) in the Award Certificate, or to the registered assignee or assignees of said Bonds or any portion or portions thereof (in each case, the "Registered Owner"), in Authorized Denominations (defined herein), maturing on the dates, in the years and in the principal amounts or Maturity Amounts (defined herein), respectively, and dated, all as set forth in the Award Certificate.

(b) Delegation of Board's Authority. As permitted by Applicable Law, the Authorized Representative is hereby authorized, appointed, and designated to act on behalf of the Board in selling and delivering the Bonds and carrying out other procedures specified in this Resolution, including determining and fixing (i) the date of the Bonds and the Issuance Date (defined herein) thereof; (ii) any additional or different designations or titles by which the Bonds shall be known, if any; (iii) the price at which the Bonds will be sold; (iv) the years in which the Bonds will mature; (v) the principal amount or Maturity Amount of the Bonds to mature in each of such years; (vi) the aggregate principal amount of the Bonds, including the aggregate principal amount of Current Interest Bonds and Capital Appreciation Bonds; (vii) the rate of interest to be borne by each such maturity, and whether the Bonds shall be Tax-Exempt Bonds or Taxable Bonds; (viii) the interest payment periods; (ix) the dates, prices, and terms upon and at which the Bonds shall be subject to redemption prior to Stated Maturity at the option of the Board, as well as mandatory redemption provisions, if any; (x) the designation of which Subordinate Lien Obligations shall constitute the Refunded Notes refunded by the Bonds; (xi) the designation of which Potential Refunded Bonds shall constitute the Refunded Bonds to be refunded by the Bonds; (xii) the Paying Agent/Registrar (defined herein) and Escrow Agent (defined herein), if applicable, with respect to the Bonds; (xiii) the Eligible Projects to be financed by any Series of Bonds; and (xiv) all other matters relating to the issuance, sale, and delivery of the Bonds and the refunding of the Refunded Obligations. All such determinations made by the Authorized Representative shall be specified in the Award Certificate delivered to the Executive Director, Board of Regents. Those determinations to be made by the Authorized Representative are limited, however, by the following: (i) the price to be paid for the Bonds shall not be less than 95% of the aggregate par amount thereof; (ii) none of the Bonds shall bear interest at a rate greater than the maximum rate allowed by law; (iii) none of the Bonds shall mature more than 30 years from their respective dates in accordance with the Constitutional Provision; and (iv) the aggregate principal amount of the Bonds shall not exceed \$550 million (without regard to premium or discount affecting the sale price).

In addition, each Series of Bonds issued to refund Refunded Bonds must be sold on terms that produce a present value savings when the scheduled debt service payable on such Bonds during each Bond Year is subtracted from the scheduled debt service payable on the Refunded Bonds during the same Bond Year and the remainder is discounted to the scheduled date of delivery of the Bonds of such Series set forth in the Award Certificate at a discount factor equal to the yield on such Bonds determined in accordance with section 148 of the Code (defined herein). The amount of the savings to be realized from the refunding shall be set forth in the Award Certificate. The Award Certificate for each Series of Bonds that is issued to refund Refunded Bonds or Refunded Notes shall also identify the Refunded Bonds or Refunded Notes being refunded by that Series.

The Award Certificate shall also contain a determination that the total principal amount of all outstanding Permanent University Fund Obligations (defined herein), subsequent to the issuance of the Bonds of such Series, will not exceed 10% of the cost value of investments and other assets of the Permanent University Fund (exclusive of real estate) at the time the Bonds of such Series are issued.

It is further provided, however, that, notwithstanding the foregoing provisions, the Bonds shall not be delivered unless prior to delivery (i) the Award Certificate has been executed and delivered as required by this Resolution; (ii) the Bonds have been rated by a Nationally-Recognized Rating Agency (defined herein) in one of the four highest rating categories for long-term obligations, as required by Chapter 1371, Texas Government Code, as amended; (iii) the Authorized Representative, or some other financial officer of the System designated by the Board, executes a certificate meeting the requirements of, and to the extent required by, Section 12(a) of this Resolution; and (iv) if a Series of Bonds is being issued to pay Project Costs, the Authorized Representative, or some other financial officer of the System designated by the Board, executes a certificate to the effect that such Bonds are being issued to pay Project Costs for Eligible Projects and, attached to such certificate is a listing of the Eligible Projects expected to be financed, in whole or in part, by such Bonds; provided, however, that at some future date, the Board may substitute other Eligible Projects to be financed, in whole or in part, by such Bonds for the Eligible Projects listed on such certificate.

The Award Certificate is hereby incorporated in and made a part of this Resolution and shall be filed in the minutes of the Board as a part of this Resolution.

(c) Maturities and Interest Rates. The Bonds shall mature on July 1 in each of the years and in the amounts as specified in the Award Certificate.

The Current Interest Bonds of each Series of Bonds shall bear interest calculated on the basis of a 360-day year composed of twelve 30-day months from the dates specified in the Award Certificate to their respective dates of maturity at the rates set forth in the Award Certificate; provided that interest on any Taxable Bonds may be computed as determined by the Authorized Representative in the Award Certificate (i) on the basis of a 365- or 366-day year, as applicable for the number of days actually elapsed based upon the calendar year in which the interest rate period for such Bonds commences, (ii) on the basis of a 360-day year composed of twelve 30-day months, or (iii) as otherwise determined by the Authorized Representative to be necessary to achieve the most beneficial pricing terms for such Bonds.

The Capital Appreciation Bonds of each Series of Bonds shall bear interest from the Issuance Date for such Series of Bonds, calculated on the basis of a 360-day year composed of twelve 30-day months (subject to rounding to the Compounded Amounts (defined herein) thereof), compounded semiannually on the dates set forth in the Award Certificate (the "Compounding Dates") commencing on the date set forth in the Award Certificate, and payable, together with the principal amount thereof, in the manner provided in the FORM OF BONDS at the rates set forth in the Award Certificate. Attached to the Award Certificate, if Capital Appreciation Bonds are to be issued, shall be an Exhibit (the "Compounded Amount Table") which shall set forth the rounded original principal amounts at the Issuance Date for the Capital Appreciation Bonds and the Compounded Amounts and Maturity Amounts thereof (per \$5,000 Maturity Amount) as of each Compounding Date (defined herein), commencing on the date set forth in the Award Certificate, and continuing until the final maturity of such Capital Appreciation Bonds. The Compounded Amount with respect to any date other than a Compounding Date is the amount set forth on the Compounded Amount Table with respect to the last preceding Compounding Date, plus the portion of the difference between such amount and the amount set forth on the Compounded Amount Table with respect to the next succeeding Compounding Date that the number of days (based on 30-day months) from such last preceding Compounding Date to the date for which such determination is being calculated bears to the total number of days (based on 30-day months) from such last preceding Compounding Date to the next succeeding Compounding Date.

SECTION 3. RIGHT OF OPTIONAL REDEMPTION. The Board reserves the right to redeem prior to their stated maturities the Bonds, in whole or in part, in principal amounts or Maturity Amounts of \$5,000 or any integral multiple thereof at the redemption prices, to the extent, on the dates, and in the manner described in the Award Certificate.

SECTION 4. CHARACTERISTICS OF THE BONDS.

(a) Paying Agent/Registrar; Registration, Transfer, and Exchange; Authentication. The Board shall keep or cause to be kept at a designated corporate trust office of the Paying Agent/Registrar books or records for the registration and transfer of the Bonds (the "Registration Books"), and the Board hereby appoints the Paying Agent/Registrar as its registrar and transfer agent to keep such books or records and make such registrations of transfers and exchanges under such reasonable regulations as the Board and Paying Agent/Registrar may prescribe; and the Paying Agent/Registrar shall make such registrations, transfers, and exchanges as herein provided. Registration of the Bonds shall be accomplished in accordance with the provisions of this Resolution, including Section 14, relating to DTC's Book-Entry-Only System. The Authorized Representative, acting for and on behalf of the Board, is hereby authorized to solicit bids for and to select an initial Paying Agent/Registrar for the Bonds and to approve, execute and deliver for and on behalf of the Board a Paying Agent/Registrar Agreement (defined herein) to reflect the appointment, responsibilities, and compensation of the Paying Agent/Registrar, such approval to be conclusively evidenced by the Authorized Representative's execution thereof. The Paying Agent/Registrar shall obtain and record in the Registration Books the address of the Registered Owner to which payments with respect to the Bonds shall be mailed, as herein provided; but it shall be the duty of each Registered Owner to notify the Paying Agent/Registrar in writing of the address to which payments shall be mailed, and such interest payments shall not be mailed unless such notice has been given. To the extent possible and under reasonable circumstances, all transfers of Bonds shall be made within three Business Days after request and presentation thereof.

The Board shall have the right to inspect the Registration Books during the Paying Agent/Registrar's regular business hours, but otherwise the Paying Agent/Registrar shall keep the Registration Books confidential and, unless otherwise required by law, shall not permit their inspection by any other entity. The Paying Agent/Registrar's standard or customary fees and charges for making such registration, transfer, exchange and delivery of a substitute Bond or Bonds shall be paid as provided in the FORM OF BONDS set forth in this Resolution. Registration of assignments, transfers, and exchanges of Bonds shall be made in the manner provided and with the effect stated in the FORM OF BONDS set forth in this Resolution. Each substitute Bond shall bear a letter and/or number to distinguish it from each other Bond.

Except as provided in subsection (c) below, an authorized representative of the Paying Agent/Registrar shall, before the delivery of any such Bond, date and manually sign the Paying Agent/Registrar's Authentication Certificate, and no such Bond shall be deemed to be issued or outstanding unless such Authentication Certificate is so executed. The Paying Agent/Registrar promptly shall cancel all paid Bonds and Bonds surrendered for transfer and exchange. No additional action need be taken by the Board or any other body or person so as to accomplish the foregoing transfer and exchange of any Bond or portion thereof, and the Paying Agent/Registrar shall provide for the printing, execution, and delivery of the substitute Bonds. Pursuant to Chapter 1201, Texas Government Code, as amended, the duty of transfer and exchange of Bonds as aforesaid is hereby imposed upon the Paying Agent/Registrar, and upon the execution of said certificate, the transferred and exchanged Bond shall be valid, incontestable, and enforceable in the same manner and with the same effect as the Initial Bond.

(b) Payment of Bonds and Interest. The Board hereby further appoints the Paying Agent/Registrar to act as the paying agent for paying the principal and Maturity Amount of and interest on the Bonds, all as provided in this Resolution. The Paying Agent/Registrar shall keep proper records of all payments made by the Board and the Paying Agent/Registrar with respect to the Bonds.

(c) In General. The Bonds (i) shall be issued in fully registered form, without interest coupons, with the principal of and interest on or Maturity Amount of such Bonds to be payable only to the Registered Owners thereof; (ii) may and shall be prepaid or redeemed prior to the respective scheduled maturity dates; (iii) may be transferred and assigned; (iv) may be exchanged for other Bonds; (v) shall have the characteristics; (vi) shall be signed, sealed, executed, and authenticated; and (vii) shall be administered, and the Paying Agent/Registrar and the Board shall have certain duties and responsibilities with respect to the Bonds, all as provided, and in the manner and to the effect as required or indicated, in the FORM OF BONDS set forth in this Resolution and in the Award Certificate. The Initial Bond shall be delivered to the Initial Purchaser and is not required to be, and shall not be, authenticated by the Paying Agent/Registrar, but on each Bond issued in exchange for the Initial Bond or any Bond or Bonds issued under this Resolution the Paying Agent/Registrar shall execute the Paying Agent/Registrar's Authentication Certificate, in the form set forth in the FORM OF BONDS set forth in this Resolution.

SECTION 5. FORMS. The form of all Bonds, including the form of Paying Agent/Registrar's Authentication Certificate, the form of Assignment, and the form of Registration Certificate of the Comptroller of Public Accounts, to accompany the Initial Bond on the initial delivery thereof shall be, respectively, substantially as provided in Exhibit A hereto, with such

appropriate variations, omissions, or insertions as are permitted or required by this Resolution and the Award Certificate.

SECTION 6. DEFINITIONS. In addition to terms defined elsewhere in this Resolution, as used in this Resolution, the following terms shall have the meanings set forth below, unless expressly provided otherwise herein or unless the context shall indicate a contrary meaning or intent:

"Additional Parity Obligations" means the additional obligations of the Board permitted to be issued pursuant to Section 12 of this Resolution or pursuant to the Parity Bond Resolutions, such obligations to be payable from and secured by a first lien on and pledge of the Available University Fund Share on a parity with and of equal dignity to the Outstanding Parity Bonds and the Bonds.

"Applicable Law" has the meaning ascribed thereto in the recitals of this Resolution.

"Attorney General" means the Attorney General of the State of Texas.

"Authorized Denominations" means, except as otherwise provided in the Award Certificate, \$5,000 in principal amount or any integral multiple thereof with respect to Current Interest Bonds and \$5,000 in Maturity Amount or any integral multiple thereof with respect to Capital Appreciation Bonds.

"Authorized Representative" means one or more of the following officers or employees of the System, to-wit: the Chancellor, the Deputy Chancellor and Chief Financial Officer, the Chief Investment Officer and Treasurer, and the Deputy Chief Investment Officer, or in the event of a vacancy in any such position, the person duly authorized to act in such capacity pending the appointment of a successor to such position, or such other officer or employee of the System authorized by the Board to act as an Authorized Representative.

"Available University Fund" means the fund by that name specified in the Constitutional Provision, which fund consists of the distributions made to it from the total return on all investment assets of the Permanent University Fund, including the net income attributable to the surface of Permanent University Fund land, as determined by the Board of Regents of The University of Texas System pursuant to the Constitutional Provision.

"Available University Fund Share" means the System's one-third interest in the Available University Fund as apportioned and provided in the Constitutional Provision.

"Award Certificate" means the certificate to be signed and delivered pursuant to Section 2(b) of this Resolution in connection with each Series of Bonds which establishes the terms of the Bonds.

"Board of Regents" or "Board" means the Board of Regents of the System.

"Bond" or "Bonds" mean one or more, as the case may be, of the Bonds authorized to be issued by this Resolution.

"Bond Counsel" means Winstead PC, or such other nationally-recognized firm designated by the Board as Bond Counsel for purposes of this Resolution.

"Bond Counsel Opinion" means, with respect to any action the occurrence of which requires such an opinion relating to the Bonds, an unqualified opinion of Bond Counsel to the effect that such action is permitted under State law and this Resolution and, with respect to Tax-Exempt Bonds, will not adversely affect the exclusion from gross income for federal income tax purposes of interest on such Tax-Exempt Bonds (subject to the inclusion of any exceptions contained in the opinion delivered upon original issuance of the Tax-Exempt Bonds).

"Bond Purchase Contract" means the Board's agreement with a senior managing underwriter providing for the sale of a Series of Bonds on a negotiated basis as authorized by Section 20 hereof; provided that two or more Series of Bonds may be sold to the same senior managing underwriter pursuant to the terms of a single Bond Purchase Contract.

"Bond Year" means the period beginning on July 2 of any calendar year and continuing through July 1 of the following calendar year.

"Business Day" means any day other than a Saturday, Sunday, or legal holiday, or a day on which banking institutions in either the State of New York or the State of Texas are authorized by law or executive order to close.

"Capital Appreciation Bonds" means Bonds on which no interest is paid prior to maturity, maturing variously in each of the years and in the Maturity Amounts as set forth in the Award Certificate.

"Code" means the Internal Revenue Code of 1986, as amended, and, with respect to a specific section thereof, such reference shall be deemed to include (a) the Regulations promulgated under such section, (b) any successor provision of similar import hereafter enacted, (c) any corresponding provision of any subsequent Internal Revenue Code, and (d) the Regulations promulgated under the provisions described in (b) and (c).

"Commercial Paper Notes" means commercial paper notes of the Board issued as Subordinate Lien Obligations pursuant to the Board's resolution adopted on September 26, 2008, as amended on February 4, 2011.

"Compounded Amount" means, with respect to a Capital Appreciation Bond, as of any particular date of calculation, the original principal amount thereof, plus all interest accrued and compounded to the particular date of calculation, as determined in accordance with Section 2(c) of this Resolution and the Compounded Amount Table relating to such Bonds.

"Compounded Amount Table" means, with respect to the Capital Appreciation Bonds, the Compounded Amount Table as defined in Section 2(c) of this Resolution.

"Compounding Dates" means Compounding Dates as defined in Section 2(c) of this Resolution.

"Comptroller" means the Comptroller of Public Accounts of the State of Texas or any successor thereto.

"Constitutional Provision" means Section 18 of Article VII of the Constitution of the State, as amended and in effect on the date hereof, and any amendment thereto or any other provision or amendment to the Constitution of the State relating to the Permanent University Fund hereafter approved by the voters of the State.

"Current Interest Bonds" means Bonds paying current interest and maturing in each of the years and in the aggregate principal amounts set forth in the Award Certificate.

"Definitive Bonds" means the Bonds issued in exchange for the Initial Bond.

"DTC" means The Depository Trust Company, New York, New York, and its successors and assigns.

"DTC Participant" means securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations on whose behalf DTC was created to hold securities to facilitate the clearance and settlement of securities transactions among DTC Participants.

"Eligible Project" means the acquisition of land either with or without permanent improvements, the construction and equipping of buildings or other permanent improvements, major repair and rehabilitation of buildings and other permanent improvements, the acquisition of capital equipment and library books and library materials. The term "Eligible Project" does not include the constructing, equipping, repairing, or rehabilitating of buildings or other permanent improvements that are to be used for student housing, intercollegiate athletics, or auxiliary enterprises.

"Escrow Agent" means the Escrow Agent set forth in the Award Certificate, if any, and any successor thereto.

"Escrow Agreement" means an agreement between the Board and the Escrow Agent as authorized by Section 23 hereof, as each such agreement may be amended from time to time in accordance with the terms thereof.

"Financial Obligation" has the meaning given in Section 18(b) hereof.

"Fiscal Year" means the 12-month operational period of both the System and the Permanent University Fund, commencing on September 1 of each year and ending on the following August 31.

"Government Obligations" means (i) direct noncallable obligations of the United States of America, including obligations that are unconditionally guaranteed by the United States of America (including Interest Strips of the Resolution Funding Corporation), or (ii) noncallable obligations of an agency or instrumentality of the United States of America, including obligations that are unconditionally guaranteed or insured by the agency or instrumentality and that, on the date the Board adopts or approves proceedings authorizing the issuance of Refunding Bonds or otherwise provides for the funding of an escrow to effect the defeasance of the Bonds, are rated as

to investment quality by a nationally recognized investment rating firm not less than "AAA" or its equivalent. The foregoing notwithstanding, the Authorized Representative may elect in the Award Certificate to modify the definition of "Government Obligations" by eliminating any securities or obligations set forth in the preceding sentence upon determining that it is in the best interests of the Board to do so.

"Initial Bond" means the Bond of a Series initially delivered hereunder and upon which the registration certificate, manually executed by or on behalf of the Comptroller of Public Accounts of the State of Texas, has been placed.

"Initial Purchaser" has the meaning given in Section 2 hereof.

"Issuance Date" means the date of delivery of each Series of Bonds to the Initial Purchasers thereof.

"Maturity" means the date on which the principal of a Bond becomes due and payable as therein and herein provided, whether at Stated Maturity, by redemption, or otherwise.

"Maturity Amount" means the Compounded Amount of a Capital Appreciation Bond due on its Stated Maturity.

"MSRB" means the Municipal Securities Rulemaking Board.

"Nationally-Recognized Rating Agency" means any nationally-recognized securities rating agency that provides a rating on the Bonds at the request of the Board.

"Outstanding Parity Bonds" has the meaning ascribed thereto in the recitals of this Resolution.

"Parity Bond Resolutions" has the meaning ascribed thereto in the recitals of this Resolution.

"Parity Obligations" means the Outstanding Parity Bonds, the Bonds, and any Additional Parity Obligations outstanding on the date of adoption of this Resolution or thereafter issued.

"Paying Agent/Registrar," "Paying Agent," or "Registrar" means an agent appointed pursuant to Section 2(b) of this Resolution, or any successor thereto.

"Paying Agent/Registrar Agreement" means a Paying/Agent Registrar Agreement executed by the Board and a Paying Agent/Registrar pursuant to Section 4(a) of this Resolution, substantially in the form previously approved by the Board, as such agreement may be amended from time to time in accordance with the terms thereof.

"Permanent University Fund" means the Permanent University Fund as created, established, implemented, and administered pursuant to Article VII, Sections 10, 11, 11a, 15, and 18 of the Texas Constitution, as currently or hereafter amended, and further implemented by the provisions of Chapter 66, Texas Education Code, as amended.

"Permanent University Fund Obligations" means, collectively, all bonds or notes of the Board heretofore or hereafter issued and delivered pursuant to the provisions of the Constitutional Provision, payable from and secured by a lien on and pledge of the Available University Fund Share, including, but not limited to, Parity Obligations and Subordinate Lien Obligations.

"Potential Refunded Bonds" means any of the Outstanding Parity Bonds.

"Principal and Interest Requirements" means, with respect to any Fiscal Year, the respective amounts of principal of and interest on all outstanding Permanent University Fund Obligations scheduled to be paid in such Fiscal Year from the Available University Fund Share. If the rate or rates of interest to be borne by any Additional Parity Obligations or Subordinate Lien Obligations is not fixed, but is variable or adjustable by any formula, agreement, or otherwise, and therefore cannot be calculated as actually being scheduled to be paid in a particular amount for any particular period, then for the purposes of the previous sentence, such Additional Parity Obligations or Subordinate Lien Obligations shall be deemed to bear interest at all times to maturity or due date at the lesser of (i) the maximum rate then permitted by law or (ii) the maximum rate specified in such Additional Parity Obligations or Subordinate Lien Obligations.

"Project Costs" means all costs and expenses incurred in relation to Eligible Projects, including, without limitation, design, planning, engineering, and legal costs; acquisition costs of land, interests in land, right-of-way and easements; construction costs; costs of machinery, equipment, and other capital assets incident and related to the operation, maintenance, and administration of an Eligible Project; and financing costs, including interest during construction and thereafter; underwriters' discount and/or fees; legal, financial, and other professional services; and reimbursements for such Project Costs attributable to an Eligible Project incurred prior to issuance and delivery of the Bonds.

"Refunded Bonds" means the Potential Refunded Bonds to be refunded by a Series of Bonds as set forth in the Award Certificate.

"Refunded Notes" means the Commercial Paper Notes to be refunded by a Series of Bonds as set forth in the Award Certificate.

"Refunded Obligations" means, collectively, the Refunded Notes, if any, and the Refunded Bonds, if any, refunded by a Series.

"Refunding Bonds" means any Series of Bonds issued for the purpose of refunding any of the Refunded Obligations and paying the costs of issuance of such Bonds thereby constituting "refunding bonds" for purposes of subsection (g) of the Constitutional Provision.

"Registered Owner" has the meaning ascribed thereto in Section 2 of this Resolution.

"Regulations" means the applicable proposed, temporary or final Treasury Regulations promulgated under the Code or, to the extent applicable to the Code, under the Internal Revenue Code of 1954, as such regulations may be amended or supplemented from time to time.

"Rule" means SEC Rule 15c2-12 promulgated by the SEC, as amended from time to time.

"SEC" means the United States Securities and Exchange Commission.

"Series" means any designated series of Bonds issued pursuant to this Resolution.

"State" means the State of Texas.

"Stated Maturity" with respect to any Bond, means the scheduled maturity or mandatory sinking fund redemption date of the Bond.

"Subordinate Lien Obligations" means those bonds, notes, or other obligations of the Board, including the Commercial Paper Notes, payable from, and secured by a lien on and a pledge of, the Available University Fund Share that is junior and subordinate to the pledge of and lien on the Available University Fund Share that secures the Parity Obligations.

"System" means The Texas A&M University System.

"Tax-Exempt Bonds" means a series of Bonds, the interest on which is excludable from gross income from federal income tax purposes, as determined and set forth in the Award Certificate therefor.

"Taxable Bonds" means a series of Bonds, the interest on which is not excludable from gross income for federal income tax purposes, as determined and set forth in the Award Certificate therefor.

"UT Board" means the Board of Regents of The University of Texas System.

SECTION 7. PLEDGE. Pursuant to the Constitutional Provision, the Bonds and any Additional Parity Obligations hereafter issued, and the interest thereon, shall be and are hereby equally and ratably secured, together with the Outstanding Parity Bonds, by and payable from a first lien on and pledge of the Available University Fund Share.

SECTION 8. PERFECTION OF SECURITY. Chapter 1208, Texas Government Code, applies to the issuance of the Parity Obligations and the pledge of the Available University Fund Share made in Section 7 of this Resolution, and such pledge is, therefore, valid, effective, and perfected. Should State law be amended at any time while the Bonds are outstanding and unpaid, the result of such amendment being that the pledge of the Available University Fund Share is to be subject to the filing requirements of Chapter 9, Texas Business & Commerce Code, in order to preserve to the Registered Owners a security interest in such pledge, the Board agrees to take such measures as it determines are reasonable and necessary to enable a filing of a security interest in said pledge to occur.

SECTION 9. PAYMENT OF BONDS AND ADDITIONAL PARITY OBLIGATIONS.

(a) Payment of the Bonds. The Comptroller previously has established and shall maintain in the State Treasury a fund known as the "Board of Regents of The Texas A&M University System Permanent University Fund Bonds Interest and Sinking Fund" (the "Interest and Sinking Fund"). The Board and the officers of the System shall cause the Comptroller to (i)

transfer to the Interest and Sinking Fund, out of the fund in the State Treasury to which is deposited the Available University Fund Share, such fund being designated the "The Texas A&M University System Available University Fund", on or before each date upon which the principal of, premium, if any, or interest on any Parity Obligations is due and payable, whether by reason of maturity, mandatory redemption, or optional redemption prior to maturity and (ii) withdraw from the Interest and Sinking Fund and deposit with the Paying Agent/Registrar, on or before each such date, the amounts of interest or principal, premium, if any, and interest which will come due on the Parity Obligations on each such date, and in such manner that such amounts, in immediately available funds, will be on deposit with the Paying Agent/Registrar at least by each such date.

(b) Payment of Additional Parity Obligations. When Additional Parity Obligations are issued pursuant to the provisions of this Resolution, the Board, the officers of the System, and the Comptroller shall follow substantially the same procedures as provided above in connection with paying the principal of and interest on such Additional Parity Obligations when due; provided, however, that other and different banks or places of payment (paying agents) and/or paying agent/registrar, dates and methods of payment, and other procedures not in conflict with this Resolution may be named and provided for in connection with each issue of Additional Parity Obligations. In the event that any such Additional Parity Obligations are made redeemable prior to maturity, the resolution or resolutions authorizing the issuance of such Additional Parity Obligations shall prescribe the appropriate procedures for redeeming the same.

SECTION 10. DISPOSITION OF FUNDS. After provision has been made for the payment of the principal of, premium, if any, and interest on the Parity Obligations the balance of the Available University Fund Share each year shall be made available to the Board for payment of any Subordinate Lien Obligations and, thereafter, shall be available to the Board in the manner and to the extent provided by law and by regulations of the Board to be used by the Board as it may lawfully direct.

SECTION 11. INVESTMENTS. Subject to the requirements of any Parity Bond Resolution and except as may be otherwise provided herein, (i) money in any account or fund established or affirmed pursuant to this Resolution may be invested at the direction of an Authorized Representative in the manner prescribed by law and in accordance with the written policies adopted by the Board, and (ii) the interest and income derived from such investments shall be credited to the account or fund from which the deposit or investment was made and shall be used only for the purpose or purposes for which such account or fund is required or permitted to be used.

SECTION 12. ADDITIONAL OBLIGATIONS.

(a) Additional Parity Obligations. The Board reserves the right and shall have full power at any time and from time to time, to authorize, issue, and deliver Additional Parity Obligations, in as many separate installments or series as deemed advisable by the Board but only for the purpose and to the extent provided in the Constitutional Provision, or in any amendment hereafter made to the Constitutional Provision, or for refunding purposes as provided by Applicable Law. Such Additional Parity Obligations when issued, and the interest thereon, shall be equally and ratably secured by and payable from a first lien on and pledge of the Available University Fund Share, in the same manner and to the same extent as are the Parity Obligations,

and shall be on a parity and in all respects of equal dignity. It is further covenanted that no installment or series of Additional Parity Obligations shall be issued and delivered unless the Authorized Representative, or some other financial officer of the System designated by the Board, executes a certificate to the effect that (i) for the Fiscal Year immediately preceding the date of said certificate, the amount of the Available University Fund Share was at least 1.5 times the average annual Principal and Interest Requirements of the installment or series of Additional Parity Obligations then proposed to be issued and the Parity Obligations which are then and will be outstanding after the issuance and delivery of said proposed installment or series; provided, however, that the certification required by this clause (i) shall only remain in effect so long as any Parity Obligation that was outstanding on August 3, 2012, remains outstanding; and (ii) the total principal amount of all Permanent University Fund Obligations that will be outstanding after the issuance and delivery of the installment or series of Additional Parity Obligations then proposed to be issued will not exceed 10% of the cost value of investments and other assets of the Permanent University Fund (exclusive of real estate) at the time the proposed series or installment of Additional Parity Obligations is issued.

(b) Subordinate Lien Obligations. The Board may, at any time and from time to time, for any lawful purpose permitted pursuant to the terms of the Constitutional Provision, issue Subordinate Lien Obligations, the principal of and redemption premium, if any, and interest on which are payable from and secured by a pledge of and lien on the Available University Fund Share junior and subordinate to the lien and pledge created hereby for the security of the Parity Obligations; provided, however, that any such pledge and lien securing such Subordinate Lien Obligations shall be, and shall be expressed to be, subordinate in all respects to the pledge of and lien on the Available University Fund Share pledged as security for the Parity Obligations.

SECTION 13. GENERAL COVENANTS. The Board covenants and agrees with the Registered Owners as follows:

(a) It is recognized that the UT Board is the legal custodian of the Permanent University Fund, having sole power to administer and invest the Permanent University Fund in accordance with Applicable Law, provided that the Constitutional Provision affirmatively appropriates out of the Available University Fund Share an annual amount sufficient to pay the principal and interest on the Permanent University Fund Obligations. Therefore, while the Parity Obligations or the Subordinate Lien Obligations are outstanding and unpaid, the Board covenants to use its best efforts to cause the Permanent University Fund to be administered, invested, and the income therefrom to be distributed, all as required by law and consistent with the Parity Bond Resolutions and this Resolution.

(b) The Board will duly and punctually pay or cause to be paid the principal of every Parity Obligation and all Subordinate Lien Obligations, while outstanding, and the interest thereon, from the sources, on the days, at the places, and in the manner mentioned and provided in such obligations, according to the true intent and meaning thereof, and it will duly cause to be called for redemption prior to maturity, and will cause to be redeemed prior to maturity, all Parity Obligations and Subordinate Lien Obligations which, by their terms, are mandatorily required to be redeemed prior to maturity, when and as so required, and it will faithfully do and perform and at all times fully observe all covenants, undertakings, and provisions contained in this Resolution and in the aforesaid obligations.

(c) Except for the benefit of the Parity Obligations, and the interest thereon, the Board will not at any time create or allow to accrue or exist any lien or charge upon the Interest and Sinking Fund or the Available University Fund Share, unless such lien or charge is made junior and subordinate in all respects to the liens, pledges, and covenants in connection with the Parity Obligations, but the right to issue Subordinate Lien Obligations payable from the Available University Fund Share, as specified in Section 12(b) of this Resolution, is specifically reserved by the Board. The lien created by this Resolution will not be impaired in any manner as a result of any action or non-action on the part of the Board or officers of the System.

(d) Proper books of records and accounts will be kept in which true, full, and correct entries will be made of all income, expenses, and transactions of and in relation to the Permanent University Fund and each and every part thereof in accordance with accepted accounting practices, and as soon after the close of each Fiscal Year as reasonably may be done, the Board will furnish to all bondholders and Registered Owners who may so request, such audits and reports by the State Auditor of the State for the preceding Fiscal Year, concerning the Permanent University Fund, the Available University Fund Share, and the Parity Obligations, as the State Auditor is required by Applicable Law to prepare and distribute.

(e) No portion of the proceeds of the Bonds will be used for the purpose of constructing, equipping, repairing, or rehabilitating buildings or other permanent improvements that are to be used for student housing, intercollegiate athletics, or auxiliary enterprises.

(f) The Board will (i) pay the standard or customary fees and charges of the Paying Agent/Registrar for its services with respect to the payment of the principal of and interest on the Bonds, when due, and (ii) pay the fees and charges of the Paying Agent/Registrar for services with respect to (A) the transfer of registration of the Bonds, and (B) solely to the extent provided in this Resolution, the exchange of the Bonds.

(g) At all times while the Bonds are outstanding, the Board will provide a competent and legally qualified bank, trust company, financial institution, or other agency to act as and perform the services of Paying Agent/Registrar for the Bonds under this Resolution. The Paying Agent/Registrar will be one entity. The Board reserves the right to, and may at its option, change the Paying Agent/Registrar upon not less than 60 days' written notice to the Paying Agent/Registrar, to be effective not later than 60 days prior to the next principal or interest payment date after such notice. In the event that the entity at any time acting as Paying Agent/Registrar (or its successor by merger, acquisition, or other method) should resign or otherwise cease to act as such, the Board covenants that it will promptly appoint a competent and legally qualified bank, trust company, financial institution, or other agency to act as Paying Agent/Registrar under this Resolution. Upon any change in the Paying Agent/Registrar, the previous Paying Agent/Registrar promptly shall transfer and deliver the Registration Books (or a copy thereof), along with all other pertinent books and records relating to the Bonds, to the new Paying Agent/Registrar designated and appointed by the Board. Upon any change in the Paying Agent/Registrar, the Board promptly will cause a written notice thereof to be sent by the new Paying Agent/Registrar to each Registered Owner, by United States mail, first-class postage prepaid, which notice also shall give the address of the new Paying Agent/Registrar. By accepting the position and performing as such, each Paying Agent/Registrar shall be deemed to have agreed to the provisions of this Resolution, and a certified copy of this Resolution shall be delivered to each Paying Agent/Registrar.

SECTION 14. BOOK-ENTRY-ONLY SYSTEM. It is intended that the Bonds initially be registered so as to participate in a securities depository system (the "DTC System") with DTC, as set forth herein. The Definitive Bonds shall be issued in the form of a separate single definitive Bond for each maturity. Upon issuance, the ownership of each such Bond shall be registered in the name of Cede & Co., as the nominee of DTC, and all of the outstanding Bonds shall be registered in the name of Cede & Co., as the nominee of DTC. The Board and the Paying Agent/Registrar are authorized to execute, deliver, and take the actions set forth in such letters to or agreements with DTC as shall be necessary to effectuate the DTC System, including a "Letter of Representations" (the "Representation Letter").

With respect to the Bonds registered in the name of Cede & Co., as nominee of DTC, the Board and the Paying Agent/Registrar shall have no responsibility or obligation to any broker-dealer, bank, or other financial institution for which DTC holds the Bonds from time to time as securities depository (a "Depository Participant") or to any person on behalf of whom such a Depository Participant holds an interest in the Bonds (an "Indirect Participant"). Without limiting the immediately preceding sentence, the Board and the Paying Agent/Registrar shall have no responsibility or obligation with respect to (i) the accuracy of the records of DTC, Cede & Co., or any Depository Participant with respect to any ownership interest in the Bonds, or (ii) the delivery to any Depository Participant or any Indirect Participant or any other person, other than a Registered Owner of a Bond, of any amount with respect to principal of or interest on the Bonds. While in the DTC System, no person other than Cede & Co., or any successor thereto, as nominee for DTC, shall receive a Bond evidencing the obligation of the Board to make payments of principal and interest pursuant to this Resolution. Upon delivery by DTC to the Paying Agent/Registrar of written notice to the effect that DTC has determined to substitute a new nominee in place of Cede & Co., and subject to the provisions in this Resolution with respect to interest checks or drafts being mailed to the holder, the words "Cede & Co." in this Resolution shall refer to such new nominee of DTC.

In the event that (a) the Board determines that DTC is incapable of discharging its responsibilities described herein and in the Representation Letter, (b) the Representation Letter shall be terminated for any reason, or (c) DTC or the Board determines that it is in the best interest of the Registered Owners that they be able to obtain certificated Bonds, the Board shall notify the Paying Agent/Registrar, DTC, and Depository Participants of the availability within a reasonable period of time through DTC of certificated Bonds, and the Bonds shall no longer be restricted to being registered in the name of Cede & Co., as nominee of DTC. At that time, the Board may determine that the Bonds shall be registered in the name of and deposited with a successor depository operating a securities depository system, as may be acceptable to the Board, or such depository's agent or designee, and if the Board and the Paying Agent/Registrar do not select such alternate securities depository system, then the Bonds may be registered in whatever names the Registered Owners transferring or exchanging the Bonds shall designate, in accordance with the provisions hereof.

Notwithstanding any other provision of this Resolution to the contrary, so long as any Bond is registered in the name of Cede & Co., as nominee of DTC, all payments with respect to principal of and interest on such Bond and all notices with respect to such Bond shall be made and given, respectively, in the manner provided in the Representation Letter.

SECTION 15. AMENDMENT OF RESOLUTION.

(a) The owners of the Parity Obligations comprising 51% or more in principal amount of the aggregate principal amount of then outstanding Parity Obligations shall have the right, from time to time, to approve any amendment to any resolution authorizing the issuance of Parity Obligations which may be deemed necessary or desirable by the Board; provided, however, that nothing herein contained shall permit or be construed to permit, without the approval of the owners of all of the outstanding Parity Obligations, the amendment of the terms and conditions in said resolutions or in the Parity Obligations so as to (i) make any change in the maturity of the outstanding Parity Obligations; (ii) reduce the rate of interest borne by any of the outstanding Parity Obligations; (iii) reduce the amount of the principal payable on the outstanding Parity Obligations; (iv) modify the terms of payment of principal of or interest on the outstanding Parity Obligations, or impose any conditions with respect to such payment; (v) affect the rights of the owners of less than all of the Parity Obligations then outstanding; or (vi) change the minimum percentage of the principal amount of Parity Obligations necessary for consent to such amendment.

(b) If at any time the Board shall desire to amend a resolution under this Section, the Board shall cause notice of the proposed amendment to be published in a financial newspaper or journal published in New York, New York, once during each calendar week for at least two successive calendar weeks. Such notice shall briefly set forth the nature of the proposed amendment and shall state that a copy thereof is on file at the principal office of each Paying Agent/Registrar for the Parity Obligations for inspection by all owners of Parity Obligations. Such publication is not required, however, if written notice is given to each owner of Parity Obligations.

(c) Whenever at any time not less than 30 days, and within one year, from the date of the first publication of said notice or other service of written notice of the proposed amendment, the Board shall receive an instrument or instruments executed by the owners of at least 51% in aggregate principal amount of all Parity Obligations then outstanding, which instrument or instruments shall refer to the proposed amendment described in said notice and which specifically consent to and approve such amendment in substantially the form of the copy thereof on file as aforesaid, the Board may adopt the amendatory resolution in substantially the same form.

(d) Any consent given by the owner of a Parity Obligation pursuant to the provisions of this Section shall be irrevocable for a period of six months from the date of the first publication or other service of the notice provided for in this Section, and shall be conclusive and binding upon all future owners of the same Parity Obligations during such period. Such consent may be revoked at any time after six months from the date of the first publication of such notice by the owner who gave such consent, or by a successor in title, by filing notice thereof with the Paying Agent/Registrar for such Parity Obligations and the Board, but such revocation shall not be effective if the owners of 51% in aggregate principal amount of the then-outstanding Parity Obligations as in this Section defined have, prior to the attempted revocation, consented to and approved the amendment.

(e) Notwithstanding the provisions of Subsections (a)-(d) of this Section and subject to the requirements of the resolutions authorizing the Outstanding Parity Bonds, this Resolution and the rights and obligations of the Board and of the owners of the Bonds may, to the extent permitted by law, be modified or amended at any time by a supplemental resolution, without notice to or the

consent of any owners of the Bonds, to cure any ambiguity, or to cure or correct any defective provision contained in this Resolution, upon receipt by the Board of an approving opinion of Bond Counsel that the same is needed for such purpose and will more clearly express the intent of this Resolution.

(f) Upon the adoption of any amendatory resolution adopted by the Board pursuant to the provisions of this Section, the resolution being amended shall be deemed to be amended in accordance with the amendatory resolution, and the respective rights, duties, and obligations of the Board and all the owners of then-outstanding Parity Obligations and all future Parity Obligations shall thereafter be determined, exercised, and enforced thereunder, subject in all respects to such amendment.

SECTION 16. DAMAGED, MUTILATED, LOST, STOLEN, OR DESTROYED BONDS.

(a) Replacement Bonds. In the event any outstanding Bond is damaged, mutilated, lost, stolen, or destroyed, the Paying Agent/Registrar shall cause to be printed, executed, and delivered a new Bond of the same principal amount, Maturity Amount, maturity, and interest rate, as the damaged, mutilated, lost, stolen, or destroyed Bond, in replacement for such Bond in the manner hereinafter provided.

(b) Application for Replacement Bonds. Application for replacement of damaged, mutilated, lost, stolen, or destroyed Bonds shall be made to the Paying Agent/Registrar. In every case of loss, theft, or destruction of a Bond, the applicant for a replacement bond shall furnish to the Board and to the Paying Agent/Registrar such security or indemnity as may be required by them to save each of them harmless from any loss or damage with respect thereto. Also, in every case of loss, theft, or destruction of a Bond, the applicant shall furnish to the Board and to the Paying Agent/Registrar evidence to their satisfaction of the loss, theft, or destruction of such Bond, as the case may be. In every case of damage or mutilation of a Bond, the applicant shall surrender to the Paying Agent/Registrar for cancellation the Bond so damaged or mutilated.

(c) Payment in Lieu of Replacement. Notwithstanding the foregoing provisions of this Section, in the event any such Bond shall have matured, and no default has occurred which is then continuing in the payment of the principal of or interest on the Bond, the Board may authorize the payment of the same (without surrender thereof except in the case of a damaged or mutilated Bond) instead of issuing a replacement Bond, provided security or indemnity is furnished as provided above in this Section.

(d) Charge for Issuing Replacement Bonds. Prior to the issuance of any replacement Bond, the Paying Agent/Registrar shall charge the owner of such Bond with all legal, printing, and other expenses in connection therewith. Every replacement Bond issued pursuant to the provisions of this Section by virtue of the fact that any Bond is lost, stolen, or destroyed shall constitute a contractual obligation of the Board whether or not the lost, stolen, or destroyed Bond shall be found at any time, or be enforceable by anyone, and shall be entitled to all the benefits of this Resolution equally and proportionately with any and all other Bonds duly issued under this Resolution.

(e) Authority for Issuing Replacement Bonds. In accordance with Chapter 1201, Texas Government Code, as amended, this Section shall constitute authority for the issuance of any such replacement Bond without necessity of further action by the governing body of the Board or any other body or person, and the duty of the replacement of such Bonds is hereby authorized and imposed upon the Paying Agent/Registrar, and the Paying Agent/Registrar shall authenticate and deliver such Bonds in the form and manner and with the effect, as provided in Section 4(a) of this Resolution, for Bonds issued in exchange for other Bonds.

SECTION 17. DEFEASANCE OF BONDS.

(a) Any Bond and the interest thereon shall be deemed to be paid, retired and no longer outstanding (a "Defeased Bond") within the meaning of this Resolution, except to the extent provided in subsections (c) and (e) of this Section, when payment of the principal of such Bond, plus interest thereon, with respect to Current Interest Bonds, and/or the Maturity Amount with respect to Capital Appreciation Bonds, to the due date or dates (whether such due date or dates be by reason of maturity, upon redemption, or otherwise) either (i) shall have been made or caused to be made in accordance with the terms thereof (including the giving of any required notice of redemption or the establishment of irrevocable provisions for the giving of such notice) or (ii) shall have been provided for on or before such due date by irrevocably depositing with or making available to the Paying Agent/Registrar or an eligible trust company or commercial bank for such payment (1) lawful money of the United States of America sufficient to make such payment, (2) Government Obligations that mature as to principal and interest in such amounts and at such times as will ensure the availability, without reinvestment, of sufficient money to provide for such payment and when proper arrangements have been made by the Board with the Paying Agent/Registrar or an eligible trust company or commercial bank for the payment of its services until all Defeased Bonds shall have become due and payable or (3) any combination of (1) and (2). At such time as a Bond shall be deemed to be a Defeased Bond hereunder, as aforesaid, such Bond and the interest thereon shall no longer be secured by, payable from, or entitled to the benefits of, the revenues herein pledged as provided in this Resolution, and such principal and interest shall be payable solely from such money or Government Obligations.

(b) The deposit under clause (ii) of subsection (a) shall be deemed a payment of a Bond as aforesaid when proper notice of redemption of such Bonds shall have been given or upon the establishment of irrevocable provisions for the giving of such notice, in accordance with this Resolution. Any money so deposited with the Paying Agent/Registrar or an eligible trust company or commercial bank as provided in this Section may at the discretion of the Board also be invested in Government Obligations, maturing in the amounts and at the times as hereinbefore set forth, and all income from all Government Obligations in possession of the Paying Agent/Registrar or an eligible trust company or commercial bank pursuant to this Section which is not required for the payment of such Bond and premium, if any, and interest thereon with respect to which such money has been so deposited, shall be remitted to the Board.

(c) Notwithstanding any provision of any other Section of this Resolution which may be contrary to the provisions of this Section, all money or Government Obligations set aside and held in trust pursuant to the provisions of this Section for the payment of principal of the Bonds and premium, if any, and interest thereon, shall be applied to and used solely for the payment of the particular Bonds and premium, if any, and interest thereon, with respect to which such money

or Government Obligations have been so set aside in trust. Until all Defeased Bonds shall have become due and payable, the Paying Agent/Registrar shall perform the services of Paying Agent/Registrar for such Defeased Bonds the same as if they had not been defeased, and the Board shall make proper arrangements to provide and pay for such services as required by this Resolution.

(d) Notwithstanding any other provision of this Resolution to the contrary, if money or Government Obligations have been deposited or set aside with the Paying Agent/Registrar or an eligible trust company or commercial bank pursuant to this Section for the payment of Bonds and such Bonds shall not have in fact been actually paid in full, no amendment of the provisions of this Section shall be made without the consent of the Registered Owner of each Bond affected thereby. Notwithstanding the provisions of this Section to the contrary, any Taxable Bonds issued under this Resolution may be designated by the Authorized Representative in the Award Certificate as not being subject to defeasance if such Authorized Representative determines that such treatment is in the best economic interest of the Board.

(e) Notwithstanding the provisions of subsection (a) of this Section, to the extent that, upon the defeasance of any Defeased Bond to be paid at its maturity, the Board retains the right under State law to later call that Defeased Bond for redemption in accordance with the provisions of this Resolution, the Board may call such Defeased Bond for redemption upon complying with the provisions of State law and upon the satisfaction of the provisions of subsection (a) of this Section with respect to such Defeased Bond as though it was being defeased at the time of the exercise of the option to redeem the Defeased Bond and the effect of the redemption is taken into account in determining the sufficiency of the provisions made for the payment of the Defeased Bond.

SECTION 18. CONTINUING DISCLOSURE.

(a) Annual Reports. The Board shall provide annually to the MSRB, in an electronic format as prescribed by the MSRB, within six months after the end of each Fiscal Year ending after the issuance and sale of each Series of Bonds pursuant to this Resolution, financial information and operating data with respect to the Permanent University Fund as determined by the Authorized Representative at the time the Bonds are sold. The Award Certificate shall specify such financial information and operating data. Any financial statements with respect to the Permanent University Fund so to be provided shall be (1) prepared on an accrual basis, or such other basis as the UT Board may be required to employ from time to time pursuant to State law or regulation, and (2) audited, if the UT Board commissions an audit of such statements and the audit is completed within the period during which they must be provided. If audited financial statements with respect to the Permanent University Fund are not so provided within the required period, then the Board shall provide unaudited financial statements with respect to the Permanent University Fund for the applicable Fiscal Year to the MSRB, in an electronic format as prescribed by the MSRB, and shall file audited financial statements with respect to the Permanent University Fund when and if such audited financial statements become available. If audited financial statements with respect to the Permanent University Fund are not prepared for any Fiscal Year and audited financial statements are prepared with respect to the State of Texas for such Fiscal Year, the Board shall provide, or cause to be provided, the audited financial statements of the State of Texas for the applicable Fiscal Year to the MSRB, in an electronic format as prescribed by the MSRB, within six months after the end of said Fiscal Year or as soon thereafter as such audited financial

statements become available from the State Auditor of the State of Texas. Any such audited financial statements of the State of Texas so provided shall be prepared in accordance with generally accepted accounting principles for state governments, as such principles may be changed from time to time to comply with State law.

If the UT Board changes the Permanent University Fund's Fiscal Year, the Board will notify the MSRB of the change (and of the date of the new Fiscal Year end) prior to the next date by which the Board otherwise would be required to provide financial information and operating data pursuant to this Section.

The financial information and operating data to be provided pursuant to this subsection (a) may be set forth in full in one or more documents or may be included by specific reference to any document that is available to the public on the MSRB's internet web site or filed with the SEC.

(b) Event Notices. As used in this subsection (b), the term "obligated person" shall mean any person, including the Board, who is either generally or through an enterprise, fund, or account of such person committed by contract or other arrangement to support payment of all or part of the obligations on the Bonds (other than providers of municipal bond insurance, letters of credit, or other liquidity facilities). The Board shall notify the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner not in excess of ten Business Days after the occurrence of the event, of any of the following events with respect to the Bonds: (i) principal and interest payment delinquencies; (ii) non-payment related defaults, if material; (iii) unscheduled draws on debt service reserves reflecting financial difficulties; (iv) unscheduled draws on credit enhancements reflecting financial difficulties; (v) substitution of credit or liquidity providers, or their failure to perform; (vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds; (vii) modifications to rights of holders of the Bonds, if material; (viii) bond calls, if material, and tender offers; (ix) defeasances; (x) release, substitution, or sale of property securing repayment of the Bonds, if material; (xi) rating changes; (xii) bankruptcy, insolvency, receivership or similar event of the obligated person; (xiii) the consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; (xiv) the appointment of a successor or additional trustee or the change of name of a trustee, if material; (xv) incurrence of a Financial Obligation (as defined below) of the Board, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the Board, any of which affect the holders of the outstanding Parity Obligations, if material; and (xvi) default, event of acceleration, termination event, modification of terms or similar events under the terms of a Financial Obligation of the Board, any of which reflect financial difficulties.

For the purposes of the event identified in clause (xii) of the immediately preceding paragraph, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an obligated person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or

governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person. The Board intends the words used in clauses (xv) and (xvi), above, and the definition of "Financial Obligation" in this Section to have the same meanings as when it is used in the Rule, as evidenced by SEC Release NO. 34-83885, dated August 20, 2018.

In addition, the Board shall notify the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner, of any failure by the Board to provide financial information or operating data in accordance with subsection (a) of this Section by the time required.

(c) Identifying Information. All information and notices shall be provided to the MSRB in an electronic format, as prescribed by the MSRB, and all documents provided to the MSRB pursuant to this Section 18 shall be accompanied by identifying information, as prescribed by the MSRB.

(d) Limitations, Disclaimers, and Amendments. The Board shall be obligated to observe and perform the covenants specified in this Section 18 for so long as, but only for so long as, the Board, the Permanent University Fund, or the Available University Fund Share remains an "obligated person" with respect to the Bonds within the meaning of the Rule, except that the Board in any event will give the notice required by Section 4 of this Resolution of any Bond calls and defeasance that cause the Board, the Permanent University Fund, or the Available University Fund Share to no longer be "obligated persons".

The provisions of this Section 18 are for the sole benefit of the holders and beneficial owners of the Bonds, and nothing in this Section 18, express or implied, shall give any benefit or any legal or equitable right, remedy, or claim hereunder to any other person. The Board undertakes to provide only the financial information, operating data, financial statements, and notices which it has expressly agreed to provide pursuant to this Section 18 and does not hereby undertake to provide any other information that may be relevant or material to a complete presentation of the Permanent University Fund's or the Available University Fund Share's financial results, condition, or prospects, or hereby undertake to update any information provided in accordance with this Section 18 or otherwise, except as expressly provided herein. The Board does not make any representation or warranty concerning such information or its usefulness to a decision to invest in or sell Bonds at any future date.

UNDER NO CIRCUMSTANCES SHALL THE BOARD BE LIABLE TO THE HOLDER OR BENEFICIAL OWNER OF ANY BOND OR ANY OTHER PERSON, IN CONTRACT OR TORT, FOR DAMAGES RESULTING IN WHOLE OR IN PART FROM ANY BREACH BY THE BOARD, WHETHER NEGLIGENT OR WITHOUT FAULT ON ITS PART, OF ANY COVENANT SPECIFIED IN THIS SECTION 18, BUT EVERY RIGHT AND REMEDY OF ANY SUCH PERSON, IN CONTRACT OR TORT, FOR OR ON ACCOUNT OF ANY SUCH BREACH SHALL BE LIMITED TO AN ACTION FOR MANDAMUS OR SPECIFIC PERFORMANCE.

No default by the Board in observing or performing its obligations under this Section 18 shall constitute a breach of or default under this Resolution for purposes of any other provision of this Resolution. Should the Rule be amended to obligate the Board to make filings with or provide notices to entities other than the MSRB, the Board hereby agrees to undertake such obligation with respect to the Bonds in accordance with the Rule as amended.

Nothing in this Section 18 is intended or shall act to disclaim, waive, or otherwise limit the duties of the Board under federal and State securities laws.

Except as otherwise authorized by Section 32, the provisions of this Section 18 may be amended by the Board from time to time to adapt to changed circumstances that arise from a change in legal requirements, a change in law, or a change in the identity, nature, status, or type of operations of the Board or the Permanent University Fund, but only if (i) the provisions of this Section 18, as so amended, would have permitted an underwriter to purchase or sell Bonds in the primary offering of the Bonds in compliance with the Rule, taking into account any amendments or interpretations of the Rule to the date of such amendment, as well as such changed circumstances, and (ii) either (A) the holders of a majority in aggregate principal amount (or any greater amount required by any other provision of this Resolution that authorizes such an amendment) of the outstanding Bonds consent to such amendment or (B) a person that is unaffiliated with the Board and the Permanent University Fund (such as nationally-recognized bond counsel) determines that such amendment will not materially impair the interests of the holders and beneficial owners of the Bonds. If the Board so amends the provisions of this Section 18, it shall include with any amended financial information or operating data next provided in accordance with this Section 18 an explanation, in narrative form, of the reasons for the amendment and of the impact of any change in the type of financial information or operating data so provided. The Board may also amend or repeal the provisions of this continuing disclosure requirement if the SEC amends or repeals the applicable provisions of the Rule or a court of final jurisdiction enters judgment that such provisions of the Rule are invalid, but only if and to the extent that the provisions of this sentence would not prevent an underwriter from lawfully purchasing or selling Bonds in the primary offering of the Bonds.

SECTION 19. PROVISIONS CONCERNING FEDERAL INCOME TAX EXCLUSION.

(a) General Tax Covenant. As used in this Section 19, the term "Bonds" shall mean only Bonds issued as Tax-Exempt Bonds. The Board covenants not to take any action or omit to take any action that, if taken or omitted, would cause the interest on the Bonds to be includable in gross income for federal income tax purposes. In furtherance thereof, the Board covenants to comply with sections 103 and 141 through 150 of the Code and the provisions set forth in the federal tax certificate executed by the Board in connection with the Bonds.

(b) No Private Use or Payment and No Private Loan Financing. The Board covenants that it will use the proceeds of the Bonds (including investment income) and the property financed, directly or indirectly, with such proceeds so that the Bonds will not be "private activity bonds" within the meaning of section 141 of the Code. Furthermore, the Board will not take a deliberate action (as defined in section 1.141-2(d)(3) of the Regulations) that causes the Bonds to be a

"private activity bond" unless it takes a remedial action permitted by section 1.141-12 of the Regulations.

(c) No Federal Guarantee. The Board covenants not to take any action or omit to take any action that, if taken or omitted, would cause the Bonds to be "federally guaranteed" within the meaning of section 149(b) of the Code, except as permitted by section 149(b)(3) of the Code.

(d) No Hedge Bonds. The Board covenants not to take any action or omit to take action that, if taken or omitted, would cause the Bonds to be "hedge bonds" within the meaning of section 149(g) of the Code.

(e) No Arbitrage. The Board covenants that it will make such use of the proceeds of the Bonds (including investment income) and regulate the investment of such proceeds of the Bonds so that the Bonds will not be "arbitrage bonds" within the meaning of section 148(a) of the Code.

(f) Arbitrage Rebate. The Board covenants that, if the Board does not qualify for an exception to the requirements of section 148(f) of the Code, the Board will comply with the requirement that certain amounts earned by the Board on the investment of the gross proceeds of the Bonds, be rebated to the United States.

(g) Information Reporting The Board covenants to file or cause to be filed with the Secretary of the Treasury an information statement concerning the Bonds in accordance with section 149(e) of the Code.

(h) Record Retention The Board covenants to retain all material records relating to the expenditure of the proceeds (including investment income) of the Bonds and, if applicable, any obligations refunded therewith, and the use of the property financed, directly or indirectly, thereby until three years after the last Bond is redeemed or paid at maturity (or such other period as provided by subsequent guidance issued by the Department of the Treasury) in a manner that ensures their complete access throughout such retention period.

(i) Continuing Obligation. Notwithstanding any other provision of this Resolution, the Board's obligations under the federal tax covenants set forth above will survive the defeasance and discharge of the Bonds for as long as such matters are relevant to the excludability of interest on the Bonds from gross income for federal income tax purposes.

(j) Official Intent. For purposes of section 1.150-2(d) of the Regulations, to the extent that an official intent to reimburse has not previously been adopted by the Board, this Resolution serves as the Board's official declaration of intent to use proceeds of the Bonds to reimburse itself from proceeds of the Bonds issued in the maximum amount authorized by this Resolution for certain expenditures paid in connection with the projects set forth herein. Any such reimbursement will only be made (i) for an original expenditure paid no earlier than 60 days prior to the date hereof and (ii) not later than 18 months after the later of (A) the date the original expenditure is paid or (B) the date of with the project to which such expenditure relates is placed in service or abandoned, but in to event more than three years after the original expenditure is paid.

SECTION 20. SALE OF THE BONDS.

(a) The Authorized Representative is hereby authorized to act for and on behalf of the Board in connection with the issuance and sale of the Bonds. In that capacity, the Authorized Representative, acting for and on behalf of the Board, shall determine the dates for the issuance and sale of the Bonds and all other matters relating to the issuance, sale and delivery of the Bonds as set forth in Section 2(b) of this Resolution.

(b) Except as set forth in subsection (c) of this Section 20, the Bonds of each Series shall be sold through competitive bidding as required by the Constitutional Provision. For any Series of Bonds to be sold through competitive bidding pursuant to the terms hereof, the Authorized Representative shall prepare a notice of sale and bidding instructions (including an official bid form) with respect thereto to be in substantially the form and substance previously approved by the Board in connection with the authorization of Parity Obligations, which form is hereby approved, but with such changes and completions as the Authorized Representative may approve.

(c) Notwithstanding the provisions of subsection (b) of this Section 20 or any other provisions in this Resolution, any Series of Bonds constituting Refunding Bonds may be sold in the manner deemed by the Authorized Representative to be the most economically advantageous to the Board, as set forth in the Award Certificate.

If the Authorized Representative determines that a Series of Refunding Bonds should be sold by a negotiated sale, the Authorized Representative shall designate the senior managing underwriter for such Refunding Bonds and such additional investment banking firms as he or she deems appropriate to assure that the Refunding Bonds are sold on the most advantageous terms to the Board. The Authorized Representative, acting for and on behalf of the Board, is authorized to approve, execute and deliver a Bond Purchase Contract for each Series of Refunding Bonds to be sold by negotiated sale, with the underwriter(s) thereof at such price, with and subject to such terms as determined by the Authorized Representative pursuant to Section 2 of this Resolution. Each Bond Purchase Contract shall be substantially in the form and substance previously approved by the Board in connection with the authorization of Parity Obligations or the Board's revenue financing System obligations with such changes as are acceptable to the Authorized Representative, including those set forth in this Resolution with respect to disclosure documents and continuing disclosure provisions. The Authorized Representative's approval of a Bond Purchase Contract shall be conclusively evidenced by said Authorized Representative's execution thereof.

(d) Following the award of the sale of each Series of Bonds the Authorized Representative shall notify the Paying Agent/Registrar in writing of the identity of the purchaser of the Bonds and of the following terms for such Bonds: Series designation; dated date and Issuance Date; date from which interest accrues; principal amount; maturities; redemption provisions; rate or rates of interest; and first interest payment date. The Authorized Representative shall deliver the Initial Bonds of such Series to the purchasers thereof against payment therefor.

(e) The authority conferred by this Resolution to (i) act on behalf of the Board in selling any Series of Bonds and (ii) award the sale of the Bonds of such Series to a bidder in a competitive

sale or execute one or more Bond Purchase Contract(s) pursuant to this Section shall expire at 11:59 p.m. on August 31, 2024. Any Series of Bonds awarded pursuant to an official bid form or sold pursuant to a Bond Purchase Contract executed on or before August 31, 2024, may be delivered after such date.

SECTION 21. PROCEEDS OF SALE. Proceeds from the sale of each Series of Bonds shall, promptly upon receipt thereof, be applied by the Authorized Representative as follows:

(i) accrued interest for the Bonds, if any, shall be deposited in the Interest and Sinking Fund to be used to pay interest on the Bonds on the first interest payment date therefor;

(ii) if the Series of Bonds is being issued to refund Refunded Obligations, there shall be applied, from the remaining proceeds from the sale of such Bonds, the amounts specified in Section 23 of this Resolution; and

(iii) any proceeds from the sale of such Bonds remaining after the deposits provided for in clauses (i) and (ii) above shall be used to pay Project Costs of Eligible Projects and, to the extent not otherwise provided for, to pay all expenses arising in connection with the issuance of such Bonds and the refunding of the Refunded Obligations, as appropriate.

Any sale proceeds of the Bonds remaining after making all deposits and payments provided for above shall be deposited into the Interest and Sinking Fund.

SECTION 22. APPROVAL OF OFFICIAL STATEMENT. The Authorized Representative, acting for and on behalf of the Board, is authorized and directed to provide for and oversee the preparation of a preliminary official statement to be prepared for distribution (which may be made electronically) and to be used in the offering and sale of the Bonds. The Authorized Representative, acting for and on behalf of the Board, is hereby authorized to approve the form of the preliminary official statement and to deem the preliminary official statement to be final as of its date, except for such omissions as are permitted by the Rule. The Authorized Representative, acting for and on behalf of the Board, shall cause a final official statement to be prepared and provided in compliance with the Rule. Notwithstanding the foregoing, the Authorized Representative may prepare one preliminary official statement and one final official statement with respect to multiple Series of such Bonds so sold.

SECTION 23. REFUNDING AND REDEMPTION OF REFUNDED OBLIGATIONS; ESCROW AGREEMENT.

(a) Concurrently with the delivery of each Series of Bonds issued to refund Refunded Notes, the Authorized Representative shall cause to be deposited with the issuing and paying agent for the Refunded Notes or with an Escrow Agent selected by the Authorized Representative, from the proceeds from the sale of such Series of Bonds and other legally available funds, an amount sufficient to provide for the refunding and defeasance of such Refunded Notes, in accordance with Chapter 1207, Texas Government Code, as amended. In the event it is deemed necessary, the Authorized Representative is hereby authorized to select one or more Escrow Agent(s) with respect to the Refunded Notes and to enter into one or more Escrow Agreements. The Authorized

Representative is further authorized and directed to apply and there is hereby appropriated such moneys of the Board as are necessary (i) to provide for the defeasance of such Refunded Notes on the date of delivery of the Bonds or (ii) to fund the Escrow Fund to be created pursuant to the Escrow Agreement(s) with amounts sufficient to provide for the defeasance of the Refunded Notes.

(b) Concurrently with the delivery of each Series of Bonds issued to refund Refunded Bonds, the Authorized Representative shall cause to be deposited with the paying agent for the Refunded Bonds or with an Escrow Agent selected by the Authorized Representative, from the proceeds from the sale of such Series of Bonds and other legally available funds, an amount sufficient to provide for the refunding and defeasance of such Refunded Bonds, in accordance with Chapter 1207, Texas Government Code, as amended. In the event it is deemed necessary, the Authorized Representative is hereby authorized to select one or more Escrow Agent(s) with respect to the Refunded Bonds and to enter into one or more Escrow Agreements. The Authorized Representative is further authorized and directed to apply and there is hereby appropriated such moneys of the Board as are necessary (i) to provide for the defeasance of such Refunded Bonds on the date of delivery of the Bonds or (ii) to fund the Escrow Fund to be created pursuant to the Escrow Agreement(s) with amounts sufficient to provide for the defeasance of the Refunded Bonds.

(c) As provided in Section 2(b) of this Resolution, the Authorized Representative shall determine the particular Subordinate Lien Obligations and Potential Refunded Bonds to be refunded by a Series of Bonds subject, in the case of the Refunded Bonds, to the present value savings requirement of said Section 2(b).

(d) Subject to the execution of an Award Certificate and the determination by the Authorized Representative of the Refunded Bonds to be refunded by a Series of Bonds, the Board irrevocably calls the particular Potential Refunded Bonds constituting Refunded Bonds for redemption prior to maturity on the first optional redemption date following delivery of the Bonds of such Series, for which all of the notice requirements for redemption can reasonably be met, at a redemption price of par (plus accrued interest to the date fixed for redemption).

The Authorized Representative, acting for and on behalf of the Board, shall provide for notice of such redemption to be given in accordance with the resolution(s) of the Board authorizing the Refunded Bonds.

(e) If the Authorized Representative determines to execute an Escrow Agreement relating to the Refunded Notes or the Refunded Bonds, to assure the purchase of the "Escrowed Securities" referred to in the respective Escrow Agreements for the Refunded Notes or the Refunded Bonds, the Authorized Representative, acting for and on behalf of the Board, is hereby authorized to subscribe for, agree to purchase and purchase "Government Obligations" and "Defeasance Obligations" (as defined in resolutions authorizing the Refunded Notes or the Parity Bond Resolutions authorizing the Refunded Bonds, as appropriate) in such amounts and maturities and bearing interest at such rates as may be provided for in such Escrow Agreement, and to execute any and all subscriptions, purchase agreements, commitments, letters of authorization and other documents necessary to effectuate the foregoing, and is authorized to create and fund the "Escrow Fund" contemplated by such Escrow Agreement through the use of the proceeds of the Series of

Bonds issued to refund the Refunded Notes or the Refunded Bonds, the moneys and investments held in the fund securing the Refunded Notes or the Refunded Bonds, and other lawfully available moneys of the Board.

(f) To satisfy in a timely manner all of the Board's obligations under this Resolution and the Escrow Agreement(s), the Authorized Representative and all other appropriate officers and agents of the Board are hereby severally authorized and directed for and on behalf of the Board to take all other actions that are reasonably necessary to provide for the refunding of the Refunded Notes or the Refunded Bonds, including, without limitation, executing and delivering for and on behalf of the Board all certificates, consents, receipts, requests and other documents as may be reasonably necessary to satisfy the Board's obligations under the Escrow Agreement(s) and this Resolution and to direct the transfer and application of funds of the Board consistent with the provisions of such Escrow Agreement(s) and this Resolution.

SECTION 24. AGREEMENTS AUTHORIZED. The Paying Agent/Registrar Agreement, the Escrow Agreements, if used, and the Bond Purchase Contract are hereby approved and the Authorized Representative is hereby authorized to execute and deliver same and to execute certificates and other documents pursuant to any such agreement to carry out the intent thereof.

SECTION 25. PARTIES INTERESTED HEREIN. Nothing in this Resolution expressed or implied is intended or shall be construed to confer upon, or to give to, any person or entity, other than the Board, the Paying Agent/Registrar, and the Registered Owners any right, remedy, or claim under or by reason of this Resolution or any covenant, condition, or stipulation hereof, and all covenants, stipulations, promises, and agreements in this Resolution contained by and on behalf of the Board shall be for the sole and exclusive benefit of the Board, the Paying Agent/Registrar, and the Registered Owners.

SECTION 26. REMEDIES. Any owner or holder of any of the Bonds or Additional Parity Obligations, when issued, in the event of default in connection with any covenant contained herein or default in the payment of said obligations, or of any interest thereon, shall have the right to institute mandamus proceedings against the Board or any other necessary or appropriate party for the purpose of enforcing payment from the source pledged herein or for enforcing any covenant herein contained.

SECTION 27. INDIVIDUALS NOT LIABLE. All covenants, stipulations, obligations, and agreements of the Board contained in this Resolution shall be deemed to be covenants, stipulations, obligations, and agreements of the System and the Board to the full extent authorized or permitted by the Constitution and laws of the State. No covenant, stipulation, obligation, or agreement herein contained shall be deemed to be a covenant, stipulation, obligation, or agreement of any member of the Board or agent or employee of the Board in his individual capacity and neither the members of the Board nor any officer thereof shall be liable personally on the Parity Obligations or be subject to any personal liability or accountability by reason of the issuance thereof.

SECTION 28. EXECUTION, CUSTODY, APPROVAL, AND REGISTRATION OF BONDS; BOND COUNSEL'S OPINION; AND CUSIP NUMBERS.

(a) The Bonds shall be executed either manually or by facsimile signature on behalf of the Board by the Chairman or Vice Chairman of the Board and countersigned by the Executive Director, Board of Regents, or the Assistant to the Board, and the official seal of the Board shall be impressed or placed in facsimile thereon. Such facsimile signatures on the Bonds shall have the same effect as if each of the Bonds had been signed manually and in person by said officers of the Board, and such facsimile seal on the Bonds shall have the same effect as if the official seal of the Board had been manually impressed upon each of the Bonds.

(b) The Authorized Representative is hereby authorized to have control of the Initial Bonds of each Series issued and delivered hereunder and all necessary records and proceedings pertaining to such Bonds pending their delivery and approval by the Attorney General and their registration by the Comptroller. Upon registration of the Bonds of a Series, the Comptroller (or a deputy designated in writing to act for the Comptroller) shall manually sign the Comptroller's Registration Certificate printed or attached to the Initial Bonds of such Series, and the seal of said Comptroller shall be impressed or placed in facsimile thereon. The Bond Counsel Opinion and the assigned CUSIP numbers may, at the option of the Board, be printed on the Initial Bonds of such Series or on any Bonds issued and delivered in exchange or replacement of any Bond, but neither of such items shall be binding upon the Board or have any legal effect, and shall be solely for the convenience and information of the Registered Owners of the Bonds. If insurance is obtained on any of the Bonds, the Bonds shall bear, as appropriate and applicable, a legend concerning insurance as provided by the insurer.

SECTION 29. DTC LETTER OF REPRESENTATIONS. The Authorized Representative is authorized to implement the Book-Entry-Only System of Bond registration with respect to the Bonds pursuant to the Representation Letter. Notwithstanding anything to the contrary contained herein, while the Bonds are subject to DTC's Book-Entry-Only System and to the extent permitted by law, the Representation Letter is hereby incorporated herein and its provisions shall prevail over any other provisions of this Resolution in the event of conflict. Provisions relating to DTC, its Book-Entry-Only System of registration, and the Representation Letter are set forth in Section 14 of this Resolution.

SECTION 30. APPROPRIATION OF FUNDS. The Authorized Representative is further authorized and directed to apply and there is hereby appropriated such money of the Board as is necessary (i) to pay the costs of issuance of Bonds incurred in connection with the issuance thereof and the refunding of the Refunded Obligations, to the extent not paid from Bond proceeds and (ii) to make the deposits described in Sections 21 and 23 in amounts sufficient, together with the proceeds of the Bonds, to provide for the defeasance of the Refunded Obligations on the date of delivery of the Bonds.

SECTION 31. DEFEASANCE OF OUTSTANDING PARITY BONDS. (a) The Board desires to authorize the use of certain lawfully available funds of the Board, including but not limited to Available University Fund moneys, as determined by the Authorized Representative, to defease, from time to time, certain Outstanding Parity Bonds previously issued by the Board in accordance with the applicable defeasance provisions in the respective resolutions authorizing

their issuance. The Authorized Representative is hereby authorized to determine and retire, from time to time, the various portions of such Outstanding Parity Bonds which are economically advantageous for the Board to retire by the defeasance of such Bonds. The Authorized Representative is authorized to enter into one or more Escrow Agreements in substantially the standard form previously approved by the Board to accomplish such defeasances. In the event of such a defeasance, the Authorized Representative is authorized hereby to take such steps as may be necessary to purchase the escrowed securities identified in such escrow agreements on behalf of the Board and is authorized to create and fund the escrow funds contemplated by such Escrow Agreements through the use of the lawfully available funds of the Board. The Authorized Representative is authorized to call for redemption such Outstanding Parity Bonds defeased pursuant to this Section and is hereby authorized to provide and complete an appropriate notice of redemption to the paying agent(s) and/or registrar(s) for such Outstanding Parity Bonds upon the deposit with the Escrow Agent of such available funds and compliance with the conditions set forth in the Escrow Agreements.

(b) Except as provided in the following sentence, the Board hereby (i) expressly reserves the right to call for redemption any Outstanding Parity Bonds defeased pursuant to this Section in accordance with the applicable redemption provisions contained in the respective resolution authorizing their issuance, (ii) directs the Authorized Representative to give notice of the reservation of such right to the owners of such Outstanding Parity Bonds immediately following the making of the firm banking and financial arrangements for such defeasance, and (iii) directs the Authorized Representative to include notice of such reservation in any notice of redemption authorized pursuant to this Section. Notwithstanding the immediately preceding sentence, the Authorized Representative, upon determining that doing so is in the best interest of the Board, may elect on behalf of the Board not to retain the right to call such Outstanding Parity Bonds for redemption by choosing not to give the notices required in clauses (ii) and (iii) of the immediately preceding sentence.

(c) The Board hereby expressly authorizes the expenditure of, and appropriates for such purpose, moneys in the Available University Fund constituting the Available University Fund Share in the amount determined by the Authorized Representative for the purpose of defeasing Outstanding Parity Bonds in accordance with the terms of this Section 31; provided that, the remaining balance of the Available University Fund Share after giving effect to any such expenditure shall not be less than the sum of (i) the amount necessary for the Board to be able to fully observe and comply with its covenants and obligations, as appropriate, under (A) the Constitutional Provision, (B) all Parity Bond Resolutions and resolutions of the Board authorizing the issuance of Subordinate Lien Obligations that are then outstanding, and (C) all other resolutions or agreements then outstanding pursuant to which the obligations of the Board thereunder are payable from the Available University Fund Share, plus (ii) to the extent not included in clause (i) of this sentence, any unexpended amounts previously appropriated by the Board for the support and maintenance of The Texas A&M University System administration, Texas A&M University and Prairie View A&M University.

SECTION 32. FURTHER PROCEDURES. The Chairman of the Board, the Vice Chairman of the Board, the Executive Director, Board of Regents, each Authorized Representative, and all other officers, employees, and agents of the Board, and each of them, shall be and they are hereby expressly authorized, empowered, and directed from time to time and at

any time to do and perform all such acts and things and to execute, acknowledge, and deliver in the name and under the seal and on behalf of the Board all such agreements, documents and instruments, whether or not herein mentioned, as may be necessary or desirable in order to carry out the terms and provisions of this Resolution, the Bonds, the preliminary official statement, the official statement, the Paying Agent/Registrar Agreement, each Escrow Agreement, any Bond Purchase Contract and the Representation Letter. In addition, each Authorized Representative, the General Counsel of the System, and Bond Counsel are hereby authorized to approve, subsequent to the date of the adoption of this Resolution, any amendments to the above named documents, and any technical amendments to this Resolution as may be required by any Nationally-Recognized Rating Agency as a condition to the granting of a rating on the Bonds, as may be required by the Attorney General as a condition to the approval of the Bonds and as may be required to assist the underwriters in complying with the Rule.

In case any officer whose signature shall appear on the Bonds shall cease to be such officer before the delivery of the Bonds, such signature shall nevertheless be valid and sufficient for all purposes the same as if such officer had remained in office until such delivery. It is further provided the Authorized Representative is hereby designated as the officer responsible for making the certifications required by the Parity Bond Resolutions as a condition to the issuance of obligations on a parity with the Outstanding Parity Bonds.

SECTION 33. PUBLIC NOTICE. It is hereby found and determined that each of the officers and members of the Board were duly and sufficiently notified officially and personally, in advance, of the time, place, and purpose of the meeting at which this Resolution was adopted; that this Resolution would be introduced and considered for adoption at said meeting; that said meeting was open to the public, and public notice of the time, place, and purpose of said meeting was given, all as required by Chapter 551, Texas Government Code, as amended.

SECTION 34. NONPRESENTMENT OF BONDS. In the event any Bond shall not be presented for payment when the principal thereof or interest thereon, if applicable, becomes due, either at maturity or otherwise, or if any check or draft representing payment of principal of or interest on the Bonds shall not be presented for payment, if funds sufficient to pay the principal of or interest on such Bond shall have been made available by the Board to the Paying Agent/Registrar for the benefit of the Registered Owner thereof, all liability of the Board to such Registered Owner for the payment of the principal of or interest on such Bond shall cease, terminate, and be completely discharged, and thereupon it shall be the duty of the Paying Agent/Registrar to hold such funds in trust, uninvested and without liability for interest thereon, for the benefit of the Registered Owner of such Bond who shall thereafter be restricted exclusively to such funds for any claim of whatever nature on his part under this Resolution with respect to the principal of or interest on such Bond. To the extent applicable, the Paying Agent/Registrar shall hold and apply any such funds in accordance with Title 6, Texas Property Code, as amended, and shall comply with the reporting requirements of Chapter 74, Texas Property Code, as amended.

SECTION 35. INTERPRETATIONS. The titles and headings of the articles and sections of this Resolution have been inserted for convenience of reference only and are not to be considered a part hereof and shall not in any way modify or restrict any of the terms or provisions hereof. Except where the context otherwise requires, words importing the singular number shall include the plural number and vice versa; words importing the masculine gender shall include the

feminine and neuter genders and vice versa. Reference to any document means that document as amended or supplemented from time to time. Reference to any party to a document means that party and its successors and assigns. Reference herein to any article, section, subsection or other subdivision, as applicable, unless specifically stated otherwise, means the article, section, subsection or other subdivision, as applicable, of this Resolution.

SECTION 36. SEVERABILITY. The provisions of this Resolution are severable; and in case any one or more of the provisions of this Resolution or the application thereof to any person or circumstance should be held to be invalid, unconstitutional, or ineffective as to any person or circumstance, the remainder of this Resolution nevertheless shall be valid, and the application of any such invalid provision to persons or circumstances other than those as to which it is held invalid shall not be affected thereby.

SECTION 37. RECITALS INCORPORATED. The recitals of this Resolution are hereby incorporated by reference as if copied in full.

SECTION 38. IMMEDIATE EFFECT. This Resolution shall take effect immediately upon its adoption.

SECTION 39. REPEAL OF CONFLICTING RESOLUTIONS. All resolutions and all parts of any resolutions which are in conflict or are inconsistent with this Resolution are hereby repealed and shall be of no further force or effect to the extent of such conflict or inconsistency.

* * *

EXHIBIT A
FORM OF BONDS

[FORM OF FIRST TWO PARAGRAPHS OF CURRENT INTEREST BONDS]

UNITED STATES OF AMERICA
STATE OF TEXAS

NO. R - _____	PRINCIPAL AMOUNT
	\$ _____
REGISTERED	REGISTERED

BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM
PERMANENT UNIVERSITY FUND BONDS, SERIES _____

INTEREST RATE	MATURITY DATE	ISSUANCE DATE	CUSIP NO.
_____%	_____, 20__	_____	_____

REGISTERED OWNER: _____

PRINCIPAL AMOUNT: _____ DOLLARS (\$ _____)

ON THE MATURITY DATE, specified above, the BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM (the "Board"), being an agency of the State of Texas, hereby promises to pay to the Registered Owner, specified above, or the registered assignee hereof (either being hereinafter called the "registered owner") the Principal Amount, specified above, and to pay interest thereon calculated on the basis of a 360-day year of twelve 30-day months, from the Issuance Date specified above, to the date of its scheduled maturity or the date of its redemption prior to scheduled maturity, at the Interest Rate per annum, specified above, with said interest being payable on _____, 20__, and semiannually on each _____ and _____ thereafter, except that if the date of authentication of this Bond is later than the first Record Date (hereinafter defined), such principal amount shall bear interest from the interest payment date next preceding the date of authentication, unless such date of authentication is after any Record Date but on or before the next following interest payment date, in which case such principal amount shall bear interest from such next following interest payment date.

THE PRINCIPAL OF AND INTEREST ON this Bond are payable in lawful money of the United States of America, without exchange or collection charges. The principal of this Bond shall be paid to the registered owner hereof upon presentation and surrender of this Bond at maturity or upon the date fixed for its redemption prior to maturity, at the designated payment office of _____, _____, _____ which is the "Paying Agent/Registrar" for this Bond. The payment of interest on this Bond shall be made by the Paying Agent/Registrar to the registered owner hereof as shown by the "Registration Books" kept by the Paying Agent/Registrar at the close of business on the Record Date (hereinafter described) by check drawn by the Paying Agent/Registrar on, and payable solely from, funds of the Board required to be on deposit with the Paying Agent/Registrar for such purpose as hereinafter provided; and such check shall be sent by the Paying Agent/Registrar by United States mail, first-class postage prepaid, on

each such interest payment date, to the registered owner hereof at its address as it appears on the Registration Books kept by the Paying Agent/Registrar, as hereinafter described. Upon written request, the registered owner of any Bonds of at least \$1,000,000 in principal amount may receive payment of interest by wire transfer to any designated account within the United States of America. The record date for determining the person to whom interest is payable on any interest payment date (the "Record Date") means the 15th calendar day of the month next preceding such interest payment date. In the event of a non-payment of interest on a scheduled payment date, and for 30 calendar days thereafter, a new Record Date for such interest payment (a "Special Record Date") will be established by the Paying Agent/Registrar, if and when funds for the payment of such interest have been received from the Board. Notice of the Special Record Date and of the scheduled payment date of the past due interest (which shall be 15 days after the Special Record Date) shall be sent at least five Business Days prior to the Special Record Date by United States mail, first-class postage prepaid, to the address of each registered owner of a Bond appearing on the books of the Paying Agent/Registrar at the close of business on the last Business Day next preceding the date of mailing of such notice. The Board covenants with the registered owner of this Bond that no later than each principal payment date and interest payment date for this Bond it will make available to the Paying Agent/Registrar the amounts required to provide for the payment, in immediately available funds by wire transfer or other means acceptable to the Paying Agent/Registrar, of all principal of and interest on the Bonds, when due, in the manner set forth in the resolution authorizing the issuance of this Bond adopted by the Board on August 17, 2023 (the "Resolution"). Notwithstanding the foregoing, during any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, payments made to the securities depository, or its nominee, shall be made in accordance with arrangements between the Board and the securities depository. Terms used herein and not otherwise defined have the meanings given in the Resolution.

* * *

[FORM OF FIRST TWO PARAGRAPHS OF CAPITAL APPRECIATION BONDS]

UNITED STATES OF AMERICA
STATE OF TEXAS

NO. CR - ____

MATURITY AMOUNT
\$ _____

BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM
PERMANENT UNIVERSITY FUND BONDS, SERIES _____

INTEREST RATE	MATURITY DATE	ISSUANCE DATE	CUSIP NO.
____%	_____, 20____	_____	_____

REGISTERED OWNER: _____

MATURITY AMOUNT: _____ DOLLARS (\$ _____)

ON THE MATURITY DATE, specified above, the BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM (the "Board"), being an agency of the State of Texas, hereby promises to pay to the Registered Owner specified above or the registered assignee hereof (either being hereinafter called the "registered owner") the Maturity Amount specified above, representing the principal amount hereof and accrued and compounded interest hereon. Interest shall accrete on the original principal amount hereof from the Issuance Date at the interest rate per annum specified above (subject to rounding to the Compounded Amounts as provided in the Bond Resolution), compounded semi-annually on _____ and _____ of each year, commencing _____, 20____. For convenience of reference, a table appears on the back of this Bond showing the "Compounded Amount" of the original principal amount per \$5,000 Maturity Amount compounded semiannually at the yield shown on such table.

THE MATURITY AMOUNT OF this Bond are payable in lawful money of the United States of America, without exchange or collection charges. The Maturity Amount or Compounded Amount of this Bond shall be paid to the registered owner hereof upon presentation and surrender of this Bond at maturity or upon the date fixed for its redemption prior to maturity, at the designated payment office of _____, _____, _____ which is the "Paying Agent/Registrar" for this Bond. The Board covenants with the registered owner of this Bond that on or before the Maturity Date for this Bond it will make available to the Paying Agent/Registrar the amounts required to provide for the payment, in immediately available funds by wire transfer or other means acceptable to the Paying Agent/Registrar, of the Maturity Amount when due, in the manner set forth in the resolution authorizing the issuance of this Bond adopted by the Board on August 17, 2023 (the "Resolution"). Notwithstanding the foregoing, during any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, payments made to the securities depository, or its nominee, shall be made in accordance with arrangements between the Board and the securities depository. Terms used herein and not otherwise defined have the meanings given in the Resolution.

[FORM OF REMAINDER OF CURRENT INTEREST BONDS
AND CAPITAL APPRECIATION BONDS]

THIS BOND is one of a series of bonds of like tenor and effect, except as to denomination, number, maturity, interest rate, interest payment, and right of prior redemption, dated _____, 20__, and issued in the aggregate principal amount of \$_____ for the purposes of _____, *[and comprised of (i) Bonds in the aggregate principal amount of \$_____ that pay interest only at maturity (the "Capital Appreciation Bonds") and (ii) Bonds in the aggregate principal amount of \$_____ that pay interest semiannually until maturity (the "Current Interest Bonds")].

*[THE BONDS maturing on _____, 20__ (The "Term Bonds") shall be subject to mandatory redemption at par plus accrued interest in the following principal amounts on the following dates:

OF THE YEAR

AMOUNT

(final maturity)

The Term Bonds to be redeemed shall be selected by lot or other customary random method of the Paying Agent/Registrar (or by the securities depository in accordance with its procedures while the Bonds are in book-entry-only form). Any Term Bonds not selected for prior redemption shall be paid on the date of their stated maturity. At least thirty (30) days prior to each mandatory redemption date, the Paying Agent/Registrar shall cause a notice of redemption to be given in the manner provided herein.

The principal amount of the Term Bonds for a stated maturity required to be redeemed pursuant to the operation of such mandatory redemption provisions may be reduced, at the option of the Board, by the principal amount of any Term Bonds of like stated maturity which, at least 50 days prior to the mandatory redemption date, (1) shall have been defeased or acquired by the Board and delivered to the Paying Agent/Registrar at the request of the Board, or (2) shall have been redeemed pursuant to the optional redemption provisions and not theretofore credited against mandatory redemption requirement.]

*[ON _____, 20__, or on any date thereafter, the Bonds of this Series scheduled to mature on _____, 20__, and thereafter may be redeemed prior to their scheduled maturities, at the option of the Board, with funds derived from any available and lawful source, as a whole, or in part, and, if in part, the particular Bonds, or portion thereof, to be redeemed shall be selected and designated by the Board (provided that a portion of a Bond may be redeemed only in an integral multiple of \$5,000), at a redemption price equal to _____ plus accrued interest to the date fixed for redemption; provided that during any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, if fewer than all of the Bonds of the same maturity and bearing the same interest rate are to be redeemed, the particular Bonds of such maturity and bearing such interest rate shall be selected in accordance with the arrangements between the Board and the securities depository.]

*[AT LEAST 30 days prior to the date for any redemption of this Bond prior to maturity, a notice of such redemption shall be sent by the Paying Agent/Registrar by United States mail, first-class postage prepaid, to the registered owner of each Bond, or portion thereof to be redeemed, at its address as it appeared on the Registration Books on the 45th day prior to such redemption date and to each registered securities depository and to any national information service that disseminates such notices; provided, however, that the failure to send, mail, or receive such notice, or any defect therein or in the sending or mailing thereof, shall not affect the validity or effectiveness of the proceedings for the redemption of any Bond. By the date fixed for any such redemption, due provision shall be made by the Board with the Paying Agent/Registrar for the payment of the required redemption price for this Bond or the portion hereof which is to be so redeemed, plus accrued interest thereon to the date fixed for redemption. If such notice of redemption is given, and if due provision for such payment is made, all as provided above, this Bond, or the portion thereof which is to be so redeemed, thereby automatically shall be redeemed prior to its scheduled maturity, and shall not bear interest after the date fixed for its redemption, and shall not be regarded as being outstanding except for the right of the registered owner to receive the redemption price plus accrued interest to the date fixed for redemption from the Paying Agent/Registrar out of the funds provided for such payment. The Paying Agent/Registrar shall record in the Registration Books all such redemptions of principal of this Bond or any portion hereof. If a portion of any Bond shall be redeemed, a substitute Bond or Bonds having the same maturity date, bearing interest at the same rate, in any denomination or denominations in any integral multiple of \$5,000, at the written request of the registered owner, and in an aggregate principal amount equal to the unredeemed portion thereof, will be issued to the registered owner upon the surrender thereof for cancellation, at the expense of the Board, all as provided in the Resolution.]

IF AT THE TIME of mailing of notice of any optional redemption in connection with a refunding of the Bonds, the Board shall not have deposited with the Paying Agent/Registrar moneys sufficient to redeem all of the Bonds called for redemption, such notice may state that it is conditional in that it is subject to the deposit of the proceeds of refunding bonds with the Paying Agent/Registrar not later than the redemption date, and such notice shall be of no effect unless such moneys are so deposited.

IF THE DATE for the payment of the principal of or interest on this Bond shall be a Saturday, a Sunday, a legal holiday, or a day on which banking institutions in the city where the Paying Agent/Registrar is located are authorized by law or executive order to close, then the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day on which banking institutions are authorized to close; and payment on such date shall have the same force and effect as if made on the original date payment was due.

ALL BONDS OF THIS SERIES are issuable solely as fully registered bonds, without interest coupons, *[[with respect to Current Interest Bonds,] in the denomination of any integral multiple of \$5,000] [[with respect to Capital Appreciation Bonds,] in the denomination of \$5,000 Maturity Amounts or any integral multiple thereof.] As provided in the Resolution, this Bond, or any unredeemed portion hereof, may, at the request of the registered owner or the assignee or assignees hereof, be assigned, transferred, and exchanged for a like aggregate principal amount of fully registered bonds, without interest coupons, payable to the appropriate registered owner, assignee, or assignees, as the case may be, having the same maturity date, and bearing interest at

the same rate, in any denomination or denominations in any integral multiple of \$5,000 as requested in writing by the appropriate registered owner, assignee, or assignees, as the case may be, upon surrender of this Bond to the Paying Agent/Registrar for cancellation, all in accordance with the form and procedures set forth in the Resolution. Among other requirements for such assignment and transfer, this Bond must be presented and surrendered to the Paying Agent/Registrar, together with proper instruments of assignment, in form and with guarantee of signatures satisfactory to the Paying Agent/Registrar, evidencing assignment of this Bond or any portion or portions hereof in any integral multiple of \$5,000 to the assignee or assignees in whose name or names this Bond or any such portion or portions hereof is or are to be transferred and registered. The form of Assignment printed or endorsed on this Bond may be executed by the registered owner to evidence the assignment hereof, but such method is not exclusive, and other instruments of assignment satisfactory to the Paying Agent/Registrar may be used to evidence the assignment of this Bond or any portion or portions hereof from time to time by the registered owner. The Board shall pay the Paying Agent/Registrar's reasonable standard or customary fees and charges for transferring and exchanging any Bond or portion thereof; provided, however, that any taxes or governmental charges required to be paid with respect thereto shall be paid by the one requesting such transfer and exchange. In any circumstance, neither the Board nor the Paying Agent/Registrar shall be required (i) to make any transfer or exchange during a period beginning at the opening of business 15 calendar days before the day of the first mailing of a notice of redemption of Bonds and ending at the close of business on the day of such mailing or (ii) to transfer or exchange any Bonds so selected for redemption when such redemption is scheduled to occur within 30 calendar days; provided, however, that such limitation shall not be applicable to an exchange by the registered owner of the uncalled principal balance of a Bond.

IN THE EVENT any Paying Agent/Registrar for the Bonds is changed by the Board, resigns, or otherwise ceases to act as such, the Board has covenanted in the Resolution that it promptly will appoint a competent and legally qualified substitute therefor, and promptly will cause written notice thereof to be mailed to the registered owners of the Bonds.

BY BECOMING the registered owner of this Bond, the registered owner hereby acknowledges all of the terms and provisions of the Resolution, agrees to be bound by such terms and provisions, acknowledges that the Resolution is duly recorded and available for inspection in the official minutes and records of the Board, and agrees that the terms and provisions of this Bond and the Resolution constitute a contract between each registered owner hereof and the Board.

THE BONDS ARE ON A PARITY with Outstanding Parity Bonds, and the Board has reserved the right, subject to the restrictions stated in the Resolution, to issue additional obligations which also may be made payable from, and secured by a lien on and pledge of, the Available University Fund Share (as defined in the Resolution) on a parity with the Bonds, and the Board may issue other obligations payable from the Available University Fund Share junior and subordinate to the Bonds.

THE REGISTERED OWNER HEREOF shall never have the right to demand payment of this obligation out of any funds raised or to be raised by taxation, or from any source whatsoever other than specified in the Resolution.

IT IS HEREBY certified and covenanted that this Bond has been duly and validly authorized, issued, and delivered; that all acts, conditions, and things required or proper to be performed, exist, and be done precedent to or in the authorization, issuance, and delivery of this Bond have been performed, existed, and been done in accordance with law; and that the principal of and interest on this Bond are equally and ratably secured by and payable from a first lien on and pledge of the Available University Fund Share, all in accordance with the Constitutional Provision and other Applicable Law, on a parity with the lien and pledge securing the Outstanding Parity Bonds.

[remainder of page intentionally left blank]

IN WITNESS WHEREOF this Bond has been signed with the manual or facsimile signature of the [Chairman] [Vice Chairman] of the Board and countersigned with the manual or facsimile signature of the Executive Director, Board of Regents, and the official seal of the Board has been duly impressed, or placed in facsimile, on this Bond.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Executive Director, Board of Regents of
The Texas A&M University System

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
[Chairman] [Vice Chairman], Board of Regents
of The Texas A&M University System

(BOARD SEAL)

* * *

- * Marked provisions shall be conformed to the applicable terms identified in the Award Certificate

[INSERTIONS FOR THE INITIAL BONDS]

The Initial Current Interest Bond shall be in the form set forth in this exhibit, except that:

- A. Immediately under the name of the Bond, the headings "INTEREST RATE" and "MATURITY DATE" shall both be completed with the words "As shown below", and the heading "CUSIP NO." shall be deleted.
- B. The first paragraph of the Bond shall be deleted and the following will be inserted (with all blanks and bracketed items to be completed with information contained in the Award Certificate):

"THE BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY (the "Board"), being an agency of the State of Texas, hereby promises to pay to the registered owner specified above or the registered assignee hereof (either being hereinafter called the "Registered Owner") in each of the years in the principal amounts and bearing interest at the per annum rates set forth in the following schedule:

<u>YEARS OF STATED MATURITY</u>	<u>PRINCIPAL AMOUNTS</u>	<u>INTEREST RATES</u>
-------------------------------------	------------------------------	---------------------------

[Information from Award Certificate to be inserted]

THE BOARD promises to pay interest on the unpaid principal amount hereof from the Issuance Date specified above, to the date of its scheduled maturity or the date of its redemption prior to scheduled maturity, at the Interest Rate per annum, specified above, with said interest being payable on _____, 20____, and semiannually on each _____ and _____ thereafter, except that if the date of authentication of this Bond is later than the first Record Date (hereinafter defined), such principal amount shall bear interest from the interest payment date next preceding the date of authentication, unless such date of authentication is after any Record Date but on or before the next following interest payment date, in which case such principal amount shall bear interest from such next following interest payment date."

- C. The Initial Bond shall be numbered "T-I".

The Initial Capital Appreciation Bond shall be in the form set forth in this exhibit, except

- A. Immediately under the name of the Bond, the headings "INTEREST RATE" and "MATURITY DATE" shall both be completed with the words "As shown below", and the heading "CUSIP NO." shall be deleted.
- B. The first paragraph of the Bond shall be deleted and the following will be inserted (with all blanks and bracketed items to be completed with information contained in the Award Certificate):

"THE BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY (the "Board"), being an agency of the State of Texas, hereby promises to pay to the registered owner specified

above or the registered assignee hereof (either being hereinafter called the "Registered Owner") in each of the years in the principal amounts and bearing interest at the per annum rates set forth in the following schedule:

<u>YEARS OF STATED MATURITY</u>	<u>PRINCIPAL AMOUNTS</u>	<u>INTEREST RATES</u>
-------------------------------------	------------------------------	---------------------------

[Information from Award Certificate to be inserted]

INTEREST shall accrete on the original principal amount hereof from the Issuance Date at the interest rate per annum specified above (subject to rounding to the Compounded Amounts as provided in the Bond Resolution), compounded semi-annually on _____ and _____ of each year, commencing _____, 20____. For convenience of reference, a table appears on the back of this Bond showing the "Compounded Amount" of the original principal amount per \$5,000 Maturity Amount compounded semiannually at the yield shown on such table."

C. The Initial Capital Appreciation Bond shall be numbered "CT-I".

* * *

TABLE OF ACCRETED VALUES [FOR CAPITAL APPRECIATION BONDS]

The Accreted Value, initial offering price (all per \$5,000 of Maturity Amount), together with the yield to maturity are as follows. Accreted Values are calculated based on the initial offering price and yield to maturity and, except at maturity, do not equal principal amount plus accrued interest.

* * *

[FORM OF PAYING AGENT/REGISTRAR'S AUTHENTICATION CERTIFICATE]

PAYING AGENT/REGISTRAR'S AUTHENTICATION CERTIFICATE

IT IS HEREBY certified that this Bond has been issued under the provisions of the Resolution described in this Bond and that this Bond has been issued in conversion of and exchange for or replacement of a bond, bonds, or a portion of a bond or bonds of an issue which originally was approved by the Attorney General of the State of Texas and registered by the Comptroller of Public Accounts of the State of Texas.

as Paying Agent/Registrar

Dated: _____

By: _____
Authorized Representative

* * *

[FORM OF REGISTRATION CERTIFICATE
OF THE COMPTROLLER OF PUBLIC ACCOUNTS]

COMPTROLLER'S REGISTRATION CERTIFICATE

REGISTER NO.

I hereby certify that this Bond has been examined, certified as to validity, and approved by the Attorney General of the State of Texas, and that this Bond has been registered by the Comptroller of Public Accounts of the State of Texas.

Witness my signature and seal this

(COMPTROLLER'S SEAL)

Comptroller of Public Accounts of the State
of Texas

* * *

[FORM OF ASSIGNMENT]

ASSIGNMENT

For value received, the undersigned hereby sells, assigns and transfers unto _____

Please insert Social Security or Taxpayer Identification Number of Transferee

(Please print or typewrite name and address, including zip code, of Transferee.)

the within Certificate and all rights thereunder, and hereby irrevocably constitutes and appoints _____, attorney, to register the transfer of the within Certificate on the books kept for registration thereof, with full power of substitution in the premises.

Dated: _____

Signature Guaranteed:

NOTICE: Signature(s) must be guaranteed by an eligible guarantor institution participating in a securities transfer association recognized signature guarantee program.

NOTICE: The signature above must correspond with the name of the registered owner as it appears upon the front of this Certificate in every particular, without alteration or enlargement or any change whatsoever.

Note: In addition, provisions of the Bond relating to redemption may be changed, completed, or deleted as determined by the Authorized Representative to conform to the terms set forth in the Award Certificate.

AGENDA ITEM BRIEFING

Submitted by: Maria L. Robinson, Chief Investment Officer and Treasurer
The Texas A&M University System

Subject: Adoption of a Resolution Authorizing the Issuance of the Board of Regents
of The Texas A&M University System Revenue Financing System Bonds

Proposed Board Action:

Adopt a resolution authorizing the issuance of Revenue Financing System Bonds.

Background Information:

The resolution provides the authority for the issuance of one or more series of Revenue Financing System Bonds to: convert all or a portion of the commercial paper notes to long-term bonds; provide funds for construction, renovation and other projects; provide funds for property acquisitions; refund all or a portion of the outstanding bonds previously issued by the Board of Regents; and pay the costs of issuing the bonds. The authority in the maximum amount of \$700 million (including issuance costs) will be effective for the period from September 1, 2023 to August 31, 2024.

Bonds will be issued only for those projects approved by the Board of Regents, and the projects which may be financed during the fiscal year are estimated at \$697 million.

Previously issued outstanding bonds which are candidates for refunding total approximately \$40 million; however, only those bonds that meet the savings targets will be included in a refunding issue.

A&M System Funding or Other Financial Implications:

Debt service for Revenue Financing System Bonds will be funded with various revenues which may include housing revenue, utility revenue, designated tuition, transportation services, parking revenue, student fees, available university fund, higher education fund, and indirect costs.

Strategic Plan Imperative(s) this Item Advances:

This item advances Strategic Plan Imperative 6, which provides that “The A&M System, in adhering to the high standard of excellence and growth required in this strategic plan, will display prudent financial stewardship and sustainability.”

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
Office of the Chief Investment Officer and Treasurer
July 12, 2022

Members, Board of Regents
The Texas A&M University System

Subject: Adoption of a Resolution Authorizing the Issuance of the Board of Regents of The
Texas A&M University System Revenue Financing System Bonds

I recommend adoption of the following minute order:

“The resolution authorizing the issuance of the Board of Regents of The Texas A&M University System Revenue Financing System Bonds, substantially in the form of the attached exhibit, is adopted. The Chief Investment Officer and Treasurer, or other designated financial officer, is hereby authorized to take such actions as are necessary to accomplish the purposes of the resolution, including those relating to the issuance, sale, security and delivery of the bonds, all in accordance with the provisions of the resolution.”

Respectfully submitted,

Maria L. Robinson
Chief Investment Officer and Treasurer

Approval Recommended:

John Sharp
Chancellor

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

ITEM
EXHIBIT

THIRTY-THIRD SUPPLEMENTAL RESOLUTION TO THE
MASTER RESOLUTION AUTHORIZING THE ISSUANCE,
SALE, AND DELIVERY OF BOARD OF REGENTS OF THE
TEXAS A&M UNIVERSITY SYSTEM REVENUE FINANCING
SYSTEM BONDS IN THE MAXIMUM AGGREGATE
PRINCIPAL AMOUNT OF \$700 MILLION, AND APPROVING
AND AUTHORIZING INSTRUMENTS AND PROCEDURES
RELATING THERETO

Adopted August 16, 2023

THIRTY-THIRD SUPPLEMENTAL RESOLUTION TO THE
MASTER RESOLUTION AUTHORIZING THE ISSUANCE,
SALE, AND DELIVERY OF BOARD OF REGENTS OF THE
TEXAS A&M UNIVERSITY SYSTEM REVENUE FINANCING
SYSTEM BONDS IN THE MAXIMUM AGGREGATE
PRINCIPAL AMOUNT OF \$700 MILLION, AND APPROVING
AND AUTHORIZING INSTRUMENTS AND PROCEDURES
RELATING THERETO

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THIRTY-THIRD SUPPLEMENTAL RESOLUTION TO THE
MASTER RESOLUTION AUTHORIZING THE ISSUANCE,
SALE, AND DELIVERY OF BOARD OF REGENTS OF THE
TEXAS A&M UNIVERSITY SYSTEM REVENUE FINANCING
SYSTEM BONDS IN THE MAXIMUM AGGREGATE
PRINCIPAL AMOUNT OF \$700 MILLION, AND APPROVING
AND AUTHORIZING INSTRUMENTS AND PROCEDURES
RELATING THERETO

WHEREAS, the Board of Regents of The Texas A&M University System (the “Board”) has adopted a Master Resolution Establishing The Texas A&M University System Revenue Financing System (referred to herein as the “Master Resolution”); and

WHEREAS, unless otherwise defined herein, capitalized terms used herein shall have the meaning given in the Master Resolution; and

WHEREAS, the Master Resolution establishes the Revenue Financing System comprised of each institution and agency presently in The Texas A&M University System, and pledges the Pledged Revenues attributable to each Participant of the Revenue Financing System to the payment of Parity Obligations to be outstanding under the Master Resolution; and

WHEREAS, the Board has previously adopted the First through the Thirty-Second Supplemental Resolutions to the Master Resolution authorizing Parity Obligations thereunder; and

WHEREAS, the Board has determined to issue Parity Obligations in one or more installments to (i) finance and refinance the cost of facilities and improvements for the Participants of the Revenue Financing System, including but not limited to those set forth in The Texas A&M University System Capital Plan; (ii) provide permanent financing for facilities and improvements financed with the proceeds of Refunded Notes; (iii) refund Refunded Bonds; and (iv) pay the costs of issuance relating to such Parity Obligations; and

WHEREAS, for such purposes the Board deems it necessary to issue Parity Obligations pursuant to this Thirty-Third Supplement to the Master Resolution (the “Thirty-Third Supplement”); and

WHEREAS, pursuant to the Master Resolution, a Designated Financial Officer, has delivered to the Board a certificate stating that, to the best of his or her knowledge, the Board is in compliance with all covenants contained in the Master Resolution and each Supplemental Resolution and is not in default in the performance and observance of any of the terms, provisions, and conditions contained therein; and

WHEREAS, the Bonds authorized to be issued by this Thirty-Third Supplement are to be issued and delivered pursuant to Chapter 55, Texas Education Code, and Chapters 1207 and 1371, Texas Government Code,

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM THAT:

Section 1. DEFINITIONS.

(a) Definitions. In addition to the definitions set forth in the preamble of this Thirty-Third Supplement, the terms used in this Thirty-Third Supplement (except in the Form of Bonds) and not otherwise defined shall have the meanings given in the Master Resolution or in Exhibit A to this Thirty-Third Supplement attached hereto and made a part hereof.

(b) Construction of Terms. If appropriate in the context of this Thirty-Third Supplement, words of the singular number shall be considered to include the plural, words of the plural number shall be considered to include the singular, and words of the masculine, feminine, or neuter gender shall be considered to include the other genders.

Section 2. AMOUNT, PURPOSE, AND DESIGNATION OF THE BONDS.

(a) The Board's "BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM REVENUE FINANCING SYSTEM BONDS, SERIES _____," are hereby authorized to be issued and delivered in the maximum principal amount (determined without regard to premium or discount affecting the sale price) of \$700 Million, in one or more Series or sub-Series (as Tax-Exempt Bonds, Taxable Bonds or any combination thereof) as determined by the Designated Financial Officer pursuant to the terms of this Thirty-Third Supplement. The Bonds shall be designated by the year in which they are awarded pursuant to Section 3 below, and each Series within a year may have a letter designation following the year as determined by the Designated Financial Officer. The title of the Bonds may also be revised by a Designated Financial Officer as reflected in the Award Certificate pursuant to Section 3(b) hereof to reflect the status of the Bonds as Tax-Exempt Bonds or Taxable Bonds, as applicable. The authority conferred by this Thirty-Third Supplement to (i) act on behalf of the Board in selling any Series of Bonds and (ii) award the sale of the Bonds of such Series to a bidder in a competitive sale or execute one or more Bond Purchase Contract(s) pursuant to this Section shall expire at 11:59 p.m. on August 31, 2024 (the "Expiration Date"). Any Series of Bonds awarded pursuant to an official bid form or sold pursuant to a Bond Purchase Contract executed on or before the Expiration Date, may be delivered after such date.

(b) The Bonds are to be issued for the purpose of (i) financing and refinancing the costs of acquiring, purchasing, constructing, improving, enlarging, and equipping the property and facilities of the Participants of the Revenue Financing System; (ii) refunding all or a portion of the Potential Refunded Bonds; (iii) refunding all or a portion of the Board's outstanding Revenue Financing System Commercial Paper Notes, Series B (the "Notes") to provide permanent financing for facilities and improvements financed with the proceeds of the Notes; and (iv) paying the costs of issuance related thereto.

(c) To the extent that it is economically reasonable, Section 55.17 Projects may be financed in separate Series of Bonds and the Award Certificate relating to each such Series of Bonds shall show the principal amount of Parity Obligations, including the Bonds, issued for each Participant to finance or refinance Section 55.17 Projects and the additional Parity Obligations that

may be issued pursuant to such sections. Each Series of Bonds issued to refund portions of the Potential Refunded Bonds that were issued pursuant to Section 55.17 Authorization or issued to refund Parity Obligations issued pursuant to Section 55.17 Authorization, or any similar section, may also be included in that separate Series of Bonds.

(d) Each Series of Bonds herein authorized, unless otherwise indicated, are hereinafter referred to as the “Bonds,” which may be in the form of fixed or adjustable rate bonds and as either Current Interest Bonds or Capital Appreciation Bonds.

Section 3. DATE, DENOMINATIONS, NUMBERS, MATURITIES AND TERMS OF BONDS.

(a) Terms of Bonds. The Bonds shall initially be issued, sold, and delivered hereunder as fully registered bonds, without interest coupons, in the form of Current Interest Bonds or Capital Appreciation Bonds, numbered consecutively for each Series of Bonds from R-1 upward (or CR-1 upward, in the case of Capital Appreciation Bonds) (except the Initial Bond which shall be numbered T-1 for the Current Interest Bonds and TR-1 for the Capital Appreciation Bonds), payable to the respective initial registered owners thereof, or to the registered assignee or assignees of said bonds or any portion or portions thereof (in each case, the “Registered Owner”), in Authorized Denominations, maturing on the dates, in the years and in the principal amounts, respectively, and dated, all as set forth in the Award Certificate.

(b) Award Certificate. As authorized by Chapter 1371, Government Code, as amended, the Designated Financial Officer is hereby authorized, appointed, and designated to act on behalf of the Board in selling and delivering the Bonds and carrying out, the other procedures specified in this Thirty-Third Supplement, including determining and fixing: (i) the date of the Bonds, (ii) any additional or different designation or title by which the Bonds shall be known, (iii) the price at which the Bonds will be sold, (iv) the years in which the Bonds will mature, (v) the principal amount or Maturity Amount of the Bonds to mature in each of such years, (vi) the aggregate principal amount of the Bonds, including the aggregate principal amount of Current Interest Bonds and Capital Appreciation Bonds, (vii) the rate or rates of interest to be borne by each maturity, (viii) the interest payment periods, (ix) the dates, prices, and terms upon and at which the Bonds shall be subject to redemption, (x) the designation of which notes shall constitute the Refunded Notes refunded by the Bonds, (xi) the designation of which Potential Refunded Bonds shall constitute the Refunded Bonds, (xii) the Paying Agent/Registrar and Escrow Agent, if applicable, for the Bonds, (xiii) whether the Bonds shall be issued as Tax-Exempt Bonds or Taxable Bonds, (xiv) the Authorized Denominations for the Bonds, (xv) the date on which the Bonds shall be delivered to the purchaser(s) thereof, which date shall be not more than twelve (12) months following the Expiration Date, and (xvi) all other terms, provisions, details and matters relating to the Bonds and their issuance, sale, and delivery, and the refunding of the Refunded Obligations. All such determinations made by the Designated Financial Officer shall be specified in the Award Certificate delivered to the Executive Director, Board of Regents. Such determinations shall be limited by the following: (1) the price to be paid for the Bonds shall not be less than 95% of the aggregate original principal amount thereof plus accrued interest thereon, if any, from their dated date to their date of initial delivery, (2) none of the Bonds shall bear interest at a rate greater than the maximum rate allowed by law, (3) no Stated Maturity of any Bond shall be later than June 1, 2065, (4) the aggregate principal amount of the Bonds shall not exceed the

amount authorized in Section 2(a) hereof, and (5) Bonds shall be issued to refund all or a portion of the Potential Refunded Bonds only if that refunding, assuming that each Series sold and delivered at the same time is one Series of Bonds, results in the minimum present value savings set forth in the following paragraph.

Each Series of Bonds to be issued, in whole or in part, to refund Refunded Bonds must be sold on terms that produce a present value savings when the scheduled debt service payable on such Bonds during each Bond Year is subtracted from the scheduled debt service payable on the Refunded Bonds during the same Bond Year and the remainder is discounted to the scheduled date of delivery of the Bonds of such Series set forth in the Award Certificate at a discount factor equal to the yield on such Bonds determined in accordance with section 148 of the Code. The amount of the savings to be realized from the refunding shall be shown in the Award Certificate. The Award Certificate for each Series that is issued to refund Refunded Bonds or Refunded Notes shall also identify the Refunded Bonds or Refunded Notes being refunded by that Series.

It is further provided, however, that, notwithstanding the foregoing provisions, the Bonds shall not be delivered unless prior to delivery (i) the Award Certificate has been executed and delivered as required by this Thirty-Third Supplement and (ii) the Bonds have been rated by a Nationally-Recognized Rating Agency in one of the four highest rating categories for long-term obligations, as required by Chapter 1371, Texas Government Code, as amended.

The Designated Financial Officer is authorized and directed to determine which facilities and improvements will be financed or refinanced with the proceeds of the Bonds taking into account (i) the scheduled completion dates of the improvements and facilities financed with the proceeds of the Bonds, (ii) the economic projections for each such facility and improvement and the Participant on whose campus the facility or improvement is located and (iii) which Section 55.17 Projects are being undertaken and the projected budget impact on the Financing System of such financing. The designation of which improvements or facilities are to be financed or refinanced with the proceeds of the Bonds shall be set forth in the Award Certificate. Before the Designated Financial Officer may determine that any improvement or facility is to be financed or refinanced with the proceeds of the Bonds, (i) the improvement or facility must have been approved for construction and financing by the Board, (ii) the Board must have made the findings required by Section 5 of the Master Resolution with respect to the Parity Obligations to be issued for such improvement or facility, and (iii) the project must have received any required approval or review of the Higher Education Coordinating Board to the extent and as required by the provisions of Section 61.058 of the Texas Education Code.

Each Award Certificate is hereby incorporated in and made a part of this Thirty-Third Supplement and shall be filed in the minutes of the Board as a part of this Thirty-Third Supplement.

(c) Sale of the Bonds. To achieve the lowest borrowing costs for the Participants of the Financing System, each Series of Bonds shall be sold to the public on either a negotiated or competitive basis as determined by the Designated Financial Officer in the Award Certificate for that Series of Bonds. In determining whether to sell a Series of Bonds by negotiated or competitive sale, the Designated Financial Officer shall take into account the financial condition of the State, the System, and the Financing System, any material disclosure issues that might exist at the time, the market conditions expected at the time of the sale, the achievement of the HUB goals of the

Board, and any other matters that, in the judgment of the Designated Financial Officer, might affect the net borrowing costs on the Series of Bonds to be sold.

If the Designated Financial Officer determines that a Series of Bonds should be sold at a competitive sale, the Designated Financial Officer shall prepare a notice of sale and Official Statement in such manner as the Designated Financial Officer deems appropriate, to make the notice of sale and Official Statement available to those institutions and firms wishing to submit a bid for the Series of Bonds, to receive such bids, and to award the sale of the Series of Bonds to the bidder submitting the best bid in accordance with the provisions of the notice of sale. If the Designated Financial Officer determines that a Series of Bonds should be sold by a negotiated sale, the Designated Financial Officer shall designate the senior managing underwriter for such Series of Bonds and such additional investment banking firms as he or she deems appropriate to assure that the Bonds are sold on the most advantageous terms to the Financing System. The Designated Financial Officer, acting for and on behalf of the Board, is authorized to enter into and carry out the terms of a Bond Purchase Contract for each Series of the Bonds to be sold by negotiated sale, with the underwriter(s) thereof at such price, with and subject to such terms as determined by the Designated Financial Officer pursuant to subsection (b) above. The Designated Financial Officer's approval of a Bond Purchase Contract shall be conclusively evidenced by said Designated Financial Officer's execution thereof.

(d) In General. The Bonds (i) may and shall be redeemed prior to the respective scheduled maturity dates, (ii) may be assigned and transferred, (iii) may be exchanged for other Bonds, (iv) shall have the characteristics, (v) shall be signed and sealed, and (vi) shall be subject to redemption prior to maturity, and the principal of and interest on the Bonds shall be payable, all as provided, and in the manner required or indicated, in the FORM OF BONDS set forth in Exhibit B to this Thirty-Third Supplement and as determined by the Designated Financial Officer as provided herein, with such changes and additions as are required to be consistent with the terms and provisions shown in the Award Certificate relating to the Bonds.

(e) Delegation to Establish Sinking Fund for Balloon Debt. In the event that the Designated Financial Officer determines to issue Bonds that constitute Balloon Debt, the Designated Financial Officer may upon determining that it is in the best interests of the Board provide in the Award Certificate for (i) the establishment of a sinking fund for such Balloon Debt, (ii) the accumulation of amounts in such sinking fund either by a fixed schedule stated in such Award Certificate or by a formula setting forth the amount and timing of required contributions that in each case is sufficient to provide for the payment of all amounts due on such Balloon Debt, and (iii) any restrictions with respect to such sinking fund, including the investment thereof, necessary to ensure compliance with any applicable provisions of the Code.

(f) Finding Regarding Section 1207.008(b), Government Code. Pursuant to Section 1207.008(b), Government Code, it is hereby found that it is not practicable or possible to make the determination required by Section 1207.008(a), Government Code, in connection with the issuance of the Bonds to refund the Refunded Obligations. A portion of the Bonds is being authorized to refund the Refunded Notes to provide permanent financing for the improvements and facilities financed by the Refunded Notes. It is not possible to determine what the difference in debt service would be if the Refunded Notes were not refunded.

Section 4. INTEREST. Except as otherwise provided in the Award Certificate for the Bonds, (a) Current Interest Bonds of each Series of Bonds shall bear interest calculated on the basis of a 360-day year composed of twelve 30-day months from the dates specified in the FORM OF BONDS and in the Award Certificate to their respective dates of maturity at the rates set forth in the Award Certificate and (b) Capital Appreciation Bonds of each Series of Bonds shall bear interest from the Issuance Date for such Series of Bonds, calculated on the basis of a 360-day year composed of twelve 30-day months (subject to rounding to the Compounded Amounts thereof), compounded semiannually on the dates set forth in the Award Certificate (the “Compounding Dates”) commencing on the date set forth in the Award Certificate, and payable, together with the principal amount thereof, in the manner provided in the FORM OF BONDS at the rates set forth in the Award Certificate.

Attached to the Award Certificate, if Capital Appreciation Bonds are to be issued, shall be an Exhibit (the “Compounded Amount Table”) which will set forth the rounded original principal amounts at the Issuance Date for the Capital Appreciation Bonds and the Compounded Amounts and Maturity Amounts thereof (per \$5,000 Maturity Amount) as of each Compounding Date, commencing on the date set forth in the Award Certificate, and continuing until the final maturity of such Capital Appreciation Bonds. The Compounded Amount with respect to any date other than a Compounding Date is the amount set forth on the Compounded Amount Table with respect to the last preceding Compounding Date, plus the portion of the difference between such amount and the amount set forth on the Compounded Amount Table with respect to the next succeeding Compounding Date that the number of days (based on 30-day months) from such last preceding Compounding Date to the date for which such determination is being calculated bears to the total number of days (based on 30-day months) from such last preceding Compounding Date to the next succeeding Compounding Date.

**Section 5. REGISTRATION, TRANSFER AND EXCHANGE;
BOOK-ENTRY-ONLY SYSTEM; AUTHENTICATION.**

(a) Paying Agent/Registrar. The Designated Financial Officer is authorized to solicit bids for and to select a Paying Agent/Registrar for the Bonds. The Designated Financial Officer is also authorized to enter into and carry out a Paying Agent/Registrar Agreement with the Paying Agent/Registrar with respect to the Bonds in substantially the form previously approved by the Board.

(b) Registration Books. The Board shall keep Registration Books for the registration of the transfer, exchange, and replacement of Bonds, and the Board hereby designates the Paying Agent/Registrar as the initial registrar and transfer agent to keep such Registration Books and make such registrations of transfers, exchanges, and replacements under such reasonable regulations as the Board may prescribe; and the Paying Agent/Registrar shall make such registrations, transfers, exchanges, and replacements as herein provided. The Paying Agent/Registrar shall obtain and record in the Registration Books the address of the Registered Owner of each Bond to which payments with respect to the Bonds shall be mailed, as herein provided; but it shall be the duty of each Registered Owner to notify the Paying Agent/Registrar in writing of the address to which payments shall be mailed, and such interest payments shall not be mailed unless such notice has been given. The Board shall have the right to inspect the Registration Books during regular business hours of the Paying Agent/Registrar, but otherwise the Paying Agent/Registrar shall keep

the Registration Books confidential and, unless otherwise required by law, shall not permit their inspection by any other entity.

(c) Ownership of Bonds. The entity in whose name any Bond shall be registered in the Registration Books at any time shall be deemed and treated as the absolute owner thereof for all purposes of this Thirty-Third Supplement, whether or not such Bond shall be overdue, and, to the extent permitted by law, the Board and the Paying Agent/Registrar shall not be affected by any notice to the contrary; and payment of, or on account of, the principal of, premium, if any, and interest on any such Bond shall be made only to such Registered Owner. All such payments shall be valid and effectual to satisfy and discharge the liability upon such Bond to the extent of the sum or sums so paid.

(d) Payment of Bonds and Interest. The Board hereby further appoints the Paying Agent/Registrar to act as the paying agent for paying the principal of and interest on the Bonds, all as provided in this Thirty-Third Supplement. The Paying Agent/Registrar shall keep proper records of all payments made by the Board and the Paying Agent/Registrar with respect to the Bonds.

(e) Authentication. The Initial Bond shall be delivered to the initial purchaser and is not required to be, and shall not be, authenticated by the Paying Agent/Registrar, but on each Bond issued in exchange for the Initial Bond or any Bond or Bonds issued under this Thirty-Third Supplement the Paying Agent/Registrar shall execute the Paying Agent/Registrar's Authentication Certificate, in the form set forth in the FORM OF BONDS set forth in this Thirty-Third Supplement.

(f) Transfer, Exchange, or Replacement. Each Bond issued and delivered pursuant to this Thirty-Third Supplement, to the extent of the unpaid or unredeemed principal amount or Maturity Amount thereof, upon surrender of such Bond at a designated corporate trust office of the Paying Agent/Registrar, together with a written request therefor duly executed by the registered owner or the assignee or assignees thereof, or its or their duly authorized attorneys or representatives, with guarantee of signatures satisfactory to the Paying Agent/Registrar, may, at the option of the Registered Owner or such assignee or assignees, as appropriate, be exchanged for fully registered bonds, without interest coupons, in the appropriate form prescribed in the FORM OF BONDS set forth in this Thirty-Third Supplement, in the denomination of any Authorized Denominations (subject to the requirement hereinafter stated that each substitute Bond shall be of the same Series and have a single stated maturity date) as requested in writing by such Registered Owner or such assignee or assignees, in an aggregate principal amount or Maturity Amount equal to the unpaid or unredeemed principal amount or Maturity Amount of any Bond or Bonds so surrendered, and payable to the appropriate Registered Owner, assignee, or assignees, as the case may be. If a portion of any Bond shall be redeemed prior to its scheduled maturity as provided herein, a substitute Bond or Bonds having the same Series designation and maturity date, bearing interest at the same rate, and payable in the same manner, in Authorized Denominations at the request of the Registered Owner, and in aggregate principal amount equal to the unredeemed portion thereof, will be issued to the Registered Owner upon surrender thereof for cancellation. If any Bond or portion thereof is assigned and transferred, each Bond issued in exchange therefor shall have the same Series designation and maturity date and bear interest at the same rate and be payable in the same manner as the Bond for which it is being exchanged. Each substitute Bond

shall bear a letter and/or number to distinguish it from each other Bond. The Paying Agent/Registrar shall exchange or replace Bonds as provided herein, and each fully registered bond delivered in exchange for or replacement of any Bond or portion thereof as permitted or required by any provision of this Thirty-Third Supplement shall constitute one of the Bonds for all purposes of this Thirty-Third Supplement and may again be exchanged or replaced. On each substitute Bond issued in exchange for or replacement of any Bond or Bonds issued under this Thirty-Third Supplement there shall be printed an Authentication Certificate, in the form set forth in Exhibit B to this Thirty-Third Supplement. An authorized representative of the Paying Agent/Registrar shall, before the delivery of any such Bond, date and manually sign the above Authentication Certificate, and, except as provided in (e) above, no such Bond shall be deemed to be issued or outstanding unless such Certificate is so executed. The Paying Agent/Registrar promptly shall cancel all Bonds surrendered for transfer, exchange, or replacement. No additional resolutions need be passed or adopted by the Board or any other body or person so as to accomplish the foregoing transfer, exchange, or replacement of any Bond or portion thereof, and the Paying Agent/Registrar shall provide for the printing, execution, and delivery of the substitute Bonds in the manner prescribed herein. Pursuant to Chapter 1203, Texas Government Code, as amended, the duty of transfer, exchange, or replacement of Bonds as aforesaid is hereby imposed upon the Paying Agent/Registrar, and, upon the execution of the above Paying Agent/Registrar's Authentication Certificate, the exchanged or replaced Bond shall be valid, incontestable, and enforceable in the same manner and with the same effect as the Bonds which were originally issued pursuant to this Thirty-Third Supplement. The Board shall pay the Paying Agent/Registrar's standard or customary fees and charges, if any, for transferring, and exchanging any Bond or any portion thereof, but the one requesting any such transfer and exchange shall pay any taxes or governmental charges required to be paid with respect thereto as a condition precedent to the exercise of such privilege. The Paying Agent/Registrar shall not be required to make any such transfer, exchange, or replacement of Bonds or any portion thereof during the period commencing with the close of business on any Record Date and ending with the opening of business on the next following interest payment date. To the extent possible, any new Bond issued in an exchange, replacement, or transfer of a Bond will be delivered to the Registered Owner or assignee of the Registered Owner not more than three business days after the receipt of the Bonds to be cancelled and the written request as described above.

(g) Substitute Paying Agent/Registrar. The Board covenants with the Registered Owners of the Bonds that at all times while the Bonds are outstanding the Board will provide a competent and legally qualified bank, trust company, financial institution, or other agency to act as and perform the services of Paying Agent/Registrar for the Bonds under this Thirty-Third Supplement. The Board reserves the right to, and may, at its option, change the Paying Agent/Registrar upon not less than 60 days written notice to the Paying Agent/Registrar, to be effective not later than 60 days prior to the next principal or interest payment date after such notice. In the event that the entity at any time acting as Paying Agent/Registrar (or its successor by merger, acquisition, or other method) should resign or otherwise cease to act as such, the Board covenants that promptly it will appoint a competent and legally qualified bank, trust company, financial institution, or other agency to act as Paying Agent/Registrar under this Thirty-Third Supplement. Upon any change in the Paying Agent/Registrar, the previous Paying Agent/Registrar promptly shall transfer and deliver the Registration Books (or a copy thereof), along with all other pertinent books and records relating to the Bonds, to the new Paying Agent/Registrar designated and appointed by the Board. Upon any change in the Paying Agent/Registrar, the Board promptly will

cause a written notice thereof to be sent by the new Paying Agent/Registrar to each Registered Owner of the Bonds, by United States mail, first-class postage prepaid, which notice also shall give the address of the new Paying Agent/Registrar. By accepting the position and performing as such, each Paying Agent/Registrar shall be deemed to have agreed to the provisions of this Thirty-Third Supplement, and a certified copy of this Thirty-Third Supplement shall be delivered to each Paying Agent/Registrar.

(h) Book-Entry-Only System. The Definitive Bonds shall be initially issued in the form of a separate single fully registered Bond for each of the maturities thereof. Upon initial issuance, the ownership of each such Bond shall be registered in the name of Cede & Co., as nominee of the Depository Trust Company, New York, New York (“DTC”), and except as provided in subsection (i) hereof, all of the Outstanding Bonds shall be registered in the name of Cede & Co., as nominee of DTC.

With respect to Bonds registered in the name of Cede & Co., as nominee of DTC, the Board and the Paying Agent/Registrar shall have no responsibility or obligation to any DTC Participant or to any person on behalf of whom such a DTC Participant holds an interest on the Bonds. Without limiting the immediately preceding sentence, the Board and the Paying Agent/Registrar shall have no responsibility or obligation with respect to (i) the accuracy of the records of DTC, Cede & Co. or any DTC Participant with respect to any ownership interest in the Bonds, (ii) the delivery to any DTC Participant or any other person, other than a Bondholder, as shown on the Registration Books, of any notice with respect to the Bonds, including any notice of redemption, or (iii) the payment to any DTC Participant or any other person, other than a Bondholder, as shown in the Registration Books of any amount with respect to principal of, premium, if any, or interest on the Bonds. Notwithstanding any other provision of this Thirty-Third Supplement to the contrary, but to the extent permitted by law, the Board and the Paying Agent/Registrar shall be entitled to treat and consider the person in whose name each Bond is registered in the Registration Books as the absolute owner of such Bond for the purpose of payment of principal, premium, if any, and interest with respect to such Bond, for the purpose of giving notices of redemption and other matters with respect to such Bond, for the purpose of registering transfers with respect to such Bond, and for all other purposes whatsoever. The Paying Agent/Registrar shall pay all principal of, premium, if any, and interest on the Bonds only to or upon the order of the respective owners, as shown in the Registration Books as provided in this Thirty-Third Supplement, or their respective attorneys duly authorized in writing, and all such payments shall be valid and effective to fully satisfy and discharge the Board’s obligations with respect to payment of principal of, premium, if any, and interest on the Bonds to the extent of the sum or sums so paid. No person other than an owner, as shown in the Registration Books, shall receive a Bond certificate evidencing the obligation of the Board to make payments of principal, premium, if any, and interest pursuant to this Thirty-Third Supplement. Upon delivery by DTC to the Paying Agent/Registrar of written notice to the effect that DTC has determined to substitute a new nominee in place of Cede & Co., and subject to the provisions in this Thirty-Third Supplement with respect to interest checks being mailed to the Registered Owner at the close of business on the Record Date, the word “Cede & Co.” in this Thirty-Third Supplement shall refer to such new nominee of DTC.

(i) Successor Securities Depository: Transfers Outside Book-Entry-Only System. In the event that the Board determines to discontinue the use of the Book-Entry-Only System through DTC, or DTC determines to discontinue providing its services with respect to the Bonds the Board

shall (i) appoint a successor securities depository, qualified to act as such under Section 17(a) of the Securities and Exchange Act of 1934, as amended, notify DTC and DTC Participants of the appointment of such successor securities depository and transfer one or more separate Bonds to such successor securities depository or (ii) notify DTC and DTC Participants of the availability through DTC of Bonds and transfer one or more separate Bonds to DTC Participants having Bonds credited to their DTC accounts. In such event, the Bonds shall no longer be restricted to being registered in the Registration Books in the name of Cede & Co., as nominee of DTC, but may be registered in the name of the successor securities depository, or its nominee, or in whatever name or names Bondholders transferring or exchanging Bonds shall designate, in accordance with the provisions of this Thirty-Third Supplement. Whenever a successor securities depository has been appointed pursuant to this paragraph, the terms DTC and DTC Participant as used in this Thirty-Third Supplement shall refer to such successor securities depository and its participants, respectively.

(j) Payments to Cede & Co. Notwithstanding any other provision of this Thirty-Third Supplement to the contrary, so long as any Bond is registered in the name of Cede & Co., as nominee of DTC, all payments with respect to principal of, premium, if any, and interest on such Bond and all notices with respect to such Bond shall be made and given, respectively, in the manner provided in the Representation Letter.

(k) Notice of Redemption and Defeasance.

(i) In addition to the notice of redemption set forth in the FORM OF BONDS, the Designated Financial Officer shall give notice of redemption or defeasance to the Paying Agent/Registrar at least forty-five (45) days prior to a redemption date in the case of a redemption and on the defeasance date in the case of a defeasance and the Paying Agent/Registrar shall give notice of redemption or of defeasance of Bonds by mail, first-class postage prepaid at least thirty (30) days prior to a redemption date and within thirty (30) days after a defeasance date to each registered securities depository and to any national information service that disseminates such notices.

(ii) In addition, in the event of a redemption caused by an advance refunding of the Bonds, the Paying Agent/Registrar shall send a second notice of redemption to the persons specified in the immediately preceding sentence at least thirty (30) days but not more than ninety (90) days prior to the actual redemption date. Any notice sent to the registered securities depositories or such national information services shall be sent so that they are received at least two (2) days prior to the general mailing or publication date of such notice. The Paying Agent/Registrar shall also send a notice of prepayment or redemption to the Registered Owner of any Bond who has not sent the Bonds in for redemption sixty (60) days after the redemption date.

(iii) Each notice of redemption or defeasance, whether required in the FORM OF BONDS or in this Section, shall contain a description of the Bonds to be redeemed or defeased including the complete name of the Bonds, the date of issue, the interest rate, the maturity date, the CUSIP number, the amount called of each maturity, the publication and mailing date for the notice, the date of redemption or defeasance, the redemption price, if

any, the name of the Paying Agent/Registrar and the address at which the Bonds may be redeemed or paid, including a contact person and telephone number.

(iv) All redemption payments made by the Paying Agent/Registrar to the Registered Owners of the Bonds shall include a CUSIP number relating to each amount paid to such Registered Owner.

(v) If at the time of mailing of notice of any optional redemption in connection with a refunding of the Bonds, the Board shall not have deposited with the Paying Agent/Registrar or an eligible financial institution moneys sufficient to redeem all of the Bonds called for redemption, such notice may state that it is conditional in that it is subject to the deposit of the proceeds of refunding bonds with the Paying Agent/Registrar or an eligible financial institution not later than the redemption date, and such notice shall be of no effect unless such moneys are so deposited.

Section 6. FORM OF BONDS. The form of the Bonds, including the form of Paying Agent/Registrar's Authentication Certificate, the form of Assignment and the form of Registration Certificate of the Comptroller of Public Accounts of the State of Texas, if needed with respect to the Bonds initially issued and delivered pursuant to this Thirty-Third Supplement, shall be, respectively, substantially as set forth in Exhibit B, with such appropriate variations, omissions, or insertions as are permitted or required by this Thirty-Third Supplement and the Award Certificate, including specifically information relating to Capital Appreciation Bonds and Current Interest Bonds, redemption provisions, and the information to be included in the purpose clause.

Section 7. ESTABLISHMENT OF FINANCING SYSTEM AND ISSUANCE OF PARITY OBLIGATIONS. By adoption of the Master Resolution the Board has established The Texas A&M University System Revenue Financing System for the purpose of providing a financing structure for revenue supported indebtedness of the institutions and agencies of The Texas A&M University System which are from time to time included as Participants of the Financing System. The Master Resolution is intended to establish a master plan under which revenue supported debt of the Financing System can be incurred. This Thirty-Third Supplement provides for the authorization, issuance, sale, delivery, form, characteristics, provisions of payment and redemption, and security of the Bonds as Parity Obligations. The Master Resolution is incorporated herein by reference and as such made a part hereof for all purposes, except to the extent modified and supplemented hereby, and the Bonds are hereby declared to be Parity Obligations under the Master Resolution. As required by Section 5(a) of the Master Resolution, the Board hereby determines that, upon the issuance of the Bonds, it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Financing System and to meet all financial obligations of the Board relating to the Financing System and that the Participants on whose behalf the Bonds are to be issued possess the financial capacity to satisfy their Direct Obligations after taking the Bonds into account.

Section 8. SECURITY AND PAYMENTS. The Bonds are special obligations of the Board payable from and secured solely by the Pledged Revenues pursuant to the Master Resolution and this Thirty-Third Supplement. The Pledged Revenues are hereby pledged, subject to the liens securing Prior Encumbered Obligations, to the payment of the principal of, premium, if any, and

interest on Parity Obligations, including the Bonds, as the same shall become due and payable. The Board agrees to pay the principal of, premium, if any, and the interest on the Bonds when due, whether by reason of maturity or redemption.

Section 9. PAYMENTS.

(a) Immediately after the delivery of the Bonds, the Board shall deposit all accrued interest received from the sale and delivery of the Bonds to the credit of a special account to be held to pay interest on the Bonds on the first interest payment date.

(b) Semiannually on or before each principal, redemption, or interest payment date while any of the Bonds are outstanding and unpaid, commencing on the first interest payment date for the Bonds as provided in the Award Certificate, the Board shall make available to the Paying Agent/Registrar, money sufficient to pay such interest on and such principal of the Bonds, including the Maturity Amount of any Capital Appreciation Bonds, as will accrue or mature, or be subject to mandatory redemption prior to maturity, on such principal, redemption, or interest payment date. The Paying Agent/Registrar shall cancel all paid Bonds and shall furnish the Board with an appropriate certificate of cancellation.

Section 10. DAMAGED, MUTILATED, LOST, STOLEN, OR DESTROYED BONDS.

(a) Replacement Bonds. In the event any outstanding Bond is damaged, mutilated, lost, stolen, or destroyed, the Paying Agent/Registrar shall cause to be printed, executed, and delivered, a new bond of the same Series, principal amount, Maturity Amount, maturity and interest rate, and in the same form, as the damaged, mutilated, lost, stolen, or destroyed Bond, in replacement for such Bond in the manner hereinafter provided.

(b) Application for Replacement Bonds. Application for replacement of damaged, mutilated, lost, stolen, or destroyed Bonds shall be made to the Paying Agent/Registrar. In every case of loss, theft, or destruction of a Bond, the applicant for a replacement bond shall furnish to the Board and to the Paying Agent/Registrar such security or indemnity as may be required by them to save each of them harmless from any loss or damage with respect thereto. Also, in every case of loss, theft, or destruction of a Bond, the applicant shall furnish to the Board and to the Paying Agent/Registrar evidence to their satisfaction of the loss, theft, or destruction of such Bond, as the case may be. In every case of damage or mutilation of a Bond, the applicant shall surrender to the Paying Agent/Registrar for cancellation the Bond so damaged or mutilated.

(c) Payment in Lieu of Replacement. Notwithstanding the foregoing provisions of this Section, in the event any such Bond shall have matured, and no default has occurred which is then continuing in the payment of the principal, Maturity Amount, redemption premium, if any, or interest on the Bond, the Board may authorize the payment of the same (without surrender thereof except in the case of a damaged or mutilated Bond) instead of issuing a replacement Bond, provided security or indemnity is furnished as above provided in this Section.

(d) Charge for Issuing Replacement Bonds. Prior to the issuance of any replacement Bond, the Paying Agent/Registrar shall charge the owner of such Bond with all legal, printing, and other expenses in connection therewith. Every replacement Bond issued pursuant to the provisions

of this Section by virtue of the fact that any Bond is lost, stolen, or destroyed shall constitute a contractual obligation of the Board whether or not the lost, stolen, or destroyed Bond shall be found at any time, or be enforceable by anyone, and shall be entitled to all the benefits of this Thirty-Third Supplement equally and proportionately with any and all other Bonds duly issued under this Thirty-Third Supplement.

(e) Authority for Issuing Replacement Bonds. In accordance with Chapter 1203, Texas Government Code, as amended, this Section shall constitute authority for the issuance of any such replacement Bond without the necessity of further action by the Board or any other body or person, and the duty of the replacement of such Bonds is hereby authorized and imposed upon the Paying Agent/Registrar, and the Paying Agent/Registrar shall authenticate and deliver such Bonds in the form and manner and with the effect, as provided in Section 5(e) of this Thirty-Third Supplement for Bonds issued in exchange and replacement for other Bonds.

Section 11. AMENDMENT OF SUPPLEMENT.

(a) Amendments Without Consent. This Thirty-Third Supplement and the rights and obligations of the Board and of the owners of the Bonds may be modified or amended at any time without notice to or the consent of any owner of the Bonds or any other Parity Obligations, solely for any one or more of the following purposes:

(i) To add to the covenants and agreements of the Board contained in this Thirty-Third Supplement, other covenants and agreements thereafter to be observed, or to surrender any right or power reserved to or conferred upon the Board in this Thirty-Third Supplement;

(ii) To cure any ambiguity or inconsistency, or to cure or correct any defective provisions contained in this Thirty-Third Supplement, upon receipt by the Board of an opinion of Bond Counsel that the same is needed for such purpose and will more clearly express the intent of this Thirty-Third Supplement;

(iii) To supplement the security for the Bonds, replace or provide additional credit facilities, or change the form of the Bonds or make such other changes in the provisions hereof as the Board may deem necessary or desirable and which shall not, in the judgment of the Board, materially adversely affect the interests of the owners of the Outstanding Bonds;

(iv) To make such other changes in the provisions of this Thirty-Third Supplement as the Board may deem necessary or desirable and which does not, in the judgment of the Board, materially adversely affect the interests of the owners of Parity Obligations; or

(v) To make any changes or amendments requested by any National-Recognized Rating Agency then rating or requested to rate Bonds, as a condition to the issuance or maintenance of a rating, which changes or amendments do not, in the judgment of the Board, materially adversely affect the interests of the owners of the Outstanding Bonds.

(b) Amendments With Consent. Subject to the other provisions of this Thirty-Third Supplement, the owners of Outstanding Bonds aggregating fifty-one percent (51%) in Outstanding Principal Amount of Bonds shall have the right from time to time to approve any amendment, other than amendments described in subsection (a) of this Section, to this Thirty-Third Supplement which may be deemed necessary or desirable by the Board; provided, however, that nothing herein contained shall permit or be construed to permit, without the approval of the owners of all of the Outstanding Bonds, the amendment of the terms and conditions in this Thirty-Third Supplement or in the Bonds so as to:

- (i) Make any change in the maturity of the Outstanding Bonds;
- (ii) Reduce the rate of interest borne by Outstanding Bonds;
- (iii) Reduce the amount of the principal or Maturity Amount payable on Outstanding Bonds;
- (iv) Modify the terms of payment of principal or Maturity Amount of or interest on the Outstanding Bonds, or impose any conditions with respect to such payment;
- (v) Affect the rights of the owners of less than all Bonds then Outstanding; or
- (vi) Change the minimum percentage of the Outstanding Principal Amount of Bonds necessary for consent to such amendment.

(c) Notice. If at any time the Board shall desire to amend this Thirty-Third Supplement pursuant to (b) above, the Board shall cause notice of the proposed amendment to be published in a financial newspaper or journal of general circulation in the City of New York, New York, once during each calendar week for at least two successive calendar weeks or disseminated by electronic means customarily used to convey notices of redemption. Such notice shall briefly set forth the nature of the proposed amendment and shall state that a copy thereof is on file at the principal office of the Registrar for inspection by all owners of Bonds. Such publication is not required, however, if the Board gives or causes to be given such notice in writing to each owner of Bonds.

(d) Receipt of Consents. Whenever at any time not less than thirty days, and within one year, from the date of the first publication of said notice or other service of written notice of the proposed amendment the Board shall receive an instrument or instruments executed by all of the owners or the owners of at least fifty-one percent (51%) in Outstanding Principal Amount of Bonds, as appropriate, which instrument or instruments shall refer to the proposed amendment described in said notice and which specifically consent to and approve such amendment in substantially the form of the copy thereof on file as aforesaid, the Board may adopt the amendatory resolution in substantially the same form.

(e) Effect of Amendments. Upon the adoption by the Board of any resolution to amend this Thirty-Third Supplement pursuant to the provisions of this Section, this Thirty-Third Supplement shall be deemed to be amended in accordance with the amendatory resolution, and the respective rights, duties, and obligations of the Board and all the owners of then Outstanding Bonds and all future Bonds shall thereafter be determined, exercised, and enforced under the Master Resolution and this Thirty-Third Supplement, as amended.

(f) Consent Irrevocable. Any consent given by any owner of Bonds pursuant to the provisions of this Section shall be irrevocable for a period of six (6) months from the date of the first publication or other service of the notice provided for in this Section, and shall be conclusive and binding upon all future owners of the same Bonds during such period. Such consent may be revoked at any time after six months from the date of the first publication of such notice by the owner who gave such consent, or by a successor in title, by filing notice thereof with the Registrar and the Board, but such revocation shall not be effective if the owners of fifty-one percent (51%) in Outstanding Principal Amount of Bonds, prior to the attempted revocation, consented to and approved the amendment.

(g) Ownership. For the purpose of this Section, the ownership and other matters relating to all Bonds registered as to ownership shall be determined from the registration books kept by the Registrar therefor. The Registrar may conclusively assume that such ownership continues until written notice to the contrary is served upon the Registrar.

Section 12. COVENANTS REGARDING TAX MATTERS.

The Board covenants that it will monitor and control the receipt, investment, expenditure and use of all gross proceeds of the Tax-Exempt Bonds (including all property the acquisition, construction or improvement of which is to be financed directly or indirectly with the proceeds of the Tax-Exempt Bonds) and take or omit to take such other and further actions as may be required by Sections 103 and 141 through 150 of the Internal Revenue Code of 1986, as amended (the “Code”) and all applicable temporary, proposed and final regulations (the “Regulations”) to cause interest on the Tax-Exempt Bonds to be and remain excludable from the gross income, as defined in Section 61 of the Code, of the owners of the Tax-Exempt Bonds for federal income tax purposes. Without limiting the generality of the foregoing, the Board shall comply with each of the following covenants:

(a) The Board will use all of the proceeds of the Tax-Exempt Bonds to (i) provide funds for the purposes described in Section 2 hereof, which will be owned and operated by the Board and (ii) to pay the costs of issuing the Tax-Exempt Bonds and the costs of refunding the Refunded Bonds and the Refunded Notes. The Board will not use any portion of the proceeds of the Tax-Exempt Bonds to pay the principal of or interest or redemption premium on, any other obligation of the Board or a related person.

(b) The Board will not directly or indirectly take any action, or omit to take any action, which action or omission would cause the Tax-Exempt Bonds to constitute “private activity bonds” within the meaning of Section 141(a) of the Code.

(c) Principal of and interest on the Tax-Exempt Bonds will be paid solely from Pledged Revenues collected by the Board and investment earnings on such collections.

(d) Based upon all facts and estimates now known or reasonably expected to be in existence on the date the Tax-Exempt Bonds are delivered, the Board reasonably expects that the proceeds of the Tax-Exempt Bonds will not be used in a manner that would cause the Tax-Exempt Bonds or any portion thereof to be an “arbitrage bond” within the meaning of Section 148 of the Code.

(e) At all times while the Tax-Exempt Bonds are outstanding, the Board will identify and properly account for all amounts constituting gross proceeds of the Tax-Exempt Bonds in accordance with the Regulations. The Board will monitor the yield on the investments of the proceeds of the Tax-Exempt Bonds and, to the extent required by the Code and the Regulations, will restrict the yield on such investments to a yield which is not materially higher than the yield on the Tax-Exempt Bonds. To the extent necessary to prevent the Tax-Exempt Bonds from constituting “arbitrage bonds,” the Board will make such payments as are necessary to cause the yield on all yield restricted nonpurpose investments allocable to the Tax-Exempt Bonds to be less than the yield that is materially higher than the yield on the Tax-Exempt Bonds.

(f) The Board will not take any action or knowingly omit to take any action that, if taken or omitted, would cause the Tax-Exempt Bonds to be treated as “federally guaranteed” obligations for purposes of Section 149(b) of the Code.

(g) The Board represents that not more than fifty percent (50%) of the proceeds of the Tax-Exempt Bonds will be invested in nonpurpose investments (as defined in Section 148(f)(6)(A) of the Code) having a substantially guaranteed yield for four years or more within the meaning of Section 149(g)(3)(A)(ii) of the Code, and the Board reasonably expects that at least eighty-five percent (85%) of the spendable proceeds of the Tax-Exempt Bonds will be used to carry out the governmental purpose of the Tax-Exempt Bonds within the three-year period beginning on the date of issue of the Tax-Exempt Bonds. The Board further represents that not more than fifty percent (50%) of the proceeds of the Refunded Bonds and the Refunded Notes (to the extent such bonds and notes are refunded with the proceeds of Tax-Exempt Bonds) were invested in nonpurpose investments (as defined in Section 148(f)(6)(A) of the Code) having a substantially guaranteed yield for four years or more within the meaning of Section 149(g)(3)(A)(ii) of the Code, and on the date of issue of such Refunded Bonds and Refunded Notes, the Board reasonably expected that at least eighty-five percent (85%) of the spendable proceeds of such Refunded Bonds and Refunded Notes would be used to carry out the governmental purpose of such Refunded Bonds and Refunded Notes within the three-year period beginning on the date of issue of such Refunded Bonds and Refunded Notes.

(h) The Board will take all necessary steps to comply with the requirement that certain amounts earned by the Board on the investment of the gross proceeds of the Tax-Exempt Bonds, if any, be rebated to the federal government. Specifically, the Board will (i) maintain records regarding the receipt, investment, and expenditure of the gross proceeds of the Tax-Exempt Bonds as may be required to calculate such excess arbitrage profits separately from records of amounts on deposit in the funds and accounts of the Board allocable to other obligations of the Board or moneys which do not represent gross proceeds of any obligations of the Board and retain such records for at least six years after the day on which the last outstanding Bond is discharged, (ii) account for all gross proceeds under a reasonable, consistently applied method of accounting, not employed as an artifice or device to avoid in whole or in part, the requirements of Section 148 of the Code, including any specified method of accounting required by applicable Regulations to be used for all or a portion of any gross proceeds, (iii) calculate, at such times as are required by applicable Regulations, the amount of excess arbitrage profits, if any, earned from the investment of the gross proceeds of the Tax-Exempt Bonds and (iv) timely pay, as required by applicable Regulations, all amounts required to be rebated to the federal government. In addition, the Board will exercise reasonable diligence to assure that no errors are made in the calculations required by

the preceding sentence and, if such an error is made, to discover and promptly correct such error within a reasonable amount of time thereafter, including payment to the federal government of any delinquent amounts owed to it, interest thereon and any penalty.

(i) The Board will not directly or indirectly pay any amount otherwise payable to the federal government pursuant to the foregoing requirements to any person other than the federal government by entering into any investment arrangement with respect to the gross proceeds of the Tax-Exempt Bonds that might result in a reduction in the amount required to be paid to the federal government because such arrangement results in a smaller profit or a larger loss than would have resulted if such arrangement had been at arm's length and had the yield on the Tax-Exempt Bonds not been relevant to either party.

(j) The Board will timely file or cause to be filed with the Secretary of the Treasury of the United States the information required by Section 149(e) of the Code with respect to the Tax-Exempt Bonds on such form and in such place as the Secretary may prescribe.

(k) The Board will not issue or use the Tax-Exempt Bonds as part of an “abusive arbitrage device” (as defined in Section 1.148-10(a) of the Regulations). Without limiting the foregoing, the Tax-Exempt Bonds are not and will not be a part of a transaction or series of transactions that attempts to circumvent the provisions of Section 148 of the Code and the Regulations, by (i) enabling the Board to exploit the difference between tax-exempt and taxable interest rates to gain a material financial advantage, or (ii) increasing the burden on the market for tax-exempt obligations.

(l) Proper officers of the Board charged with the responsibility for issuing the Tax-Exempt Bonds are hereby directed to make, execute and deliver certifications as to facts, estimates or circumstances in existence as of the date of issuance of the Tax-Exempt Bonds and stating whether there are facts, estimates or circumstances that would materially change the Board's expectations. On or after the date of issuance of the Tax-Exempt Bonds, the Board will take such actions as are necessary and appropriate to assure the continuous accuracy of the representations contained in such certificates.

(m) The covenants and representations made or required by this Section are for the benefit of the Bond holders and any subsequent Bond holder, and may be relied upon by the Bond holders and any subsequent Bond holder and bond counsel to the Board.

In complying with the foregoing covenants, the Board may rely upon an unqualified opinion issued to the Board by nationally recognized bond counsel that any action by the Board or reliance upon any interpretation of the Code or Regulations contained in such opinion will not cause interest on the Tax-Exempt Bonds to be includable in gross income for federal income tax purposes under existing law.

Notwithstanding any other provision of this Thirty-Third Supplement, the Board's representations and obligations under the covenants and provisions of this Section shall survive the defeasance and discharge of the Tax-Exempt Bonds for as long as such matters are relevant to the exclusion of interest on the Tax-Exempt Bonds from the gross income of the owners for federal income tax purposes.

Section 13. CONTINUING DISCLOSURE UNDERTAKING.

(a) Annual Reports. The Board shall provide annually to the MSRB, in an electronic format as prescribed by the MSRB, within six (6) months after the end of each Fiscal Year, financial information and operating data with respect to The Texas A&M University System, including the Annual Financial Report of The Texas A&M University System, as determined by the Designated Financial Officer at the time the Bonds are sold. The Award Certificate shall specify such financial information and operating data. Any financial statements with respect to The Texas A&M University System so to be provided shall be (1) prepared on an accrual basis, or such other basis as the Board may be required to employ from time to time pursuant to state law or regulation, and (2) audited, if the Board commissions an audit of such statements and the audit is completed within the period during which they must be provided. If audited financial statements are not so provided within the required period, then the Board shall provide unaudited financial statements for the applicable Fiscal Year to the MSRB, in an electronic format as prescribed by the MSRB, and shall file audited financial statements when and if audited financial statements become available. If audited financial statements are not prepared for any Fiscal Year and audited financial statements are prepared with respect to the State of Texas for such Fiscal Year, the Board shall provide, or cause to be provided, the audited financial statements of the State of Texas for the applicable Fiscal Year to the MSRB, in an electronic format as prescribed by the MSRB, within six (6) months after the end of said Fiscal Year or as soon thereafter as such audited financial statements become available from the State Auditor of the State of Texas. Any such audited financial statements of the State of Texas so provided shall be prepared in accordance with generally accepted accounting principles for state governments, as such principles may be changed from time to time to comply with state law.

If the Board changes the Fiscal Year, the Board will notify the MSRB of the change (and of the date of the new Fiscal Year end) prior to the next date by which the Board otherwise would be required to provide financial information and operating data pursuant to this Section.

The financial information and operating data to be provided pursuant to this Subsection may be set forth in full in one or more documents or may be included by specific reference to any document that is available to the public on the MSRB's internet web site or filed with the SEC. All documents provided to the MSRB pursuant to this subsection shall be accompanied by identifying information as prescribed by the MSRB.

The Board shall notify the MSRB, in a timely manner, of any failure by the Board to provide financial information or operating data in accordance with this subsection by the time required.

(b) Event Notices. The Board shall notify the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner not in excess of ten (10) business days after the occurrence of the event, of any of the following events with respect to the Bonds: (i) principal and interest payment delinquencies; (ii) non-payment related defaults, if material; (iii) unscheduled draws on debt service reserves reflecting financial difficulties; (iv) unscheduled draws on credit enhancements reflecting financial difficulties; (v) substitution of credit or liquidity providers, or their failure to perform; (vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB)

or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds; (vii) modifications to rights of holders of the Bonds, if material; (viii) bond calls, if material, and tender offers; (ix) defeasances; (x) release, substitution, or sale of property securing repayment of the Bonds, if material; (xi) rating changes; (xii) bankruptcy, insolvency, receivership or similar event of the obligated person; (xiii) the consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; (xiv) the appointment of a successor or additional trustee or the change of name of a trustee, if material; (xv) incurrence of a Financial Obligation of the Board, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the Board, any of which affect security holders, if material; and (xvi) default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the Board, any of which reflect financial difficulties.

As used in clause (xii), above, the phrase “bankruptcy, insolvency, receivership or similar event” means the appointment of a receiver, fiscal agent or similar officer for the System in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the System, or if jurisdiction has been assumed by leaving the System in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the System. The Board intends the words used in clauses (xv) and (xvi), above, and the definition of Financial Obligation in this Section to have the same meanings as when they are used in the Rule, as evidenced by SEC Release No. 34-83885, dated August 20, 2018.

(c) Identifying Information. All information and notices shall be provided to the MSRB in an electronic format, as prescribed by the MSRB, and all documents provided to the MSRB pursuant to this Section shall be accompanied by identifying information, as prescribed by the MSRB.

(d) Limitations, Disclaimers, and Amendments. The Board shall be obligated to observe and perform the covenants specified in this Section for so long as, but only for so long as, the Board remains an “obligated person” with respect to the Bonds within the meaning of the Rule, except that the Board in any event will give the notice required by Section 4 of this Thirty-Third Supplement of any Bond calls and defeasance that cause the Bonds to no longer be outstanding.

The provisions of this Section are for the sole benefit of the holders and beneficial owners of the Bonds, and nothing in this Section, express or implied, shall give any benefit or any legal or equitable right, remedy, or claim hereunder to any other person. The Board undertakes to provide only the financial information, operating data, financial statements, and notices which it has expressly agreed to provide pursuant to this subsection and does not hereby undertake to provide any other information that may be relevant or material to a complete presentation of the Board’s financial results, condition, or prospects, or hereby undertake to update any information provided in accordance with this subsection or otherwise, except as expressly provided herein. The Board

does not make any representation or warranty concerning such information or its usefulness to a decision to invest in or sell Bonds at any future date.

UNDER NO CIRCUMSTANCES SHALL THE BOARD BE LIABLE TO THE HOLDER OR BENEFICIAL OWNER OF ANY BOND OR ANY OTHER PERSON, IN CONTRACT OR TORT, FOR DAMAGES RESULTING IN WHOLE OR IN PART FROM ANY BREACH BY THE BOARD, WHETHER NEGLIGENT OR WITHOUT FAULT ON ITS PART, OF ANY COVENANT SPECIFIED IN THIS SECTION, BUT EVERY RIGHT AND REMEDY OF ANY SUCH PERSON, IN CONTRACT OR TORT, FOR OR ON ACCOUNT OF ANY SUCH BREACH SHALL BE LIMITED TO AN ACTION FOR MANDAMUS OR SPECIFIC PERFORMANCE.

No default by the Board in observing or performing its obligations under this Section shall constitute a breach of or default under this Thirty-Third Supplement for purposes of any other provision of this Thirty-Third Supplement.

Should the Rule be amended to obligate the Board to make filings with or provide notices to entities other than the MSRB, the Board hereby agrees to undertake such obligation with respect to the Bonds in accordance with the Rule as amended.

Nothing in this Section is intended or shall act to disclaim, waive, or otherwise limit the duties of the Board under federal and State securities laws.

The provisions of this Section may be amended by the Board from time to time to adapt to changed circumstances that arise from a change in legal requirements, a change in law, or a change in the identity, nature, status, or type of operations of the Board, but only if (i) the provisions of this Section, as so amended, would have permitted an underwriter to purchase or sell Bonds in the primary offering of the Bonds in compliance with the Rule, taking into account any amendments or interpretations of the Rule to the date of such amendment, as well as such changed circumstances, and (ii) either (A) the holders of a majority in aggregate principal amount (or any greater amount required by any other provision of this Thirty-Third Supplement that authorizes such an amendment) of the outstanding Bonds consent to such amendment or (B) a person that is unaffiliated with the Board (such as nationally-recognized bond counsel) determines that such amendment will not materially impair the interests of the holders and beneficial owners of the Bonds. If the Board so amends the provisions of this Section, it shall include with any amended financial information or operating data next provided in accordance with this Section an explanation, in narrative form, of the reasons for the amendment and of the impact of any change in the type of financial information or operating data so provided. The Board may also amend or repeal the provisions of this continuing disclosure requirement if the SEC amends or repeals the applicable provisions of the Rule or a court of final jurisdiction enters judgment that such provisions of the Rule are invalid, but only if and to the extent that the provisions of this sentence would not prevent an underwriter from lawfully purchasing or selling Bonds in the primary offering of the Bonds.

(e) Modification of Undertaking. For the avoidance of doubt, the authority conferred on the Designated Financial Officer pursuant to Section 3(b) of this Thirty-Third Supplement to determine and fix terms, provisions, details and matters relating to the Bonds includes the authority

to modify the terms of this Section by specification of such modification in the Award Certificate for the Bonds.

Section 14. THIRTY-THIRD SUPPLEMENT TO CONSTITUTE A CONTRACT; EQUAL SECURITY. In consideration of the acceptance of the Bonds, the issuance of which is authorized hereunder, by those who shall hold the same from time to time, this Thirty-Third Supplement shall be deemed to be and shall constitute a contract between the Board and the Holders from time to time of the Bonds and the pledge made in this Thirty-Third Supplement by the Board and the covenants and agreements set forth in this Thirty-Third Supplement to be performed by the Board shall be for the equal and proportionate benefit, security, and protection of all Holders, without preference, priority, or distinction as to security or otherwise of any of the Bonds authorized hereunder over any of the others by reason of time of issuance, sale, or maturity thereof or otherwise for any cause whatsoever, except as expressly provided in or permitted by this Thirty-Third Supplement.

Section 15. SEVERABILITY OF INVALID PROVISIONS. If any one or more of the covenants, agreements, or provisions herein contained shall be held contrary to any express provisions of law or contrary to the policy of express law, though not expressly prohibited, or against public policy, or shall for any reason whatsoever be held invalid, then such covenants, agreements, or provisions shall be null and void and shall be deemed separable from the remaining covenants, agreements, or provisions and shall in no way affect the validity of any of the other provisions hereof or of the Bonds issued hereunder.

Section 16. PAYMENT AND PERFORMANCE ON BUSINESS DAYS. Except as provided to the contrary in the FORM OF BONDS, whenever under the terms of this Thirty-Third Supplement or the Bonds, the performance date of any provision hereof or thereof, including the payment of principal of or interest on the Bonds, shall occur on a day other than a Business Day, then the performance thereof, including the payment of principal of and interest on the Bonds, need not be made on such day but may be performed or paid, as the case may be, on the next succeeding Business Day with the same force and effect as if made on the date of performance or payment.

Section 17. LIMITATION OF BENEFITS WITH RESPECT TO THE THIRTY-THIRD SUPPLEMENT. With the exception of the rights or benefits herein expressly conferred, nothing expressed or contained herein or implied from the provisions of this Thirty-Third Supplement or the Bonds is intended or should be construed to confer upon or give to any person other than the Board, the Holders, and the Paying Agent/Registrar, any legal or equitable right, remedy, or claim under or by reason of or in respect to this Thirty-Third Supplement or any covenant, condition, stipulation, promise, agreement, or provision herein contained. This Thirty-Third Supplement and all of the covenants, conditions, stipulations, promises, agreements, and provisions hereof are intended to be and shall be for and inure to the sole and exclusive benefit of the Board, the Holders, and the Paying Agent/Registrar as herein and therein provided.

Section 18. CUSTODY, APPROVAL, BOND COUNSEL'S OPINION, CUSIP NUMBERS, PREAMBLE AND INSURANCE. The Designated Financial Officer is hereby authorized to have control of the Bonds issued hereunder and all necessary records and proceedings pertaining to the Bonds pending their delivery and approval by the Attorney General of the State

of Texas of the proceedings authorizing the Bonds in accordance with Chapter 1371, Texas Government Code, as amended. The Designated Financial Officer is also authorized to request that the Attorney General approve the Bonds and that the Comptroller of Public Accounts register the Bonds, and to cause an appropriate legend reflecting such approval and registration to appear on the Bonds and the substitute Bonds. The approving legal opinion of Bond Counsel and the assigned CUSIP numbers may, at the option of the Board, be printed on the Bonds and on any Bonds issued and delivered in exchange or replacement of any Bond, but neither shall have any legal effect, and shall be solely for the convenience and information of the Registered Owners of the Bonds. The preamble to this Thirty-Third Supplement is hereby adopted and made a part of this Thirty-Third Supplement for all purposes. If insurance is obtained on any of the Bonds, the Bonds shall bear, as appropriate and applicable, a legend concerning insurance as provided by the Insurer.

Section 19. REFUNDING OF REFUNDED OBLIGATIONS; ESCROW AGREEMENTS.

(a) Concurrently with the delivery of Bonds issued to refund Refunded Notes, the Designated Financial Officer shall cause to be deposited with the Issuing and Paying Agent for the Refunded Notes or with an Escrow Agent selected by the Designated Financial Officer, from the proceeds from the sale of such Series of Bonds and other legally available funds, an amount sufficient to provide for the refunding and defeasance of such Refunded Notes. In the event it is deemed necessary, the Designated Financial Officer is hereby authorized to select one or more Escrow Agent(s) with respect to the Refunded Notes and to enter into one or more Escrow Agreements. The Designated Financial Officer is further authorized and directed to apply and there is hereby appropriated such moneys of the Board as are necessary (i) to provide for the defeasance of such Refunded Notes on the date of delivery of the Bonds or (ii) to fund the Escrow Fund to be created pursuant to the Escrow Agreement(s) with amounts sufficient to provide for the defeasance of the Refunded Notes.

(b) Concurrently with the delivery of each Series of Bonds issued in whole or in part to refund Refunded Bonds, the Designated Financial Officer shall cause to be deposited with the paying agent/registrar for the Refunded Bonds or Escrow Agent selected by the Designated Financial Officer, from the proceeds from the sale of such Series of Bonds and other legally available funds, an amount sufficient to provide for the refunding and defeasance of such Refunded Bonds in accordance with Chapter 1207, Texas Government Code, as amended. In the event it is deemed necessary, the Designated Financial Officer is hereby authorized to select one or more Escrow Agent(s) with respect to the Refunded Bonds and to enter into one or more Escrow Agreements. The Designated Financial Officer is further authorized and directed to apply and there is hereby appropriated such moneys of the Board as are necessary (i) to provide for the defeasance of such Refunded Bonds on the date of delivery of the Bonds or (ii) to fund the Escrow Fund to be created pursuant to the Escrow Agreement(s) with amounts sufficient to provide for the defeasance of the Refunded Bonds.

(c) With regard to issuance of any Series of Bonds constituting Refunding Bonds, as provided in Section 2(b) above, the Designated Financial Officer shall designate in the Award Certificate the particular Potential Refunded Bonds to be refunded by such Series of Bonds; provided, that the Award Certificate in which Refunded Bonds are so designated must contain a

certification to the effect that the Bonds of such Series being issued to refund such Refunded Bonds are being sold on terms that produce present value savings as required by Section 3(b) hereof.

(d) Subject to the designation by the Designated Financial Officer of the Refunded Bonds to be refunded by a Series of Bonds, the Board irrevocably calls the particular Potential Refunded Bonds constituting Refunded Bonds for redemption prior to maturity on the date(s) and at the price(s) set forth in the Award Certificate.

The Designated Financial Officer, acting for and on behalf of the Board, shall provide for notice of such redemption to be given in accordance with the resolution(s) of the Board authorizing the Refunded Bonds.

(e) To assure the purchase of the “Escrowed Securities” referred to in the respective Escrow Agreements for the Refunded Notes or the Refunded Bonds, the Designated Financial Officer, acting for and on behalf of the Board, is hereby authorized to subscribe for, agree to purchase and purchase “Government Obligations,” as defined in resolutions authorizing the Refunded Notes or the resolutions authorizing the Refunded Bonds, in such amounts and maturities and bearing interest at such rates as may be provided for in such Escrow Agreement, and to execute any and all subscriptions, purchase agreements, commitments, letters of authorization and other documents necessary to effectuate the foregoing, and is authorized to create and fund (or cause to be created and funded) the “Escrow Fund” contemplated by such Escrow Agreement through the use of the proceeds of the Series of Bonds issued to refund the Refunded Notes or the Refunded Bonds, the moneys and investments held in the fund securing the Refunded Notes or the Refunded Bonds, and other lawfully available moneys of the Board.

(f) To satisfy in a timely manner all of the Board’s obligations under this Thirty-Third Supplement and the Escrow Agreement(s), the Designated Financial Officer and all other appropriate officers and agents of the Board are hereby severally authorized and directed for and on behalf of the Board to take all other actions that are reasonably necessary to provide for the refunding of the Refunded Notes or the Refunded Bonds, including, without limitation, executing and delivering for and on behalf of the Board all certificates, consents, receipts, requests and other documents as may be reasonably necessary to satisfy the Board’s obligations under the Escrow Agreement(s) and this Thirty-Third Supplement and to direct the transfer and application of funds of the Board consistent with the provisions of such Escrow Agreement(s) and this Thirty-Third Supplement.

Section 20. APPLICATION OF BOND PROCEEDS.

(a) Proceeds from the sale of the Bonds shall, promptly upon receipt thereof, be applied by the Designated Financial Officer, as follows: (i) accrued interest for the Bonds shall be deposited as provided in Section 9 hereof; (ii) an amount sufficient to accomplish the purposes of Section 19 hereof shall be so applied; (iii) an amount sufficient to pay the cost of acquiring, purchasing, constructing, improving, enlarging and equipping the property, facilities and improvements being financed with the proceeds of the Bonds shall be deposited in the Board’s accounts to be used for such purposes; (iv) the amount of any premium received as a portion of the purchase price of the Bonds issued to finance improvements or facilities to be financed pursuant to Section 55.17 Authorization that is not to be counted against the authorized amount of

bonds that can be issued pursuant to such Section 55.17 Authorization, shall, except as otherwise allowed by state law, including Sections 1201.042 and 1201.029 of the Texas Government Code, be credited to a special account to be held to pay interest on the Bonds on the first interest payment date; and (v) any proceeds from the sale of the Bonds remaining after the deposits provided for in clauses (i) through (iv) above, shall be applied to pay expenses arising in connection with the issuance of the Bonds and the refunding of the Refunded Obligations.

Any sale proceeds of Bonds remaining after making all deposits and payments provided for above shall be applied to the payment of principal of and interest on the Bonds.

(b) Additional projects may be added to the list of projects included in the Award Certificate pursuant to Section 3 hereof and the amount of the proceeds of the Bonds allocated to each project may be reallocated to other projects in the list (such reallocation may also result in the removal of any such project), and therefore be financed or refinanced with the proceeds of the Bonds upon satisfaction of the following conditions:

(i) the project has received any required approval or review of the Higher Education Coordinating Board to the extent and as required by the provisions of Section 61.058 of the Texas Education Code;

(ii) the Board shall have approved the construction of the project and made the findings required by Section 5 of the Master Resolution relating to the issuance of Parity Obligations to finance the cost of the project;

(iii) with respect to Tax-Exempt Bonds, the Board shall have received an opinion of Bond Counsel with respect to the Revenue Financing System, to the effect that the amendment of the exhibit, or the financing or refinancing of the project, and the expenditure of the proceeds of the Tax-Exempt Bonds to pay the cost of project will not adversely affect the treatment of interest on the Tax-Exempt Bonds for federal income tax purposes; and

(iv) the Designated Financial Officer shall execute and deliver a certificate to the Executive Director, Board of Regents certifying (a) that the requirements of subsection (b)(i), (ii), and (iii) of this Section have been satisfied and having attached to such certificate copies of the documents referred to in those subsections and (b) that, to the extent that the list of projects set forth in the Award Certificate or the allocation of proceeds set forth in the Award Certificate to finance or refinance improvements and facilities pursuant to Section 55.17 Authorization have been changed, the Board is in compliance with the requirements and limitations of such sections of the Education Code. A copy of the certificate shall be filed in the minutes of the Board with the Award Certificate.

Section 21. FURTHER PROCEDURES.

(a) The Chairman, Vice Chairman and Executive Director, Board of Regents, and each member of the Board, the Designated Financial Officer, and all other officers, employees, and agents of the Board, and each of them, shall be and they are hereby expressly authorized, empowered, and directed from time to time and at any time to do and perform all such acts and things and to execute, acknowledge, and deliver in the name and under the corporate seal and on behalf of the Board all such instruments, whether or not herein mentioned, as may be necessary or desirable in order to carry out the terms and provisions of this Thirty-Third Supplement, the Award Certificate, the Representation Letter, the Bonds, the sale and delivery of the Bonds and fixing all details in connection therewith, and the refunding of the Refunded Obligations. In addition, the Designated Financial Officer is authorized to submit a notice of intent to the Texas Bond Review Board requesting the approval of the issuance of the Bonds if such approval is required by law.

(b) In case any officer whose signature shall appear on the Bonds shall cease to be such officer before the delivery of the Bonds, such signature shall nevertheless be valid and sufficient for all purposes the same as if such officer had remained in office until such delivery.

(c) The Board hereby determines that (i) designating the number of this Supplemental Resolution is a ministerial act and (ii) the number of this Supplemental Resolution shall be revised at the direction of the Designated Financial Officer to conform the number of this Supplemental Resolution to the actual sequence of the Board's approval of this Supplemental Resolution in relation to the Board's approval of any other Supplemental Resolution(s). In addition, the Designated Financial Officer, General Counsel, and Bond Counsel are hereby authorized to approve, subsequent to the date of the adoption of this Thirty-Third Supplement, any amendments to the above named documents, and any technical amendments to this Thirty-Third Supplement as may be required by a Nationally-Recognized Rating Agency as a condition to the granting of a rating on the Bonds or as required by the office of the Texas Attorney General as a condition to the approval of the Bonds.

Section 22. APPROVAL OF NOTICE OF SALE AND OFFICIAL STATEMENT.

The Designated Financial Officer is authorized and directed to provide for and oversee the preparation of a notice of sale, if appropriate, a preliminary Official Statement and a final Official Statement in connection with the issuance of each Series of the Bonds, and to approve such official statement and deem it final in compliance with the Rule and to provide it to the purchasers of the Bonds in compliance with such Rule.

Section 23. DTC LETTER OF REPRESENTATIONS. The Designated Financial Officer is authorized to execute the Representation Letter and implement the Book-Entry-Only System of Bond registration with respect to the Bonds pursuant to the Representation Letter. Notwithstanding anything to the contrary contained herein, while the Bonds are subject to DTC's Book-Entry-Only-System and to the extent permitted by law, the Representation Letter is hereby incorporated herein and its provisions shall prevail over any other provisions of this Thirty-Third Supplement in the event of conflict. Provisions relating to DTC, its Book-Entry-Only System of registration, and the Representation Letter are detailed in Section 5(h) of this Thirty-Third Supplement.

Section 24. ADDITIONAL DEFEASANCE PROVISIONS.

(a) In addition to the defeasance provisions set forth in Section 12 of the Master Resolution, it is hereby provided that, to the extent that the Bonds are treated as Defeased Debt for purposes of Section 12 of the Master Resolution, any determination not to redeem Defeased Debt that is made in conjunction with the payment arrangements specified in Section 12(a)(i) or (ii) of the Master Resolution shall not be irrevocable, provided that: (1) in the proceedings providing for such defeasance, the Board expressly reserves the right to call the Defeased Bonds for redemption; (2) gives notice of the reservation of that right to the owners of the Defeased Bonds immediately following the defeasance; (3) directs that notice of the reservation be included in any redemption notices that it authorizes; and (4) at or prior to the time of the redemption, satisfies the conditions of subsection (a) of Section 12 of the Master Resolution with respect to such Defeased Debt as though it was being defeased at the time of the exercise of the option to redeem the Defeased Debt, after taking the redemption into account in determining the sufficiency of the provisions made for the payment of the Defeased Debt.

(b) Notwithstanding the provisions of Section 12(c) of the Master Resolution and except as otherwise provided in the Award Certificate for the Bonds, in connection with the defeasance of the Bonds pursuant to Section 12 of the Master Resolution, the term Government Obligations shall mean (i) direct, noncallable obligations of the United States of America, including obligations that are unconditionally guaranteed by the United States of America (including Interest Strips of the Resolution Funding Corporation), (ii) noncallable obligations of an agency or instrumentality of the United States of America, including obligations that are unconditionally guaranteed or insured by the agency or instrumentality and that, on the date the Board adopts or approves proceedings authorizing the issuance of refunding bonds or otherwise provide for the funding of an escrow to effect the defeasance of the Bonds are rated as to investment quality by a nationally recognized investment rating firm not less than “AAA” or its equivalent, and (iii) noncallable obligations of a state or an agency or a county, municipality, or other political subdivision of a state that have been refunded and that, on the date the Board adopts or approves proceedings authorizing the issuance of refunding bonds or otherwise provide for the funding of an escrow to effect the defeasance of the Bonds, are rated as to investment quality by a nationally recognized investment rating firm not less than “AAA” or its equivalent.

(c) Notwithstanding the provisions of Section 12 of the Master Resolution, the Board may provide for the irrevocable deposit contemplated by Section 12 of the Master Resolution to be made with the Paying Agent/Registrar or with any other eligible bank or trust company as then authorized by state law.

(d) Notwithstanding the provisions of Section 12 of the Master Resolution or any of the other provisions of this Section, any Taxable Bonds issued under this Thirty-Third Supplement may be designated by the Designated Financial Officer in the Award Certificate as not being subject to defeasance to the extent that such Designated Financial Officer determines in the Award Certificate that such treatment is in the best economic interests of the Board.

Section 25. REPEAL OF CONFLICTING RESOLUTIONS. All resolutions and all parts of any resolutions which are in conflict or are inconsistent with this Thirty-Third Supplement

are hereby repealed and shall be of no further force or effect to the extent of such conflict or inconsistency.

Section 26. DEFEASANCE OF OUTSTANDING PARITY OBLIGATIONS. The Board desires to authorize the use of certain lawfully available funds of the Board, as determined by the Designated Financial Officer, to defease and refund, from time to time, certain outstanding Parity Obligations previously issued by the Board in accordance with the applicable defeasance provisions in the respective Supplemental Resolutions that authorized the issuance of such Parity Obligations. The Designated Financial Officer is hereby authorized to determine and retire, from time to time, the various portions of such outstanding Parity Obligations which are economically advantageous for Board to retire by the defeasance of such debt. The Designated Financial Officer is authorized to enter into one or more Escrow Agreements to accomplish such defeasances. In the event of such a defeasance, the Designated Financial Officer is authorized hereby to take such steps as may be necessary to purchase the escrowed securities identified in such Escrow Agreements on behalf of the Board and is authorized to create and fund the escrow funds contemplated by the Escrow Agreements through the use of the lawfully available funds of the Board. The Designated Financial Officer is authorized to call for redemption such Parity Obligations defeased pursuant to this Section and is hereby authorized to provide and complete an appropriate notice of redemption to the paying agent(s) for such Parity Obligations in anticipation of or upon the deposit with the Escrow Agent of such available funds and compliance with the conditions set forth in the Escrow Agreements.

Section 27. PUBLIC NOTICE. It is hereby found and determined that each of the officers and members of the Board was duly and sufficiently notified officially and personally, in advance, of the time, place, and purpose of the meeting at which this Thirty-Third Supplemental Resolution was adopted, and that this Thirty-Third Supplemental Resolution would be introduced and considered for adoption at said meeting; that said meeting was open to the public, and public notice of the time, place, and purpose of said meeting was given, all as required by Chapter 551, Texas Government Code.

EXHIBIT A

DEFINITIONS

As used in this Thirty-Third Supplement the following terms and expressions shall have the meanings set forth below, unless the text hereof specifically indicates otherwise:

The term “Acts” means, collectively, Chapter 55, Texas Education Code, as amended, and Chapters 1207 and 1371, Texas Government Code, as amended.

The term “Authorized Denomination” means \$5,000 or any integral multiple thereof with respect to Current Interest Bonds and \$5,000 in Maturity Amount or any integral multiple thereof with respect to Capital Appreciation Bonds, except as otherwise provided in the Award Certificate for each Series of Bonds.

The term “Award Certificate” means the certificate executed by the Designated Financial Officer in connection with each Series of Bonds which establishes the terms of the Bonds delivered pursuant to Section 3 of this Thirty-Third Supplement.

The terms “Board” and “Issuer” mean the Board of Regents of The Texas A&M University System or any successor thereto.

The term “Bond Counsel” means Winstead PC, or such other nationally-recognized firm designated by the Board as Bond Counsel for purposes of this Thirty-Third Supplement.

The term “Bond Purchase Contract” means the Board’s agreement with underwriters providing for the sale of a Series of Bonds as authorized by Section 2(c) hereof, provided that two or more Series of Bonds may be sold to the same underwriters pursuant to the terms of a single Bond Purchase Contract.

The term “Bonds” means, collectively, the Bonds issued pursuant to this Supplemental Resolution, and all substitute bonds exchanged therefor, and all other substitute and replacement bonds issued pursuant to this Supplemental Resolution; and the term “Bond” means any of the Bonds.

The term “Bond Year” means the period beginning on June 2 of any calendar year and continuing through June 1 of the following calendar year.

The term “Business Day” means any day other than a Saturday, Sunday, or legal holiday, or a day on which banking institutions in either the State of New York or the State of Texas are authorized by law or executive order to close.

The term “Capital Appreciation Bonds” means the Bonds on which no interest is paid prior to maturity, maturing variously in each of the years and in the aggregate principal amount and Maturity Amount as set forth in the Award Certificate.

The term “Code” means the Internal Revenue Code of 1986, as amended.

The term “Compounded Amount” means, with respect to a Capital Appreciation Bond, as of any particular date of calculation, the original principal amount thereof, plus all interest accrued and compounded to the particular date of calculation, as determined in accordance with Section 4 of this Thirty-Third Supplement and the Compounded Amount Table relating to such Bonds.

The term “Compounded Amount Table” means, with respect to the Capital Appreciation Bonds, the Compounded Amount Table as defined in Section 4 of this Thirty-Third Supplement.

The term “Compounding Dates” means Compounding Dates as defined in Section 4 of this Thirty-Third Supplement.

The term “Current Interest Bonds” means the Bonds paying current interest and maturing in each of the years and in the aggregate principal amounts set forth in the Award Certificate.

The term “Definitive Bonds” means the Bonds issued in exchange for the Initial Bond.

The term “Designated Financial Officer” means each Designated Financial Officer under the Master Resolution and shall include the Chancellor, the Deputy Chancellor and Chief Financial Officer, the Chief Investment Officer and Treasurer, the Deputy Chief Investment Officer, or an officer who has assumed the duties of any of the foregoing named officers, or such other officer or employee of the System authorized by the Board to act as a Designated Financial Officer.

The term “DTC” means The Depository Trust Company of New York, New York, New York, or any successor securities depository.

The term “DTC Participant” means securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations on whose behalf DTC was created to hold securities to facilitate the clearance and settlement of securities transactions among DTC Participants.

The term “Escrow Agent” means each Escrow Agent selected pursuant to Section 19 hereof.

The term “Financial Obligation” means a (a) debt obligation; (b) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (c) guarantee of a debt obligation or any such derivative instrument; provided that “financial obligation” shall not include municipal securities (as defined in the Securities Exchange Act of 1934, as amended) as to which a final official statement (as defined in the Rule) has been provided to the MSRB consistent with the Rule.

The term “Initial Bond” means the Bond initially delivered hereunder and upon which the registration certificate, manually executed by or on behalf of the Comptroller of Public Accounts of the State of Texas, has been placed.

The term “Issuance Date” means the date of delivery of Bonds to the initial purchaser or purchasers thereof against payment therefor.

The term “MSRB” shall mean the Municipal Securities Rulemaking Board.

The term “Master Resolution” means the Master Resolution Establishing The Texas A&M University System Revenue Financing System adopted by the Board on November 19, 1990, as amended on September 17, 1993 and July 25, 1997.

The term “Maturity” means the date on which the principal of a Bond becomes due and payable as therein and herein provided, whether at Stated Maturity, by redemption, declaration of acceleration or otherwise.

The term “Maturity Amount” means the Compounded Amount of a Capital Appreciation Bond due on its Stated Maturity.

The term “Nationally-Recognized Rating Agency” means any nationally-recognized securities rating agency that provides a rating on the Bonds at the request of the Board.

The term “Official Statement” means the disclosure document describing the Bonds of a Series dated the date of sale pursuant to Section 22 of this Thirty-Third Supplement.

The term “Paying Agent/Registrar,” “Paying Agent” or “Registrar” means the agent appointed pursuant to Section 5 hereof, or any successor to such agent.

The term “Potential Refunded Bonds” means the outstanding Parity Obligations previously issued by the Board.

The term “Record Date” means, with respect to the Bonds, the last calendar day of each month preceding an interest payment date

The term “Refunded Bonds” means the Potential Refunded Bonds to be refunded by a Series of Bonds as set forth in the Award Certificate.

The term “Refunded Notes” means the Board’s Revenue Financing System Commercial Paper Notes, Series B to be refunded by a Series of Bonds as set forth in the Award Certificate.

The term “Refunded Obligations” means, collectively, the Refunded Notes, if any, and the Refunded Bonds, if any, refunded by a Series.

The term “Registration Books” means the books or records relating to the registration, payment and transfer or exchange of the Bonds maintained by the Paying Agent/Registrar pursuant to Section 5 hereof.

The term “Representation Letter” means the Blanket Letter of Representation with DTC regarding the Book Entry Only System.

The term “Rule” means SEC Rule 15c2-12, as amended from time to time.

The term “SEC” means the United States Securities and Exchange Commission.

The term “Section 55.17 Authorization” means the statutory authorization provided by the Legislature for Section 55.17 Projects.

The term “Section 55.17 Projects” means the improvements or facilities to be financed or refinanced with Bonds pursuant to Sections 55.1711, 55.1721, 55.1731, 55.1741, 55.17411, 55.1751, 55.1771, 55.1781, and 55.1791 of the Education Code, or similar provisions currently existing or hereafter enacted by the Legislature.

The term “Series” means any designated Series of Bonds issued pursuant to this Thirty-Third Supplement.

The term “State” means the State of Texas.

The term “Taxable Bonds” means any Bonds designated by the Designated Financial Officer in the Award Certificate as Taxable Bonds, the interest on which is not intended to be excludable from the gross income of the owners thereof for federal income tax purposes pursuant to section 103 of the Code.

The term “Tax-Exempt Bonds” means any Bonds designated by the Designated Financial Officer in the Award Certificate as Tax-Exempt Bonds, the interest on which is intended to be excludable from the gross income of the owners thereof for federal income tax purposes pursuant to section 103 of the Code.

The term “Thirty-Third Supplement” means this Supplemental Resolution authorizing the Bonds.

EXHIBIT B

FORM OF BONDS

#[FORM OF FIRST TWO PARAGRAPHS OF CURRENT INTEREST BONDS]

United States of America
State of Texas

NUMBER
R-____
REGISTERED

PRINCIPAL AMOUNT
\$_____
REGISTERED

BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM
REVENUE FINANCING SYSTEM BONDS, SERIES _____

<u>INTEREST RATE</u>	<u>MATURITY DATE</u>	<u>[DATED/ISSUANCE DATE]</u>	<u>CUSIP:</u>
_____%	_____, 20__	_____	_____

REGISTERED OWNER:

PRINCIPAL AMOUNT: _____ DOLLARS

ON THE MATURITY DATE specified above the BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM (the "Board"), being an agency of the State of Texas, hereby promises to pay to the registered owner, specified above, or to the registered assignee hereof (either being hereinafter called the "registered owner") the principal amount, specified above, and to pay interest thereon, calculated on the basis of a 360-day year composed of twelve 30-day consecutive months, from the [Dated Date] [Issuance Date], specified above, to the Maturity Date, specified above, or the date of redemption prior to maturity, at the interest rate per annum, specified above, with interest being payable on _____, 20__, and semiannually on each _____ and _____ thereafter, except that if the date of authentication of this Bond is later than the first Record Date (hereinafter defined), such principal amount shall bear interest from the interest payment date next preceding the date of authentication, unless such date of authentication is after any Record Date but on or before the next following interest payment date, in which case such principal amount shall bear interest from such next following interest payment date.

THE PRINCIPAL OF AND INTEREST ON this Bond are payable in lawful money of the United States of America, without exchange or collection charges, solely from funds of the Board required by the Bond Resolution (hereinafter defined) to be on deposit with the Paying Agent/Registrar for such purpose as hereinafter provided. The principal of this Bond shall be paid to the registered owner hereof upon presentation and surrender of this Bond at maturity or upon the date fixed for its redemption prior to maturity, at the corporate trust office of _____ in _____, which is the "Paying Agent/Registrar" for this Bond. The payment of interest

on this Bond shall be made by the Paying Agent/Registrar to the registered owner hereof on each interest payment date by check, dated as of such interest payment date, drawn by the Paying Agent/Registrar on, and payable solely from, funds of the Board required by the Bond Resolution (hereinafter defined), to be on deposit with the Paying Agent/Registrar for such purpose as hereinafter provided; and such check shall be sent by the Paying Agent/Registrar by United States mail, first-class postage prepaid, on each such interest payment date, to the registered owner hereof, at the address of the registered owner, as it appeared on the last calendar day of the month next preceding each such date (the "Record Date") on the Registration Books kept by the Paying Agent/Registrar, as hereinafter described; provided, that upon the written request of any owner of no less than \$1,000,000 in aggregate principal amount of the Bonds, delivered to the Paying Agent/Registrar not later than the Record Date immediately preceding an interest payment date, interest due on such interest payment date shall be made by wire transfer to any designated account within the United States of America. In addition, interest may be paid by such other method acceptable to the Paying Agent/Registrar, requested by, and at the risk and expense of, the registered owner. Any accrued interest due upon the redemption of this Bond prior to maturity as provided herein shall be paid to the registered owner upon presentation and surrender of this Bond for redemption and payment at the corporate trust office of the Paying Agent/Registrar. The Board covenants with the registered owner of this Bond that on or before each principal payment date, interest payment date, and accrued interest payment date for this Bond it will make available to the Paying Agent/Registrar, from the Pledged Revenues, the amounts required to provide for the payment, in immediately available funds, of all principal of and interest on the Bonds, when due, in the manner set forth in the resolution authorizing the issuance of this Bond adopted by the Board on August 17, 2023 (the "Bond Resolution"). Notwithstanding the foregoing, during any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, payments made to the securities depository, or its nominee, shall be made in accordance with arrangements between the Board and the securities depository. Terms used herein and not otherwise defined have the meanings given in the Bond Resolution.

* * *

##[FORM OF FIRST TWO PARAGRAPHS OF CAPITAL APPRECIATION BONDS]

NUMBER
CR-____
REGISTERED

MATURITY AMOUNT
\$_____
REGISTERED

BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM
REVENUE FINANCING SYSTEM BONDS, SERIES _____

<u>INTEREST RATE</u>	<u>MATURITY DATE</u>	<u>ISSUANCE DATE</u>	<u>CUSIP:</u>
_____%	_____, 20__	_____	_____

REGISTERED OWNER:

MATURITY AMOUNT: _____ DOLLARS

ON THE MATURITY DATE specified above, the BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM (the “Board”), being an agency and political subdivision of the State of Texas, hereby promises to pay to the Registered Owner specified above or the registered assignee hereof (either being hereinafter called the “Registered Owner”) the Maturity Amount specified above representing the original principal amount hereof and accrued and compounded interest hereon. Interest shall accrete on the original principal amount hereof from the Issuance Date at the interest rate per annum specified above (subject to rounding to the Compounded Amounts as provided in the Bond Resolution), compounded semi-annually on _____ and _____ of each year, commencing _____, 20__. For convenience of reference, a table appears on the back of this Bond showing the “Compounded Amount” of the original principal amount per \$5,000 Maturity Amount compounded semiannually at the yield shown on such table.

THE MATURITY AMOUNT OF this Bond is payable in lawful money of the United States of America, without exchange or collection charges, solely from funds of the Board required by the Bond Resolution to be on deposit with the Paying Agent/Registrar for such purpose as hereinafter provided. The Maturity Amount or Compounded Amount of this Bond shall be paid to the registered owner hereof upon presentation and surrender of this Bond at maturity or upon the date fixed for its redemption prior to maturity, as the case may be, at the corporate trust office of _____ in _____, which is the “Paying Agent/Registrar” for this Bond. The Board covenants with the registered owner of this Bond that on or before the Maturity Date for this Bond it will make available to the Paying Agent/Registrar, the amount required to provide for the payment, in immediately available funds, of the Maturity Amount when due, in the manner set forth in the resolution authorizing the issuance of this Bond adopted by the Board on August 17, 2023 (the “Bond Resolution”). Notwithstanding the foregoing, during any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, payments made to the securities depository, or its nominee, shall be made in accordance with

arrangements between the Board and the securities depository. Terms used herein and not otherwise defined have the meaning given in the Bond Resolution.

**[FORM OF REMAINDER OF CURRENT INTEREST BONDS
AND CAPITAL APPRECIATION BONDS]**

IF THE DATE for the payment of the principal of or interest on this Bond shall be a Saturday, a Sunday, a legal holiday, or a day on which banking institutions in The City of New York, New York, or in the city where the corporate trust office of the Paying Agent/Registrar is located are authorized by law or executive order to close, then the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day on which banking institutions are authorized to close; and payment on such date shall have the same force and effect as if made on the original date payment was due.

THIS BOND is one of an issue of Bonds dated _____, 20__, authorized by the Bond Resolution in the aggregate principal amount of \$_____ for the purpose of *[(i) refunding the Refunded Notes and the Refunded Bonds; (ii) providing \$_____ to pay the cost of acquiring, purchasing, constructing, improving, enlarging, and equipping the property and facilities of the Participants of the Revenue Financing System; and (iii) paying the costs related thereto], ##[and comprised of (i) Bonds in the aggregate principal amount of \$_____ that pay interest only at maturity (the "Capital Appreciation Bonds") and (ii) Bonds in the aggregate principal amount of \$_____ that pay interest semiannually until maturity (the "Current Interest Bonds")].

**On _____, or on any date thereafter, the Bonds scheduled to mature on _____, and thereafter may be redeemed prior to their scheduled maturities, at the option of the Board, with funds derived from any available and lawful source, as a whole, or in part, and, if in part, the particular Bonds, or portions thereof, to be redeemed shall be selected and designated by the Board (provided that a portion of a Bond may be redeemed only in an integral multiple of \$5,000), at a redemption price equal to _____ and accrued interest to date fixed for the redemption; provided, that during any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, if fewer than all of the Bonds of the same maturity and bearing the same interest rate are to be redeemed, the particular Bonds of such maturity and bearing such interest rate shall be selected in accordance with the arrangements between the Board and the securities depository.

**The Bonds of this issue scheduled to mature on _____ are subject to mandatory sinking fund redemption prior to their scheduled maturity and shall be redeemed by the Board, in part, prior to their scheduled maturity, with the particular Bonds or portions thereof to be redeemed to be selected and designated by the Board (provided that a portion of a Bond may be redeemed only in an integral multiple of \$5,000), at a redemption price equal to the par or principal amount thereof and accrued interest to the date of redemption, on the dates, and in the principal amounts, respectively, as set forth in the following schedule:

Bonds Maturing _____

Redemption Date

Principal Amount

**The principal amount of the Bonds required to be redeemed on each such redemption date pursuant to the foregoing operation of the mandatory sinking fund shall be reduced, at the option of the Board, by the principal amount of any Bonds, which, at least 45 days prior to the mandatory sinking fund redemption date, (1) shall have been acquired by the Board and delivered to the Paying Agent/Registrar for cancellation, or (2) shall have been acquired and canceled by the Paying Agent/Registrar at the direction of the Board, in either case of (1) or (2) at a price not exceeding the par or principal amount of such Bonds or (3) have been redeemed pursuant to the optional redemption provisions set forth above and not theretofore credited against a mandatory sinking fund redemption. During any period in which ownership of the Bonds is determined by a book entry at a securities depository for the Bonds, if fewer than all of the Bonds of the same maturity and bearing the same interest rate are to be redeemed, the particular Bonds of such maturity and bearing such interest rate shall be selected in accordance with the arrangements between the Board and the securities depository.

**AT LEAST 30 days prior to the date for any redemption of this Bond prior to maturity, a notice of such redemption also shall be sent by the Paying Agent/Registrar by United States mail, first-class postage prepaid, to the registered owner of each Bond, or portion thereof to be redeemed, at its address as it appeared on the Registration Books on the 45th day prior to such redemption date and to major securities depositories, national bond rating agencies, and bond information services; provided, however, that the failure to send, mail, or receive such notice, or any defect therein or in the sending or mailing thereof, shall not affect the validity or effectiveness of the proceedings for the redemption of any Bond. By the date fixed for any such redemption, due provision shall be made by the Board with the Paying Agent/Registrar for the payment of the required redemption price for this Bond or the portion hereof which is to be so redeemed, plus accrued interest thereon to the date fixed for redemption. If such notice of redemption is given, and if due provision for such payment is made, all as provided above, this Bond, or the portion thereof which is to be so redeemed, thereby automatically shall be redeemed prior to its scheduled maturity, and shall not bear interest after the date fixed for its redemption, and shall not be regarded as being outstanding except for the right of the registered owner to receive the redemption price plus accrued interest to the date fixed for redemption from the Paying Agent/Registrar out of the funds provided for such payment. The Paying Agent/Registrar shall record in the Registration Books all such redemptions of principal of this Bond or any portion hereof. If a portion of any Bond shall be redeemed, a substitute Bond or Bonds having the same maturity date, bearing interest at the same rate, in any denomination or denominations in any integral multiple of \$5,000, at the written request of the registered owner, and in an aggregate principal amount equal to the unredeemed portion thereof, will be issued to the registered owner upon the surrender thereof for cancellation, at the expense of the Board, all as provided in the Bond Resolution.

THIS BOND OR ANY PORTION OR PORTIONS HEREOF IN ANY AUTHORIZED DENOMINATION may be assigned and shall be transferred only in the Registration Books of the Board kept by the Paying Agent/Registrar acting in the capacity of registrar for the Bonds, upon the terms and conditions set forth in the Bond Resolution. Among other requirements for such assignment and transfer, this Bond must be presented and surrendered to the Paying

Agent/Registrar, together with proper instruments of assignment, in form and with guarantee of signatures satisfactory to the Paying Agent/Registrar, evidencing assignment of this Bond or any portion or portions hereof in any authorized denomination to the assignee or assignees in whose name or names this Bond or any such portion or portions hereof is or are to be transferred and registered. The Form of Assignment printed or endorsed on this Bond shall be executed by the registered owner, or its duly authorized attorney or representative, to evidence the assignment hereof. A new Bond or Bonds payable to such assignee or assignees (which then will be the new registered owner or owners of such new Bond or Bonds), or to the previous registered owner in the case of the assignment and transfer of only a portion of this Bond, may be delivered by the Paying Agent/Registrar in exchange for this Bond, all in the form and manner as provided in the next paragraph hereof for the exchange of other Bonds. The Board shall pay the Paying Agent/Registrar's standard or customary fees and charges, if any, for making such transfer or exchange as provided below, but the one requesting such transfer or exchange shall pay any taxes or other governmental charges required to be paid with respect thereto. The Paying Agent/Registrar shall not be required to make transfers of registration or exchange of this Bond or any portion hereof #[(i) with respect to Current Interest Bonds,] during the period commencing with the close of business on any Record Date and ending with the opening of business on the next following principal or interest payment date, or, (ii) with respect to any Bond or any portion thereof called for redemption prior to maturity, within 45 days prior to its redemption date. The registered owner of this Bond shall be deemed and treated by the Board and the Paying Agent/Registrar as the absolute owner hereof for all purposes, including payment and discharge of liability upon this Bond to the extent of such payment, and, to the extent permitted by law, the Board and the Paying Agent/Registrar shall not be affected by any notice to the contrary.

ALL BONDS OF THIS SERIES are issuable solely as fully registered bonds, without interest coupons, #[(with respect to the Current Interest Bonds,] in the denomination of any integral multiple of \$5,000 ##[, with respect to Capital Appreciation Bonds, in the denomination of \$5,000 Maturity Amounts or any integral multiple thereof.] As provided in the Bond Resolution, this Bond may, at the request of the registered owner or the assignee or assignees hereof, be exchanged for a like aggregate principal amount of fully registered bonds, without interest coupons, payable to the appropriate registered owner, assignee, or assignees, as the case may be, having the same maturity date, in the same form, and bearing interest at the same rate, in any authorized denomination as requested in writing by the appropriate registered owner, assignee, or assignees, as the case may be, upon surrender of this Bond to the Paying Agent/Registrar for cancellation, all in accordance with the form and procedures set forth in the Bond Resolution. Whenever the beneficial ownership of this Bond is determined by a book entry at a securities depository for the Bonds, the foregoing requirements of holding, delivering, or transferring this Bond shall be modified to require the appropriate person or entity to meet the requirements of the securities depository as to registering or transferring the book entry to produce the same effect.

IN THE EVENT any Paying Agent/Registrar for the Bonds is changed by the Board, resigns, or otherwise ceases to act as such, the Board has covenanted in the Bond Resolution that it promptly will appoint a competent and legally qualified substitute therefor, and promptly will cause written notice thereof to be mailed to the registered owners of the Bonds.

IT IS HEREBY certified, recited, and covenanted that this Bond has been duly and validly authorized, issued, and delivered; that all acts, conditions, and things required or proper to be

performed, exist, and be done precedent to or in the authorization, issuance, and delivery of this Bond have been performed, existed, and been done in accordance with law; that the Series of Bonds of which this Bond is one constitute Parity Obligations under the Master Resolution; and that the interest on and principal of this Bond, together with the other Bonds of this Series and the other outstanding Parity Obligations are equally and ratably secured by and payable from a lien on and pledge of the Pledged Revenues, subject only to the provisions of Prior Encumbered Obligations, if any.

THE BOARD has reserved the right, subject to the restrictions referred to in the Bond Resolution, (i) to issue additional Parity Obligations which also may be secured by and made payable from a lien on and pledge of the aforesaid Pledged Revenues, in the same manner and to the same extent as this Bond, and (ii) to amend the provisions of the Bond Resolution under the conditions provided in the Bond Resolution.

THE REGISTERED OWNER hereof shall never have the right to demand payment of this Bond or the interest hereon out of any funds raised or to be raised by taxation or from any source whatsoever other than specified in the Bond Resolution.

BY BECOMING the registered owner of this Bond, the registered owner thereby acknowledges all of the terms and provisions of the Bond Resolution, agrees to be bound by such terms and provisions, acknowledges that the Bond Resolution is duly recorded and available for inspection in the official minutes and records of the Board, and agrees that the terms and provisions of this Bond and the Bond Resolution constitute a contract between each registered owner hereof and the Board.

IN WITNESS WHEREOF, the Board has caused this Bond to be signed with the manual or facsimile signature of the Chairman or Vice Chairman of the Board and countersigned with the manual or facsimile signature of the Executive Director, Board of Regents, and has caused the official seal of the Board to be duly impressed, or placed in facsimile, on this Bond.

(signature)

Executive Director, Board of
Regents of The Texas A&M
University System

(signature)

[Vice] Chairman, Board of
Regents of The Texas A&M
University System

(BOARD SEAL)

- * The use of proceeds provisions shall be conformed to the purposes referenced in the Award Certificate.
- ** The redemption provisions shall be conformed to the language relating to redemption in the Award Certificate. Provisions of Bonds related to redemption are to be deleted if the Bonds are not subject to redemption. Any inconsistencies in such provisions shall be resolved in favor of the Award Certificate.
- # For inclusion in Current Interest Bonds if some of the Bonds are issued as Capital Appreciation Bonds.
- ## For inclusion in Capital Appreciation Bonds.

[INSERTIONS FOR THE INITIAL BONDS]

The Initial Current Interest Bond shall be in the form set forth in this exhibit, except that:

- A. Immediately under the name of the Bond, the headings “INTEREST RATE” and “MATURITY DATE” shall both be completed with the words “As shown below”, and the heading “CUSIP NO.” shall be deleted.
- B. The first paragraph of the Bond shall be deleted and the following will be inserted (with all blanks and bracketed items to be completed with information contained in the Award Certificate):

“The BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY (the “Board”), being an agency of the State of Texas, hereby promises to pay to the registered owner specified above or the registered assignee hereof (either being hereinafter called the “registered owner”) on _____ in each of the years in the principal installments and bearing interest at the per annum rates set forth in the following schedule:

<u>Principal</u> <u>Installments</u>	<u>Years of</u> <u>Stated Maturities</u>	<u>Interest</u> <u>Rates</u>
---	---	---------------------------------

(Information from Award Certificate to be inserted)

The Board promises to pay interest on the unpaid principal amount hereof from the [Dated Date] [Issuance Date] specified above at the respective per annum rate of interest specified above, calculated on the basis of a 360-day year composed of twelve 30-day months, to the Maturity Date specified above, or the date of redemption prior to maturity; with interest being payable on _____, 20__, and semi-annually on each _____ and _____ thereafter, except that if the date of authentication of this Bond is later than the first Record Date (hereinafter defined), such principal amount shall bear interest from the interest payment date next preceding the date of authentication, unless such date of authentication is after any Record Date but on or before the next following interest payment date, in which case such principal amount shall bear interest from such next following interest payment date.”

C. The Initial Bond shall be numbered "T-I".

The Initial Capital Appreciation Bond shall be in the form set forth in this exhibit, except that:

- A. Immediately under the name of the Bond, the headings "INTEREST RATE" and "MATURITY DATE" shall both be completed with the words "As shown below", and the heading "CUSIP NO." shall be deleted.
- B. The first paragraph of the Bond shall be deleted and the following will be inserted (with all blanks and bracketed items to be completed with information contained in the Award Certificate):

"The BOARD OF REGENTS OF THE TEXAS A&M UNIVERSITY SYSTEM (the "Board"), being an agency of the State of Texas, hereby promises to pay to the registered owner specified above or the registered assignee hereof (either being hereinafter called the "registered owner") on _____ in each of the years in the Maturity Amounts and bearing interest at the per annum rates set forth in the following schedule:

Maturity
Amounts

Years of
Stated Maturities

Interest
Rates

(Information from Award Certificate to be inserted)

Interest shall accrete on the original principal amount hereof from the Issuance Date at the interest rate per annum specified above (subject to rounding to the Compounded Amounts as provided in the Bond Resolution), compounded semi-annually on _____ and _____ of each year, commencing _____, 20____. For convenience of reference, a table appears on the back of this Bond showing the "Compounded Amount" of the original principal amount per \$5,000 Maturity Amount compounded semiannually at the yield shown on such table."

C. The Initial Capital Appreciation Bond shall be numbered "CT-I".

* * *

TABLE OF ACCRETED VALUES [FOR CAPITAL APPRECIATION BONDS]

The Accreted Value, initial offering price (all per \$5,000 of Maturity Amount), together with the yield to maturity are as follows. Accreted Values are calculated based on the initial offering price and yield to maturity and, except at maturity, do not equal principal amount plus accrued interest.

FORM OF PAYING AGENT/REGISTRAR'S AUTHENTICATION CERTIFICATE

PAYING AGENT/REGISTRAR'S AUTHENTICATION CERTIFICATE

It is hereby certified that this Bond has been issued under the provisions of the Bond Resolution described in this Bond and that this Bond has been issued in conversion of and exchange for or replacement of a bond, bonds, or a portion of a bond or bonds of an issue which originally was approved by the Attorney General of the State of Texas and registered by the Comptroller of Public Accounts of the State of Texas.

[_____] , as
Paying Agent/Registrar

Dated: _____

By: _____
Authorized Representative

Address: _____

FORM OF REGISTRATION CERTIFICATE
OF THE COMPTROLLER OF PUBLIC ACCOUNTS

COMPTROLLER'S REGISTRATION CERTIFICATE

REGISTER NO.

I hereby certify that this Bond has been examined, certified as to validity, and approved by the Attorney General of the State of Texas, and that this Bond has been registered by the Comptroller of Public Accounts of the State of Texas.

Witness my signature and seal this

(COMPTROLLER'S SEAL)

Comptroller of Public Accounts of the State
of Texas

FORM OF ASSIGNMENT

ASSIGNMENT

The following abbreviations, when used in the inscription on the face of this Bond, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM --	as tenants in common	UNIF GIFT MIN ACT --
TEN ENT --	as tenants by the entireties	Custodian
JT TEN --	as joint tenants with rights of survivorship and not as tenants in common	(Cust) (Minor)
		under Uniform Gifts to Minors Act
		(State)

Additional abbreviations may also be used though not in the above list.

FOR VALUE RECEIVED, the undersigned sells, assigns and transfers unto

Please insert Social Security or

Other Identification Number of Assignee
/ _____ /

(Name and Address of Assignee)

the within Bond and does hereby irrevocably constitutes and appoints

_____ to transfer said Bond on the books kept for registration thereof with full power of substitution in the premises.

Dated: _____

Signature Guaranteed: _____

NOTICE: The signature to this assignment must correspond with the name as it appears upon the face of the within Bond in every particular, without alteration or enlargement or any change whatever; and

NOTICE: Signature(s) must be guaranteed by the Securities Transfer Association signature guarantee program.

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Tuition and Fee Commitment for 2023-24 and 2024-25 Academic Years

Proposed Board Action:

Commitment by The Texas A&M University System Board of Regents to maintain resident undergraduate academic costs, including tuition, mandatory academic fees, all academic-related general fees, and college course fees, frozen for the 2023-24 and 2024-25 academic years.

Background Information:

The Texas Education Code provides guidance on all student tuition, fees and charges allowable for collection by institutions of higher education. In addition, A&M System Policy [26.01, Tuition and Fees](#), requires the Board of Regents' approval regarding any proposed new fees and any adjustments in current student tuition and fees for the ensuing academic year.

Due to the unprecedented revenue surplus for the state of Texas, it is the intent of the Legislature that certain institutions of higher education may receive additional state funding as part of the State of Texas' Higher Education Affordability initiative.

As part of this initiative, allocation of the additional state funding is contingent on the adoption of policies to maintain total resident undergraduate academic costs, including tuition, mandatory academic fees, all academic-related general fees, and college course fees at currently approved levels for the next two academic years and submission to the Legislative Budget Board of a letter from the Board of Regents certifying that the above policies have been met by September 1, 2023. In addition, this commitment will be posted on each student's tuition and fee statement.

The adoption of this minute order will be included in the letter to the Legislative Budget Board.

A&M System Funding or Other Financial Implications:

Additional funding provided by the Texas Legislature as a result of the Higher Education Affordability initiative is contingent upon the approval of this minute order.

Strategic Plan Imperative(s) this Item Advances:

This agenda item is relevant to the advancement of all the imperatives of the Strategic Plan.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
Office of the Deputy Chancellor and Chief Financial Officer
June 30, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Tuition and Fee Commitment for 2023-24 and 2024-25 Academic Years

I recommend adoption of the following minute order:

“As a result of actions taken by the Texas Legislature to address affordability in higher education, all resident undergraduate academic costs, including tuition, mandatory academic fees, all academic-related general fees, and college course fees, have been frozen for the 2023-24 and 2024-25 academic years.”

Respectfully submitted,

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

Approved for Legal Sufficiency:

John Sharp
Chancellor

Ray Bonilla
General Counsel

Agenda Item No. 2.1

**THE BOARD OF REGENTS
THE TEXAS A&M UNIVERSITY SYSTEM**
July 11, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of System Internal Audit Plan for Fiscal Year 2024

The Committee on Audit recommends adoption of the following minute order:

“The Board of Regents of The Texas A&M University System hereby approves the System Internal Audit Plan for Fiscal Year 2024, a copy of which is attached to the official minutes.”

Respectfully submitted,

Mike Hernandez
Chairman, Committee on Audit

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel



THE TEXAS A&M UNIVERSITY SYSTEM

System Internal Audit Department

Fiscal Year 2024 Audit Plan



System Internal Audit Department Fiscal Year 2024 Audit Plan

SYSTEMWIDE

Diversity, Equity and Inclusion Compliance

A&M SYSTEM OFFICES

Facilities Planning and Construction

TEXAS A&M UNIVERSITY

College of Arts and Sciences – Information Technology

Export Controls

Payment Cards

Recreational Sports

School of Law – Information Technology

School of Medicine Anatomical Gift Program

University Health Services

PRAIRIE VIEW A&M UNIVERSITY

Athletics

Health and Counseling Services

Tuition and Fees

TARLETON STATE UNIVERSITY

Health and Safety

Texas Higher Education Coordinating Board Construction Audit Reporting *

TEXAS A&M INTERNATIONAL UNIVERSITY

Tuition and Fees

TEXAS A&M UNIVERSITY–CENTRAL TEXAS

Information Technology

TEXAS A&M UNIVERSITY–COMMERCE

Programs for Minors

TEXAS A&M UNIVERSITY–CORPUS CHRISTI

Programs for Minors



**System Internal Audit Department
Fiscal Year 2024 Audit Plan**

TEXAS A&M UNIVERSITY–KINGSVILLE

Programs for Minors
Tuition and Fees

TEXAS A&M UNIVERSITY–SAN ANTONIO

Information Technology
Tuition and Fees

TEXAS A&M UNIVERSITY–TEXARKANA

Financial Management Services
Information Technology

WEST TEXAS A&M UNIVERSITY

Financial Accounting System

TEXAS A&M AGRILIFE RESEARCH

Financial Management Services

TEXAS A&M AGRILIFE EXTENSION

Financial Management Services
Programs for Minors

TEXAS A&M ENGINEERING EXPERIMENT STATION

Contract Administration
Payroll

TEXAS A&M ENGINEERING EXTENSION SERVICE

Information Technology
Payroll

TEXAS A&M TRANSPORTATION INSTITUTE

Payroll

TEXAS A&M VETERINARY MEDICAL DIAGNOSTIC LABORATORY

Financial Management Services



System Internal Audit Department Fiscal Year 2024 Audit Plan

TEXAS DIVISION OF EMERGENCY MANAGEMENT

State Disaster Reimbursement

- * This audit will be performed to fulfill requirements of the Texas Higher Education Coordinating Board's (THECB) Facility Audit Protocol for the members selected by THECB for FY 2024 facilities audits.



System Internal Audit Department Fiscal Year 2024 Audit Plan

The purpose of the audit plan is to outline audits and other activities the System Internal Audit Department will conduct during fiscal year 2024. The plan is developed to satisfy responsibilities established by the Board of Regents Bylaws, System Policy 10.01, *Internal Auditing*, Texas Government Code Section 2102.008, and applicable auditing standards. The chief auditor is authorized to make changes to the plan to address changes in identified risks. The Committee on Audit and the chancellor will be notified of any significant additions, deletions, or other changes to the audit plan. Deliverables for planned audits may include audit reports, technical assistance, data analysis, and other written and oral communications.

The specific scope of each audit will be determined once the audit team has completed the planning process for the audit. This process includes consideration of the governance, risk management, and control processes that provide reasonable assurance that:

- Risks relating to the achievement of the system's strategic objectives are appropriately identified and managed.
- The actions of the system's officers, directors, employees, and contractors are in compliance with the system's policies, procedures, and applicable laws, regulations, and governance standards.
- The results of operations or programs are consistent with established goals and objectives.
- Operations or programs are being carried out effectively and efficiently.
- Established processes and systems enable compliance with the policies, procedures, laws, and regulations that could significantly impact the system.
- Information and the means used to identify, measure, analyze, classify, and report such information are reliable and have integrity.
- Resources and assets are acquired economically, used efficiently, and protected adequately.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Approval of System Capital Plan for FY 2024 – FY 2028

Proposed Board Action:

Approve the System Capital Plan for FY 2024 – FY 2028.

Background Information:

Members of The Texas A&M University System each prepare a five-year capital plan as part of the overall planning process. These plans are then compiled into a system capital plan. The system capital plan includes all Revenue Financing System (RFS) and Permanent University Fund (PUF)-financed projects, repair/renovation projects costing \$4 million or more, new construction/addition projects costing \$4 million or more, and real property acquisitions costing more than \$1 million. Both the CEO and CFO of each system member have certified the information included in the system member's capital plan including the adequacy of the debt repayment revenue resources.

Per System Policy *51.01 Capital Planning*, the five-year capital plan for The Texas A&M University System is being presented to the Board of Regents for approval.

The \$4.8 billion system capital plan includes \$3.2 billion of previously approved projects that are either in design or construction. After cumulative expenditures of \$538.7 million through May 2023, the remaining balance to be expended on approved projects is \$2.7 billion. The system capital plan also includes \$1.6 billion in proposed future projects including \$674.9 million of RFS debt projects, \$129.4 million of PUF debt projects, and \$804.9 million of projects to be funded by cash sources including the Available University Fund (AUF), Higher Education Fund (HEF), interest income, federal grants, designated tuition, gifts, student fees, auxiliary enterprise funds, general revenue, and other local funds.

Prior to inclusion on the capital plan for FY 2024, projects have completed the preparation of the Program of Requirements (unless otherwise noted on the plan). Board approval of the system capital plan for FY 2024 – FY 2028 will constitute approval for initiation of the proposed projects indicated to start in FY 2024 along with approval of the identified funding sources and will authorize the appropriation of up to 10 percent of the planning amounts indicated for the FY 2024 projects for pre-construction activities. Pre-construction activities include work of the Architect/Engineer Design Team, design assistance from a Design-Build Contractor or Construction Manager at Risk, environmental surveys, site surveys, building and site demolition work, and any other activities required to design the project. In addition, approval will authorize the completion of FY 2024 minor construction, rehabilitation/renovation, and equipment/software procurement projects including the appropriation of PUF and RFS debt proceeds where indicated.

FY 2024 proposed projects total \$614.3 million and include \$124.8 million of RFS debt projects, \$80.7 million of PUF debt projects, and \$408.8 million of projects to be funded by cash sources

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Agenda Item Briefing

including AUF, HEF, interest income, federal grants, designated tuition, gifts, auxiliary enterprise funds, general revenue, and other local funds.

The initiated projects will be presented to the board for approval of construction when a scope and budget are more defined, prior to any construction contract award.

A&M System Funding or Other Financial Implications:

The board's approval of the system capital plan for FY 2024 – FY 2028 will authorize the appropriation of up to 10 percent of the planning amounts for FY 2024 proposed projects for pre-construction activities. As presented, requested appropriations for proposed FY 2024 projects would total up to \$61.4 million. In addition, the board's approval authorizes appropriation of PUF and RFS funds for the completion of FY 2024 minor construction, rehabilitation/renovation, equipment/software procurement, and other projects to be administered by the institutions or System Facilities Planning and Construction.

Strategic Plan Imperative(s) this Item Advances:

This item advances Strategic Plan Imperative 6, which provides that "The A&M System, in adhering to the high standard of excellence and growth required in this strategic plan, will display prudent financial stewardship and sustainability."

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
FACILITIES PLANNING AND CONSTRUCTION
Office of the Deputy Chancellor and Chief Financial Officer
July 13, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of System Capital Plan for FY 2024 – FY 2028

I recommend adoption of the following minute order:

“The system capital plan for FY 2024 – FY 2028, as shown in the attached exhibit is approved and authorization to appropriate up to 10 percent of the planning amount indicated for all FY 2024 proposed projects is granted.

In addition, the appropriation of PUF and RFS funding is approved for FY 2024 minor construction, rehabilitation/renovation, and equipment/software procurement projects administered by the institutions or System Facilities Planning and Construction.

The Board of Regents of The Texas A&M University System (board) reasonably expects to incur debt in one or more obligations for these projects, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

To the extent that the system capital plan identifies projects for financing through the issuance of parity obligations secured by and payable from revenues of the Revenue Financing System, and as required by Section 5(a) of the Master Resolution of the Revenue Financing System, the board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient pledged revenues to satisfy the annual debt service requirements of the Revenue Financing System and to meet all financial obligations of the board relating to the Revenue Financing System and that the Participants, on whose behalf the

Agenda Item No.
July 13, 2023

parity obligations are issued, possess the financial capacity to satisfy their direct obligations after taking into account such proposed additional Revenue Financing System parity obligations as are identified in the system capital plan.”

Respectfully submitted,

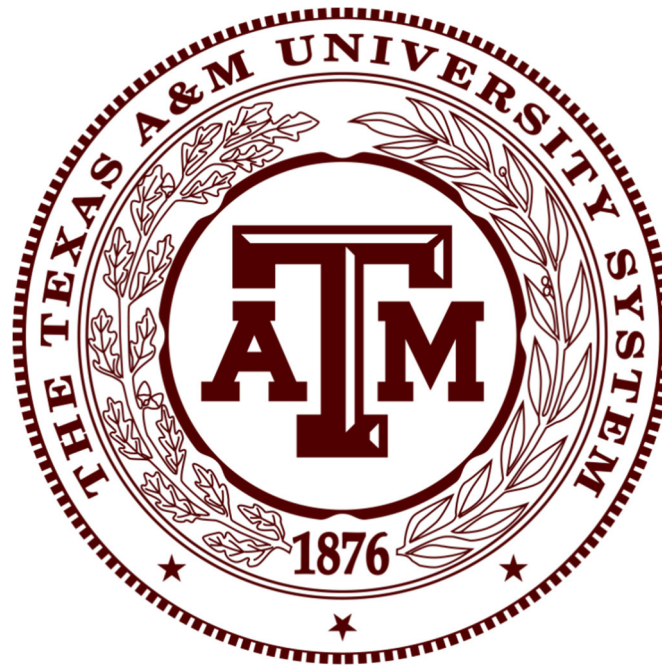
Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

John Sharp
Chancellor

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel



FY 2024 – FY 2028
Capital Plan
August 2023

EXECUTIVE SUMMARY

Members of The Texas A&M University System each prepare a five-year capital plan as part of the overall planning process. These plans are then compiled into a System Capital Plan. Both the CEO and CFO of each system member certify the information included in the system member's capital plan including the adequacy of the debt repayment revenue sources.

The \$4.8 billion System Capital Plan includes \$3.2 billion of previously approved projects that are either in design or under construction and \$1.6 billion in proposed future projects, which include over \$470 million of projects funded by the state. After cumulative expenditures through May 2023 of \$538.7 million, the remaining balance to be expended on approved projects is \$2.7 billion. Included in the proposed future projects are \$674.9 million of Revenue Financing System debt projects, \$129.4 million of Permanent University Fund debt projects, and \$804.9 million of projects to be funded by cash sources including the Available University Fund, Higher Education Fund, interest income, federal grants, designated tuition, gifts, student fees, auxiliary enterprise funds, general revenue, and other local funds.

Fiscal year 2024 proposed projects total \$614.3 million and include \$124.8 million of RFS debt projects, \$80.7 million of PUF debt projects, and \$408.8 million of projects to be funded by cash sources including AUF, HEF, interest income, federal grants, designated tuition, gifts, student fees, auxiliary enterprise funds, general revenue, and other local funds.

<p align="center">THE TEXAS A&M UNIVERSITY SYSTEM</p> <p align="center">CAPITAL PLAN</p> <p align="center">FY 2024 - FY 2028</p>

System Member	Previously Approved Projects	Proposed Projects	Total Project Planning Amounts
Texas A&M University	687,498,592	886,957,470	1,574,456,062
Texas A&M University at Galveston	166,492,125	2,500,000	168,992,125
Texas A&M Health Science Center	267,382,031	30,000,000	297,382,031
Prairie View A&M University	64,405,833	32,893,000	97,298,833
Tarleton State University	402,164,975	130,000,000	532,164,975
Texas A&M University - Corpus Christi	134,162,433	21,000,000	155,162,433
Texas A&M International University	77,420,000	-	77,420,000
Texas A&M University - Kingsville	47,922,833	5,000,000	52,922,833
West Texas A&M University	62,102,333	9,975,000	72,077,333
Texas A&M University - Texarkana	51,352,985	-	51,352,985
Texas A&M University - Commerce	122,422,833	99,900,000	222,322,833
Texas A&M University - Central Texas	53,411,615	12,400,000	65,811,615
Texas A&M University - San Antonio	156,889,891	71,928,856	228,818,747
Texas A&M AgriLife Research	121,471,216	137,900,000	259,371,216
Texas A&M AgriLife Extension Service	5,542,000	-	5,542,000
Texas A&M Forest Service	12,659,741	-	12,659,741
Texas A&M Engineering Experiment Station	109,569,642	30,000,000	139,569,642
Texas A&M Engineering Extension Service	33,945,000	25,300,000	59,245,000
Texas A&M Transportation Institute	2,515,753	-	2,515,753
System Offices	200,265,000	100,000,000	300,265,000
RELLIS	64,452,356	13,500,000	77,952,356
Texas Division of Emergency Management	393,873,400	-	393,873,400
	<u>3,237,922,587</u>	<u>1,609,254,326</u>	<u>4,847,176,913</u>

<p align="center">THE TEXAS A&M UNIVERSITY SYSTEM</p> <p align="center">CAPITAL PLAN</p> <p align="center">FY 2024 - FY 2028</p>

System Member	Total Project Planning Amounts	Cumulative Prior Years Expenditures to 05/31/2023	Remaining Planning Amounts
Texas A&M University	1,574,456,062	207,182,011	1,367,274,051
Texas A&M University at Galveston	168,992,125	9,669,786	159,322,339
Texas A&M Health Science Center	297,382,031	8,975,215	288,406,816
Prairie View A&M University	97,298,833	3,024,923	94,273,910
Tarleton State University	532,164,975	72,140,499	460,024,476
Texas A&M University - Corpus Christi	155,162,433	6,348,014	148,814,419
Texas A&M International University	77,420,000	2,520,153	74,899,847
Texas A&M University - Kingsville	52,922,833	1,000,309	51,922,524
West Texas A&M University	72,077,333	2,152,163	69,925,170
Texas A&M University - Texarkana	51,352,985	1,003,255	50,349,730
Texas A&M University - Commerce	222,322,833	2,660,211	219,662,622
Texas A&M University - Central Texas	65,811,615	2,789,072	63,022,543
Texas A&M University - San Antonio	228,818,747	58,464,114	170,354,633
Texas A&M AgriLife Research	259,371,216	11,624,804	247,746,412
Texas A&M AgriLife Extension Service	5,542,000	2,382,578	3,159,422
Texas A&M Forest Service	12,659,741	1,714,872	10,944,869
Texas A&M Engineering Experiment Station	139,569,642	56,747,705	82,821,937
Texas A&M Engineering Extension Service	59,245,000	23,707,097	35,537,903
Texas A&M Transportation Institute	2,515,753	1,166,473	1,349,280
System Offices	300,265,000	29,310,459	270,954,541
RELLIS	77,952,356	4,906,891	73,045,465
Texas Division of Emergency Management	393,873,400	29,208,577	364,664,823
	<u>4,847,176,913</u>	<u>538,699,181</u>	<u>4,308,477,732</u>

<p align="center">THE TEXAS A&M UNIVERSITY SYSTEM</p> <p align="center">CAPITAL PLAN</p> <p align="center">PROPOSED PROJECTS - FISCAL YEAR 2024</p>
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System Member	Planning Amounts	Resource Allocation		
		PUF Debt Proceeds	RFS Debt Proceeds	Other
Texas A&M University	302,507,000	36,000,000	66,507,000	200,000,000
Texas A&M University at Galveston	2,500,000			2,500,000
Texas A&M Health Science Center	25,000,000			25,000,000
Prairie View A&M University	13,700,000			13,700,000
Tarleton State University	10,000,000		10,000,000	
Texas A&M University - Corpus Christi	21,000,000		13,000,000	8,000,000
Texas A&M University - Commerce	17,500,000		13,500,000	4,000,000
Texas A&M University - Central Texas	2,400,000	2,400,000		
Texas A&M University - San Antonio	36,928,856	13,000,000	11,802,500	12,126,356
Texas A&M AgriLife Research	14,000,000	1,340,000	10,000,000	2,660,000
Texas A&M Engineering Experiment Station	30,000,000			30,000,000
Texas A&M Engineering Extension Service	25,300,000	15,000,000		10,300,000
System Offices	100,000,000			100,000,000
RELLIS	13,500,000	13,000,000		500,000
	<u>614,335,856</u>	<u>80,740,000</u>	<u>124,809,500</u>	<u>408,786,356</u>

THE TEXAS A&M UNIVERSITY SYSTEM
Capital Plan

Funding Codes

a	Available University Fund
b	Gifts
c	Contracts and Grants
e	E&G Unrestricted
f	Federal Funds
g	Designated Tuition
h	Housing Revenues
n	General Revenue
o	Other
p	Parking
r	Recreational Sports Fees
s	Student Fees
t	Capital Construction Assistance Project
u	Utility
v	Stadium Revenue Funds
w	Higher Education Funds
x	Auxiliary Enterprise Funds
y	Indirect Cost Recoveries

TEXAS A&M UNIVERSITY
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
2-3272		Instructional Laboratory & Innovative Learning Building (ILSQ)	100,059,818	20,000,000	80,000,000 g	59,818 u	91,097,324
2-3279		Business Education Complex	84,197,309	54,000,000	14,378,795 b	15,818,514 o,g,s	18,588,944
2-3343		Bright Area Development	235,735,550		155,000,000 o,b	80,735,550 o,b,v	78,340,896
2-3345		CUP Generator Replacement	26,500,000		26,500,000 u		553,659
		* Clinical Veterinary Teaching & Research Complex	175,000,000	69,897,111	56,153,542 t	48,949,347 b,g,a	-
		Utility Plant Control Upgrade	7,500,000		7,500,000 u		5,008,426
		HVAC System Walton Hall	8,794,068		8,794,068 h		1,602,427
		Interior Finishes Renovations Dunn Hall Phase I	6,095,540			6,095,540 h	382,474
		CUP Structural Repairs	6,700,000		6,700,000 u		251,699
		Interior Finishes Renovations Dunn Hall Phase II	6,947,609			6,947,609 h	174,825
		Outdoor Competition Throws and Warmup Track	9,250,000			9,250,000 v	-
		Physical Plant Projects/Equipment/Other	20,718,698	12,334,171	8,384,527		11,181,337
		Total Construction/Acquisitions in Progress	687,498,592	156,231,282	363,410,932	167,856,378	207,182,011

* CCAP project will not move forward until POR is complete and funding is finalized.

TEXAS A&M UNIVERSITY
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
PROPOSED PROJECTS							
	2024	Bright Area Development (Addition)	2,000,000		2,000,000	p	
	2024	** Space Collaboration Facility (Houston)	200,000,000				200,000,000 n
	2024	Davis-Gary Hall HVAC Renovations	9,218,500		9,218,500	h	
	2024	Moses Hall HVAC Renovations	9,218,500		9,218,500	h	
	2025	*** Doherty Building Renovations	38,000,000	4,700,000	3,500,000	y	29,800,000 s,g
	2025	Domestic Water Loop Extension	5,000,000		5,000,000	u	
	2025	HVAC System Hart Hall	9,450,470		9,450,470	h	
	2025	Collections Storage Warehouse #1	10,000,000				10,000,000 g
	2025	Wastewater Treatment Plant (WWTP) Improvements	12,000,000		12,000,000	u	
	2025	West Campus Player Development Center & Ellis Field Renovations	25,000,000		25,000,000	v	
	2025	Satellite Utility Plant 1 (SUP1) Expansion	30,000,000		30,000,000	u	
	2025	Academic Building Renovations	35,000,000	9,000,000			26,000,000 a
	2025	Entrepreneurship Building	65,000,000				65,000,000 b
	2025	Visualization, Fine and Performing Arts Building	295,000,000		128,000,000	g	167,000,000 b
	2026	Olsen Field at Blue Bell Park Renovations	60,000,000		60,000,000	v	
		Physical Plant Projects/Equipment/Other	82,070,000	36,000,000	46,070,000		
		Total Proposed Construction/Acquisitions	886,957,470	49,700,000	339,457,470		497,800,000
TOTAL CAPITAL PLAN			1,574,456,062	205,931,282	702,868,402		665,656,378
							207,182,011

** Project will not move forward until POR is complete.

*** TEES will provide \$3.7 million PUF and \$3.5 million IDC to fund this project.

TEXAS A&M UNIVERSITY at GALVESTON
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
		ESCO 2021 (Energy Savings Projects)	8,000,000		8,000,000		7,411,432
10-3353		Infrastructure, Dock Improvements and Ship FF&E - Ph I	35,000,000			35,000,000	2,258,354
10-3354		Infrastructure, Dock Improvements and Ship FF&E - Ph II	72,500,000			72,500,000	-
10-3381		* Engineering Classroom & Research Building	50,992,125		33,692,125	17,300,000	-
		Total Construction/Acquisitions in Progress	166,492,125	-	41,692,125	124,800,000	9,669,786
PROPOSED PROJECTS							
		Physical Plant Projects/Equipment/Other	2,500,000			2,500,000	-
		Total Proposed Construction/Acquisitions	2,500,000	-	-	2,500,000	-
TOTAL CAPITAL PLAN			168,992,125	-	41,692,125	127,300,000	9,669,786

* TAMU will provide \$14.3 million AUF to fund this project.

TEXAS A&M HEALTH SCIENCE CENTER
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
23-3320		* Texas A&M University TMC3 Biomedical Research Bldg (Houston)	100,000,000	30,102,889	69,897,111 t		-
23-3374		** Nursing Education & Research Center (McAllen)	49,948,556		29,948,556 t	20,000,000 a,b,g	517,126
23-3399		EnMed Discovery Tower Labs & Offices Buildout - Ph I (Houston)	15,000,000			15,000,000 a,o	-
23-3400		School of Dentistry Main Building Renovations (Dallas)	22,400,000	7,890,000		14,510,000 o,g,b	-
23-3412		ESCO 2023	14,745,526	14,745,526			-
		Physical Plant Projects/Equipment/Other	65,287,949	65,287,949			8,458,089
		Total Construction/Acquisitions in Progress	267,382,031	118,026,364	99,845,667	49,510,000	8,975,215
PROPOSED PROJECTS							
	2024	*** Health Education and Research Building (McAllen)	25,000,000			25,000,000 n	
	2025	Alkek Building Roof & Exhaust Fan Replacement (Houston)	5,000,000	5,000,000			
		Total Construction/Acquisitions	30,000,000	5,000,000	-	25,000,000	-
TOTAL CAPITAL PLAN			297,382,031	123,026,364	99,845,667	74,510,000	8,975,215

- * CCAP project will not move forward until POR is complete and funding is finalized.
** TAMU will provide \$15 million AUF to fund this project.
*** Project will not move forward until POR is complete.

PRAIRIE VIEW A&M UNIVERSITY
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
5-3370		Fire Alarm System Replacements PH2	11,002,000		11,002,000	g,s,x	215,538
5-3380		* Teaching & Academic Student Support Services Facility	44,922,833		44,922,833	t	-
		Physical Plant Projects/Equipment/Other	8,481,000	8,481,000			2,809,385
		Total Construction/Acquisitions in Progress	64,405,833	8,481,000	55,924,833	-	3,024,923
PROPOSED PROJECTS							
	2025	Harrington Science Renovations	13,293,000			13,293,000	a,g
		Physical Plant Projects/Equipment/Other	19,600,000			19,600,000	
		Total Proposed Construction/Acquisitions	32,893,000	-	-	32,893,000	-
TOTAL CAPITAL PLAN			97,298,833	8,481,000	55,924,833	32,893,000	3,024,923

* CCAP project will not move forward until POR is complete and funding is finalized.

Unfunded Capital Needs:

2026	EE O'Banion Building Improvements	30,000,000
2026	Hobart Taylor Expansion	53,380,000
2026	SR Collins Renovations - Transportation Center	19,915,850
2026	SR Collins Data Center & Deferred Maintenance	11,900,000
2026	Texas Institute for Preservation of History & Culture Museum	3,500,000
2026	Greenhouse 5	6,000,000
2026	Campus Infrastructure Support	8,000,000
2026	Wilson/Gilchrist Renovations	45,000,000
2026	Utility Plant Expansion/Deferred Maintenance & Gas line	96,808,000
2026	Instructional Laboratory & Advanced Research Building	130,000,000
2027	University Event Center	8,000,000
2027	Innovation & Commercialization Center for Entrepreneurs	10,000,000
2027	Headhouse & Greenhouse #6 & 7	15,000,000

TARLETON STATE UNIVERSITY
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023		
				PUF Debt Proceeds	RFS Debt Proceeds	Other			
APPROVED PROJECTS									
04-3264		Aquatics Center	11,307,950		10,307,950	s,p	1,000,000	s	9,968,258
04-3340		ESCO 2021 (Energy Savings Projects)	13,084,947		12,131,195	o	953,752	g	10,677,695
04-3281		*/** Interprofessional Education Building	66,000,000	66,000,000					18,704,612
04-3326		Parking Garage	41,000,000		40,000,000	p	1,000,000	x	3,754,788
04-3360		** Health Sciences & Human Services Building - Stephenville	80,000,000		80,000,000	t			624,511
04-3361		Dick Smith Library Renovations & Expansion	9,500,000	9,500,000					-
04-3396		Convocation Center	110,000,000		110,000,000	o,s			2,220,951
		Research Administration Building	7,000,000	7,000,000					395,326
		Physical Plant Projects/Equipment/Other	64,272,078	41,862,605	22,409,473				25,794,358
		Total Construction/Acquisitions in Progress	402,164,975	124,362,605	274,848,618		2,953,752		72,140,499
PROPOSED PROJECTS									
04-3281	2024	** Interprofessional Education Building (Addition)	10,000,000		10,000,000	t			
	2025	Lillian Street Dorm	120,000,000		120,000,000	h			
		Total Proposed Construction/Acquisitions	130,000,000	-	130,000,000		-		-
TOTAL CAPITAL PLAN			532,164,975	124,362,605	404,848,618		2,953,752		72,140,499

* CCAP project will not move forward until funding is finalized.

** \$25 million was authorized by the Legislature for Expansion of the Ft Worth Campus. As provided for in the legislation, \$10 million of this funding will be used to increase the scope of the second building on the Ft Worth Campus and \$15 million will be redirected to the Health Sciences and Human Services Building in Stephenville.

Unfunded Capital Needs:

2025	Fort Worth Building #3	60,000,000
2025	Thompson Student Center Expansion	30,000,000
2025	Hotel & Conference Center	32,400,000
2025	Innovation Lab	40,000,000
2025	Agricultural Science Building	100,000,000
2026	OA Grant Renovation	5,000,000
2026	Wisdom Gym Renovations	11,000,000
2026	Parking Structure #2	40,000,000
2027	Dining Services Expansion	15,000,000
2027	Recreation Center Expansion	20,000,000
2028	Indoor Practice Facility	65,000,000
2028	Performing Arts Center	100,000,000

TEXAS A&M UNIVERSITY - CORPUS CHRISTI
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
15-3179		Parking Garage - Island Campus	39,000,000	39,000,000	g,p,o	-
15-3268		Arts and Media Building	64,922,833	64,922,833	t,w	972,525
		Chaparral Renovations - PH I	9,300,000	4,500,000	y	-
		Student Services Center Renovations	6,600,000	6,600,000	w,o	3,391,141
		Physical Plant Projects/Equipment/Other	14,339,600	8,600,000		1,984,348
		Total Construction/Acquisitions in Progress	134,162,433	123,622,833	10,539,600	6,348,014
PROPOSED PROJECTS						
15-3268	2024	Arts and Media Building (Addition)	16,000,000	13,000,000	b,w	3,000,000
		Physical Plant Projects/Equipment/Other	5,000,000			5,000,000
		Total Proposed Construction/Acquisitions	21,000,000	13,000,000	8,000,000	-
TOTAL CAPITAL PLAN			155,162,433	136,622,833	18,539,600	6,348,014

Unfunded Capital Needs:

2024	Campus Generator (Center for Science & Natural Resources Center	2,000,000
2024	Downtown Chaparral Building Generator & Saferoom	3,527,338
2024	Island Beach Rec Facility	7,500,000
2025	Multi-purpose Community Center	55,000,000
2025	Center for the Arts Roof Replacement	2,500,000
2025	Center for Sciences Renovation	3,200,000
2025	Chaparral Renovations - PH II	15,000,000
2025	Central Plant Chilled & Hot Water Loop	30,000,000
2025	Center for the Sciences Roof Replacement	2,500,000
2025	Learning Resources - Library	70,000,000
2025	Academic Building	45,000,000
2026	Natural Resources Center Renovations	3,500,000
2026	Stormwater Repair/Replacement Campus Wide	20,000,000
2026	Health Center	25,500,000
2026	Student Aquatics Center	45,000,000
2027	Repair & Replace Paved Roads Campus Wide	20,000,000
2027	Pedestrian Pathway	30,000,000
2028	Center for the Arts Renovations	2,800,000
2028	Parking Garage	40,000,000
2028	Arts and Media Building Phase II	60,000,000
2028	Life Sciences Research and Engineering Complex - Ph. II	65,000,000

TEXAS A&M INTERNATIONAL UNIVERSITY
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
16-3382		Health Sciences Education & Research Center & Western Hemispheric Trade Center Expansion	71,200,000	44,922,833 t	26,277,167 g,w,s	179,677
		ESCO Utility Project #2	6,220,000	6,220,000 u		2,340,476
		Total Construction/Acquisitions in Progress	77,420,000	51,142,833	26,277,167	2,520,153
TOTAL CAPITAL PLAN			77,420,000	51,142,833	26,277,167	2,520,153

Unfunded Capital Needs:

2025	Rehabilitation of University Village Student Housing	7,500,000
2026	Reconstruction of Campus Entrance	7,500,000
2026	ESCO Utility Project #3	9,900,000
2027	Renovation of Kinesiology Convocation Building	28,000,000
2027	Nursing Education And Simulation Center	75,000,000
2030	ESCO Utility Project #4	9,900,000

TEXAS A&M UNIVERSITY - KINGSVILLE
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
17-3383		Deferred Maintenance	47,922,833	44,922,833 t	3,000,000 w	1,000,309
		Total Construction/Acquisitions in Progress	47,922,833	44,922,833	3,000,000	1,000,309
PROPOSED PROJECTS						
	2027	Utility Improvements	5,000,000	5,000,000 w		
		Total Proposed Construction/Acquisitions	5,000,000	5,000,000	-	-
TOTAL CAPITAL PLAN			52,922,833	49,922,833	3,000,000	1,000,309

Unfunded Capital Needs:

2026	IT Infrastructure	9,950,000
2026	Ocelot Breeding & Re-Wilding Facility	20,000,000
2026	South Texas A&M Health Hub	30,000,000
2026	Deferred Maintenance	90,000,000
2026	Science & Engineering Research Complex	90,000,000
2027	NCAA Women's Soccer Complex	8,000,000
2027	South Texas Baffin Bay Research Station	40,000,000
2027	Student Commons Building & Stadium Renovations	75,000,000
2028	Advanced Agriculture & Technology Center	90,000,000
2028	Academic Classroom Building	8,000,000
2029	University Farm Improvements	40,000,000

WEST TEXAS A&M UNIVERSITY
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
18-3363		Bain Athletic Expansion	8,979,500	5,479,500 o	3,500,000 o	1,083,803
18-3364		Renovation of an Education Building and Health/Safety Upgrades	44,922,833	44,922,833 t		319,051
		Physical Plant Projects/Equipment/Other	8,200,000		8,200,000	749,309
		Total Construction/Acquisitions in Progress	62,102,333	50,402,333	11,700,000	2,152,163
PROPOSED PROJECTS						
	2025	Public Safety Facility	9,975,000	8,250,000 o	1,725,000 o	
		Total Proposed Construction/Acquisitions	9,975,000	8,250,000	1,725,000	-
TOTAL CAPITAL PLAN			72,077,333	58,652,333	13,425,000	2,152,163

Unfunded Capital Needs:

2025	Feed Mill and Agriculture Research Facility	14,250,000
2026	East Dining Hall Upgrades	2,000,000
2026	Greenhouses	4,000,000
2026	Mary Moody Northen Hall Upgrades	3,700,000
2026	JBK Student Center Upgrades	3,800,000
2026	Virgil Henson Activities Center Upgrades	6,900,000
2026	Panhandle Plains Historical Museum Upgrades	8,000,000
2026	Cousins Hall Renovations	12,500,000
2026	Old Main Renovations	45,000,000
2026	Panhandle-Plains Historical Museum Renovations	80,000,000
2027	Intramural Fields	4,000,000
2027	Utility Plant	5,500,000
2027	Jones Hall Renovations	5,850,000
2027	Multi-Disciplinary Research Complex	66,000,000
2028	Central Supply and Warehouse	4,000,000
2028	Shirley Hall Renovations	5,250,000
2028	New Physical Plant	8,000,000
2028	25th Street Enhancement & Loading Dock	12,000,000
2028	Learning Commons	21,500,000

TEXAS A&M UNIVERSITY - TEXARKANA
FY 2024- FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
22-3385		Business, Engineering and Technology Building	44,922,833	44,922,833		-
		BLV HVAC Replacement	6,430,152		6,430,152	1,003,255
		Total Construction/Acquisitions in Progress	51,352,985	44,922,833	6,430,152	1,003,255
TOTAL CAPITAL PLAN			51,352,985	44,922,833	6,430,152	1,003,255

TEXAS A&M UNIVERSITY - COMMERCE
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
21-3337		Student Services Building	19,500,000	15,000,000 w	4,500,000 w	2,144,036
21-3384		Agricultural Multipurpose Education & Training Center	44,922,833	44,922,833 t		516,175
21-3390		New Event Center/Arena	58,000,000	50,000,000 s,w,v	8,000,000 o,v,s	-
		Total Construction/Acquisitions in Progress	122,422,833	109,922,833	12,500,000	2,660,211
PROPOSED PROJECTS						
	2024	Morris Recreation Center Expansion	17,500,000	13,500,000 r	4,000,000 r	
	2025	Student Dining Facility	7,400,000		7,400,000 o	
		Physical Plant Projects/Equipment/Other	75,000,000	75,000,000	-	
		Total Proposed Construction/Acquisitions	99,900,000	88,500,000	11,400,000	-
TOTAL CAPITAL PLAN			222,322,833	198,422,833	23,900,000	2,660,211

Unfunded Capital Needs:

2025	Renovate One-stop - University Police Dept. Building	4,500,000
2026	Central Plant Utility	35,000,000
2027	New Honors College Living/Learning Residence Hall	50,000,000
2028	Rayburn Student Center Renovation/Expansion	17,000,000

TEXAS A&M UNIVERSITY - CENTRAL TEXAS
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
24-3376		Central Operational Reliability and Efficiency Facility (CORE)	47,500,000	2,577,167	44,922,833	t	1,016,491
		Physical Plant Projects/Equipment/Other	5,911,615	5,911,615			1,772,581
		Total Construction/Acquisitions in Progress	53,411,615	8,488,782	44,922,833	-	2,789,072
PROPOSED PROJECTS							
2024		Central Operational Reliability and Efficiency Facility (Addition)	2,400,000	2,400,000			
2026		Research Annex Facility	10,000,000	5,000,000	5,000,000	y	
		Total Proposed Construction/Acquisitions	12,400,000	7,400,000	5,000,000	-	-
TOTAL CAPITAL PLAN			65,811,615	15,888,782	49,922,833	-	2,789,072

Unfunded Capital Needs:		
2026	Student Success Center	80,000,000

TEXAS A&M UNIVERSITY - SAN ANTONIO
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
25-3265		Academic and Administration Building - Phase II	53,000,000	53,000,000			49,219,147
25-3305		Recreation Center	19,200,000	3,000,000	11,000,000 r	5,200,000 r,g	2,683,355
25-3309		Student Housing Phase II	32,500,000		32,500,000 h		3,905,246
25-3387		Public Health and Education Building	44,922,833		44,922,833 t		46,620
		Physical Plant Projects/Equipment/Other	7,267,058	7,267,058			2,609,746
		Total Construction/Acquisitions in Progress	156,889,891	63,267,058	88,422,833	5,200,000	58,464,114
PROPOSED PROJECTS							
25-3387	2024	Public Health and Education Building (Addition)	10,000,000	10,000,000			
	2024	* Educare Building	16,970,000	3,000,000	11,802,500 c,g,b	2,167,500 b,y	
	2024	* Multipurpose Field, Competition Track & Softball Field Upgrades	9,958,856			9,958,856 c	
	2025	Student Housing Phase III	35,000,000		35,000,000 h		
		Total Proposed Construction/Acquisitions	71,928,856	13,000,000	46,802,500	12,126,356	-
TOTAL CAPITAL PLAN			228,818,747	76,267,058	135,225,333	17,326,356	58,464,114

* Project will not move forward until contracts are executed, POR is complete and funding is finalized.

Unfunded Capital Needs:

2024	Campus-wide Storm Water Drainage System	50,000,000
2024	Student Housing Ph II - Parking	3,305,839
2024	Athletics Building	8,000,000
2024	Student Union/Dining Hall	45,000,000
2025	Campus Central Plant	19,000,000
2025	TDEM Facility - San Antonio	95,850,000
2025	Academic Building III	90,000,000
2025	Academic Building IV	82,500,000

TEXAS A&M AGRILIFE RESEARCH
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
06-3344		* Borlaug Southern Crop Improvement Center Renovations	60,000,000	21,575,000	8,500,000 y	29,925,000 c,o	5,991,549
06-3377		Amarillo Research & Extension Center at Canyon	30,000,000	20,000,000	10,000,000 y		232,214
06-3407		Vernon Campus Storm Repairs	14,000,000			14,000,000 n	1,699,588
		Physical Plant Projects/Equipment/Other	17,471,216	17,471,216			3,701,453
		Total Construction/Acquisitions in Progress	121,471,216	59,046,216	18,500,000	43,925,000	11,624,804
PROPOSED PROJECTS							
06-3407	2024	Vernon Campus Storm Repairs (Addition)	1,000,000			1,000,000 n	
06-3397	2024	Animal Reproductive Biotechnology Center	13,000,000	1,340,000	10,000,000 y,b	1,660,000 b	
	2025	** Meat Sciences & Technology Center	123,900,000	25,000,000	28,900,000 y	70,000,000 a,b	
		Total Proposed Construction/Acquisitions	137,900,000	26,340,000	38,900,000	72,660,000	-
TOTAL CAPITAL PLAN			259,371,216	85,386,216	57,400,000	116,585,000	11,624,804

* \$19.925 million of project will be funded by cash from TAMU.

** \$25 million of project will be funded by cash from TAMU.

<p style="text-align: center;">TEXAS A&M AGRILIFE EXTENSION SERVICE FY 2024 - FY 2028 CAPITAL PLAN SUMMARY INFORMATION</p>

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
		Physical Plant Projects/Equipment/Other	5,542,000	5,542,000			2,382,578
		Total Construction/Acquisitions in Progress	5,542,000	5,542,000	-	-	2,382,578
TOTAL CAPITAL PLAN			5,542,000	5,542,000	-	-	2,382,578

**TEXAS A&M FOREST SERVICE
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION**

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
		Hudson Office	5,000,000	4,729,000		271,000	912,050
		Physical Plant Projects/Equipment/Other	7,659,741	7,659,741			802,822
		Total Construction/Acquisitions in Progress	12,659,741	12,388,741	-	271,000	1,714,872
TOTAL CAPITAL PLAN			12,659,741	12,388,741	-	271,000	1,714,872

TEXAS A&M ENGINEERING EXPERIMENT STATION
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
28-3230		Industrial Distribution Building No. 1	20,020,000		9,357,156 b	10,662,844 b,s	15,326,175
28-3321		* Ballistic Aero-Optics Materials Facility	54,626,000		14,894,665 c,y	39,731,335 n,c,o	39,130,850
28-3324		** Nuclear Engineering Education Building	15,100,000	4,500,000		10,600,000 a,o	698,472
28-3341		TEES Detonation Research Test Facility	9,500,000			9,500,000 a,o	445,529
		Propulsion Test Facility at the TEES Turbomachinery Lab	6,400,000		5,400,000 y,o,b	1,000,000 a	-
		Physical Plant Projects/Equipment/Other	3,923,642	3,923,642			1,146,679
		Total Construction/Acquisitions in Progress	109,569,642	8,423,642	29,651,821	71,494,179	56,747,705
PROPOSED PROJECTS							
2024		*** Hypersonic Wind Tunnel	30,000,000			30,000,000 n	
		Total Proposed Construction/Acquisitions	30,000,000	-	-	30,000,000	-
TOTAL CAPITAL PLAN			139,569,642	8,423,642	29,651,821	101,494,179	56,747,705

* \$6.8 million of project will be funded by cash from TAMU.

** \$9.5 million of project will be funded by cash from TAMU.

*** Project will not move forward until POR is complete.

TEXAS A&M ENGINEERING EXTENSION SERVICE
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
09-3269		Brayton New Administrative and Classroom Facility	31,945,000		31,900,000 e	45,000 e	23,303,388
		Physical Plant Projects/Equipment/Other	2,000,000	2,000,000			403,709
		Total Construction/Acquisitions in Progress	33,945,000	2,000,000	31,900,000	45,000	23,707,097
PROPOSED PROJECTS							
2024		* TEEX RELLIS Training Props	25,300,000	15,000,000		10,300,000 e	
		Total Proposed Construction/Acquisitions	25,300,000	15,000,000	-	10,300,000	-
TOTAL CAPITAL PLAN			59,245,000	17,000,000	31,900,000	10,345,000	23,707,097

* Project will not move forward until POR is complete.

Unfunded Capital Needs:		
2026	New TEEX Facility at TAMUSA	27,045,000
2027	RELLIS Indoor Shooting Range	6,820,500

TEXAS A&M TRANSPORTATION INSTITUTE
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
		Physical Plant Projects/Equipment/Other	2,515,753	2,515,753		1,166,473	
		Total Construction/Acquisitions in Progress	2,515,753	2,515,753	-	1,166,473	
TOTAL CAPITAL PLAN			2,515,753	2,515,753	-	1,166,473	

SYSTEM OFFICES
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
01-3359		Financial Management System	40,000,000	37,500,000		2,500,000 a	25,492,870
		Law & Education Building	150,000,000	125,000,000	25,000,000 o,b		4,798
		Physical Plant Projects/Equipment/Other	10,265,000	1,400,000	8,714,660	150,340	3,812,791
		Total Construction/Acquisitions in Progress	200,265,000	163,900,000	33,714,660	2,650,340	29,310,459
PROPOSED PROJECTS							
2024		* Quantum and Artificial Intelligence Chip Fabrication	100,000,000			100,000,000 n	
		Total Proposed Construction/Acquisitions	100,000,000	-	-	100,000,000	-
TOTAL CAPITAL PLAN			300,265,000	163,900,000	33,714,660	102,650,340	29,310,459

* Project will not move forward until POR is complete.

RELLIS
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources			Cumulative Expenditures Prior Years to 05/31/2023
				PUF Debt Proceeds	RFS Debt Proceeds	Other	
APPROVED PROJECTS							
26-3365		Campus Infrastructure 4B	7,744,000	7,744,000			2,198,098
01-3372		STEM Education Center	43,425,406		43,425,406		453,117
		Physical Plant Projects/Equipment/Other	13,282,950	10,412,950	2,070,000	800,000	2,255,676
		Total Construction/Acquisitions in Progress	64,452,356	18,156,950	45,495,406	800,000	4,906,891
PROPOSED PROJECTS							
	2024	* Avenue D South Extension & Utility Upgrades	13,500,000	13,000,000		500,000	
		Total Proposed Construction/Acquisitions	13,500,000	13,000,000	-	500,000	-
TOTAL CAPITAL PLAN			77,952,356	31,156,950	45,495,406	1,300,000	4,906,891

* \$500K of project will be funded by cash from TEEX.

Unfunded Capital Needs:

2025	Campus New Water Tower	7,500,000
2025	RELLIS Hangers (#9-11)	4,287,000
2026	Runway 35L Rehabilitation	4,770,000
2026	Central Utility Plant Equipment Expansion	2,294,000
2026	Sewage Treatment Facility Expansion	800,000
2027	Runway 22 & 28 Rehabilitation	7,170,000
2027	RELLIS Parkway Inner Boulevard	14,014,000
2027	Campus Infrastructure 5	13,196,000
2028	Runway 35C Rehabilitation	10,992,000
2028	Office Complex Phase B	11,153,000
2028	Campus Infrastructure 4A	33,184,000

TEXAS DIVISION OF EMERGENCY MANAGEMENT
FY 2024 - FY 2028 CAPITAL PLAN
SUMMARY INFORMATION

Project #	Projected FY Start Date for Proposed Projects	Project Name	Total Planning Amount	Funding Sources		Cumulative Expenditures Prior Years to 05/31/2023
				RFS Debt Proceeds	Other	
APPROVED PROJECTS						
30-3338		TDEM Warehouse at RELLIS	33,226,353		33,226,353 f,n,y	24,666,744
30-3317		New Headquarters and State Emergency Operations Center	360,647,047		360,647,047 f,y	4,541,833
		Total Construction/Acquisitions in Progress	393,873,400	-	393,873,400	29,208,577
TOTAL CAPITAL PLAN			393,873,400	-	393,873,400	29,208,577

Unfunded Capital Needs:

2024	Regional Storage/Staging Areas for Emergency Management Resources	300,000,000
2024	Parking Garage	17,635,362

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Central Operational Reliability and Efficiency Facility (CORE) Project, Texas A&M University-Central Texas, Killeen, Texas (Project No. 24-3376)

Background and Prior Actions:

The Central Operational Reliability and Efficiency Facility (CORE) Project was added to the FY 2022 – FY 2026 A&M System Capital Plan after legislative approval of the Capital Construction Assistance Projects (CCAP). The project was included as an approved project on the FY 2023 – FY 2027 A&M System Capital Plan approved by the Board at the May 2022 meeting with a planning amount of \$47,500,000. Approval to design to the increased budget shown below was received by letter on April 27, 2023 (see attachment). The planning amount has been increased to \$49,900,000 on the FY 2024 – FY 2028 Capital Plan.

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$45,150,000 for construction services and related project costs. \$4,750,000 has been previously appropriated to this project.
- (3) Approve construction of the Central Operational Reliability and Efficiency Facility (CORE) Project at Texas A&M University-Central Texas (A&M-Central Texas).

Funding/Budget Amount:

<u>Funding Source</u>	<u>Original Planning Amount</u>	<u>Capital Plan Adjustment</u>	<u>Current Planning Amount</u>	<u>Average Estimated Annual Debt Service</u>	<u>Debt Service Source</u>
Revenue Financing System Debt Proceeds	\$44,922,833	\$0	\$44,922,833	\$3,916,875	Capital Construction Assistance Project
Permanent University Fund Debt Proceeds	<u>\$2,577,167</u>	<u>\$2,400,000</u>	<u>\$4,977,167</u>	\$403,563	Available University Fund
Total Project Funds	<u>\$47,500,000</u>	<u>\$2,400,000</u>	<u>\$49,900,000</u>		

*A&M-Central Texas is using \$4,977,167 of its PUF Equipment Allocations to provide funding for this project. These funds have been reverted to the A&M System so they can be appropriated to this major project.

Project Justification:

Beginning with the initial construction of the A&M-Central Texas campus in 2011, the university has planned to construct a central utility plant upon completion of the initial core academic buildings. Both the campus development plan and those designing the initial buildings advised this course of action to ensure that efficiencies were realized through centralizing utilities, infrastructure, and other services such as telecommunications.

In addition to the efficiency gained by a Central Utility Plant, recent events such as winter storm Uri pointed out the lack of a secure, reliable emergency operations center (EOC) was an area that needed to be addressed. While training exercises have been held in classrooms and a trailer unit, the need for a permanent EOC has long been a goal for training and actual incidents. This facility will be shared by the university police department and the safety and risk management office to provide a location for EOC operations and training opportunities.

Another primary factor in the current project was noted by the university administration several years ago. As the university grew into its third general academic building, it has become apparent that the campus lacks adequate space for some key operational units:

- The university police department (consisting of 20 staff and officers) has been using two small offices, a reception area and a storage closet converted to office space for the past 10 years. While they are currently able to meet minimal certification standards for a small police department there is a demonstrated need for additional space for operations and training to ensure room for a safe and secure environment.
- The university facilities group consisting of two university staff and four contracted (SSC) employees are currently working out of one office and a converted storage room with no dedicated space for workshops at this time.
- The university is also in need of a central receiving location along with conditioned warehouse storage. The current receiving location does not have a loading dock and has a very small, enclosed area for receiving any sort of shipped materials. At this time, most centralized storage areas have been delegated to various university departments such as the IT department or converted to office space due to pressing needs.

Scope:

The project includes an approximately 30,000 gross square foot building. Included in this building are 11,750 square feet dedicated to a central utility plant housing the water-cooled chiller for this facility and space for future chillers, a main electrical room with electrical gear to service campus, and a 2-Megawatt emergency generator that services this facility and the existing campus buildings.

The building also has 18,000 square feet dedicated to the campus police department. This police department space has offices for evidence processing and storage and support spaces for the

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Agenda Item Briefing

campus patrol staff. Also included is a multi-use conference room facility that will serve as training space for police and maintenance staff and will serve as an Emergency Operations Center.

Along with the facility, there is the installation of an underground chill water thermal loop that will tie into the existing facilities on campus and be sized for future campus growth.

Construction on this project is scheduled to start in September 2023 with substantial completion scheduled for February 2026. The total project budget is \$49,900,000.

Other Major Fiscal Impacts:

None.

Strategic Plan Imperative(s) this Item Advances:

The CORE project supports the following Strategic Plan Imperatives:

Imperative No. 2: *“The A&M System will remain affordable and accessible.”* We will continue to ensure that our costs remain reasonable so that the cost of education does not become a barrier for Texans to access the A&M System.

A main driver in constructing a centralized utility plant is to minimize expenses on current and future building utilities and to increase the overall energy efficiency of the campus. The centralized plant is designed to accept renewable energy sources in a 'plug and play' fashion.

Imperative No. 6: *“The A&M System, in adhering to the high standard of excellence and growth required in this strategic plan, will display prudent financial stewardship and sustainability.”* Our member institutions will be diligent about their plans for growth, and the A&M System will ensure financially sound decision-making at the aggregate level. We have robust financial management capabilities in place and will continue to manage the A&M System's financial health in a holistic manner.

The focus on campus energy efficiency and reduced costs associated with energy consumption directly supports the system's mission of “financial health in a holistic manner”.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
FACILITIES PLANNING AND CONSTRUCTION
Office of the Deputy Chancellor and Chief Financial Officer
June 28, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Central Operational Reliability and Efficiency Facility (CORE) Project, Texas A&M University-Central Texas, Killeen, Texas (Project No. 24-3376)

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$49,900,000 for the Central Operational Reliability and Efficiency Facility (CORE) Project is approved.

The amount of \$40,172,833 is appropriated from Account No. 01-083540 Revenue Financing System Debt Proceeds (Capital Construction Assistance Project), and the amount of \$4,977,167 is appropriated from Account No. 01-084243 Permanent University Fund Debt Proceeds (AUF), for construction services and related project costs.

The Central Operational Reliability and Efficiency Facility (CORE) Project, Texas A&M University-Central Texas, Killeen, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

Agenda Item No.
June 28, 2023

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

Approved for Legal Sufficiency:

John Sharp
Chancellor

Ray Bonilla
General Counsel

Phillip Ray
Vice Chancellor for Business Affairs

Dr. Marc A. Nigliazzo, President
Texas A&M University-Central Texas

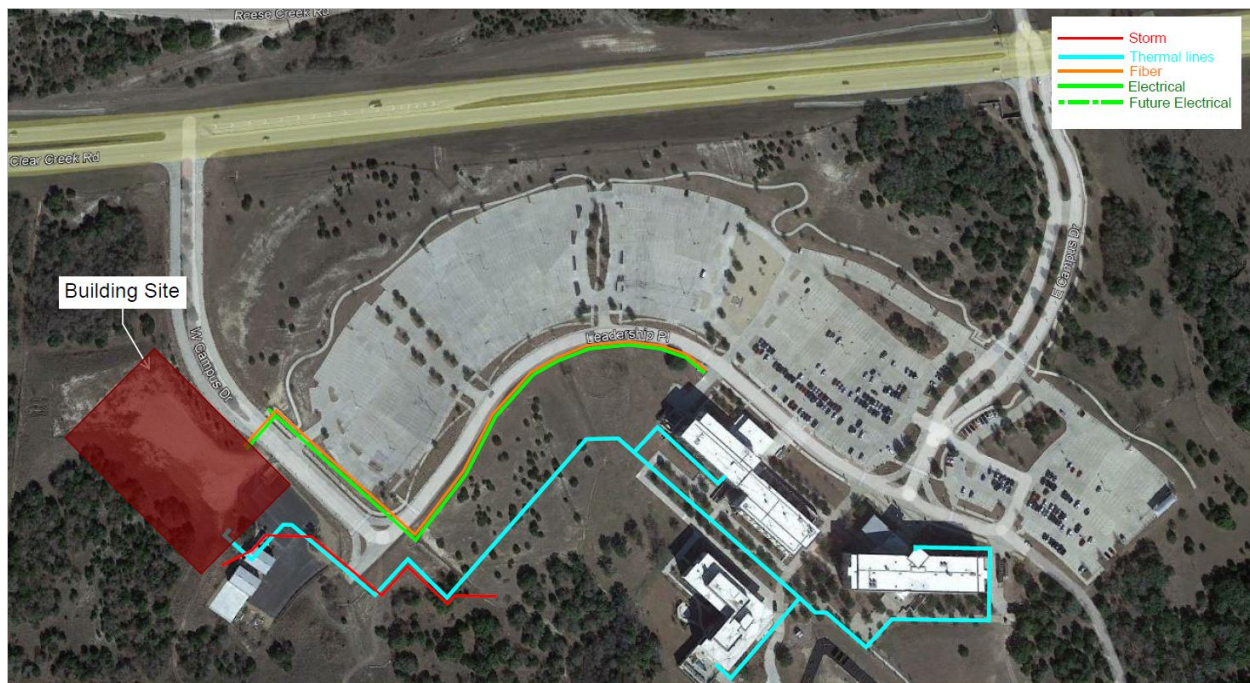
**CENTRAL OPERATIONAL RELIABILITY AND
EFFICIENCY FACILITY (CORE)****PROJECT BUDGET****TEXAS A&M UNIVERSITY-CENTRAL TEXAS****PROJECT NO. 24-3376**

1.	Construction	\$40,658,000
2.	Project Contingency	2,021,376
3.	Program of Requirements.....	0
4.	Pre-Construction Services	3,293,624
5.	Commissioning.....	150,000
6.	Construction Testing	437,000
7.	Campus Services & Technology	468,000
8.	Furnishings	665,000
9.	Equipment	582,000
10.	Other Project Costs.....	311,000
11.	Project Management & Inspection	<u>1,314,000</u>
12.	TOTAL ESTIMATED COST OF PROJECT	<u>\$49,900,000</u>

**CENTRAL OPERATIONAL RELIABILITY AND
EFFICIENCY FACILITY (CORE)
TEXAS A&M UNIVERSITY-CENTRAL TEXAS
PROJECT NO. 24-3376**

PROJECT SCHEDULE

1. Issue A/E RFQ June 8, 2022
2. Issue CMAR RFP June 23, 2022
3. Receive A/E RFQ Responses..... June 29, 2022
4. Shortlist A/E Firms July 6, 2022
5. Interview A/E Shortlist July 13, 2022
6. Receive CMAR RFP Response July 14, 2022
7. A/E Ranked Order Approved by Chancellor July 23, 2022
8. CMAR Ranked Order Approved by Chancellor August 26, 2022
9. Execute A/E Agreement September 8, 2022
10. Execute CMAR Agreement September 27, 2022
11. Complete Schematic Design January 19, 2023
12. Complete Design Development June 1, 2023
13. Receive GMP from CMAR July 21, 2023
14. BOR Approval for Construction August 17, 2023
15. Submit THECB Application August 2023
16. Begin Construction September 2023
17. Complete Construction Documents October 2023
18. Substantial Completion February 2026
19. Owner Occupancy April 2026



Central Operational Reliability and Efficiency Facility (CORE)

Texas A&M University-Central Texas

Project No. 24-3376

**TEXAS A&M UNIVERSITY - CENTRAL TEXAS
REVENUE FINANCING SYSTEM
24-3376 Central Operational Reliability and Efficiency (CORE) Facility
Capital Construction Assistance Project (CCAP)**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total
BONDS	44,925,000.00			
YEAR 1	43,705,000.00	1,220,000.00	2,695,500.00	3,915,500.00
YEAR 2	42,410,000.00	1,295,000.00	2,622,300.00	3,917,300.00
YEAR 3	41,040,000.00	1,370,000.00	2,544,600.00	3,914,600.00
YEAR 4	39,585,000.00	1,455,000.00	2,462,400.00	3,917,400.00
YEAR 5	38,045,000.00	1,540,000.00	2,375,100.00	3,915,100.00
YEAR 6	36,410,000.00	1,635,000.00	2,282,700.00	3,917,700.00
YEAR 7	34,675,000.00	1,735,000.00	2,184,600.00	3,919,600.00
YEAR 8	32,840,000.00	1,835,000.00	2,080,500.00	3,915,500.00
YEAR 9	30,895,000.00	1,945,000.00	1,970,400.00	3,915,400.00
YEAR 10	28,830,000.00	2,065,000.00	1,853,700.00	3,918,700.00
YEAR 11	26,645,000.00	2,185,000.00	1,729,800.00	3,914,800.00
YEAR 12	24,325,000.00	2,320,000.00	1,598,700.00	3,918,700.00
YEAR 13	21,865,000.00	2,460,000.00	1,459,500.00	3,919,500.00
YEAR 14	19,260,000.00	2,605,000.00	1,311,900.00	3,916,900.00
YEAR 15	16,500,000.00	2,760,000.00	1,155,600.00	3,915,600.00
YEAR 16	13,575,000.00	2,925,000.00	990,000.00	3,915,000.00
YEAR 17	10,470,000.00	3,105,000.00	814,500.00	3,919,500.00
YEAR 18	7,180,000.00	3,290,000.00	628,200.00	3,918,200.00
YEAR 19	3,695,000.00	3,485,000.00	430,800.00	3,915,800.00
YEAR 20	-	3,695,000.00	221,700.00	3,916,700.00
		<u>\$ 44,925,000.00</u>	<u>\$ 33,412,500.00</u>	<u>\$ 78,337,500.00</u>

Estimated rounding of \$2,167 is included in this schedule.

Long-term rates are assumed to be 6.00%. Rates are subject to market change.

Prepared by the Office of the Treasurer - Treasury Services 06/05/2023

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

**TEXAS A&M UNIVERSITY - CENTRAL TEXAS
PERMANENT UNIVERSITY FUND
24-3376 Central Operational Reliability and Efficiency (CORE) Facility
Available University Fund**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total
BONDS	5,030,000.00			
YEAR 1	4,880,000.00	150,000.00	251,500.00	401,500.00
YEAR 2	4,720,000.00	160,000.00	244,000.00	404,000.00
YEAR 3	4,550,000.00	170,000.00	236,000.00	406,000.00
YEAR 4	4,375,000.00	175,000.00	227,500.00	402,500.00
YEAR 5	4,190,000.00	185,000.00	218,750.00	403,750.00
YEAR 6	3,995,000.00	195,000.00	209,500.00	404,500.00
YEAR 7	3,790,000.00	205,000.00	199,750.00	404,750.00
YEAR 8	3,575,000.00	215,000.00	189,500.00	404,500.00
YEAR 9	3,350,000.00	225,000.00	178,750.00	403,750.00
YEAR 10	3,115,000.00	235,000.00	167,500.00	402,500.00
YEAR 11	2,865,000.00	250,000.00	155,750.00	405,750.00
YEAR 12	2,605,000.00	260,000.00	143,250.00	403,250.00
YEAR 13	2,330,000.00	275,000.00	130,250.00	405,250.00
YEAR 14	2,045,000.00	285,000.00	116,500.00	401,500.00
YEAR 15	1,745,000.00	300,000.00	102,250.00	402,250.00
YEAR 16	1,430,000.00	315,000.00	87,250.00	402,250.00
YEAR 17	1,100,000.00	330,000.00	71,500.00	401,500.00
YEAR 18	750,000.00	350,000.00	55,000.00	405,000.00
YEAR 19	385,000.00	365,000.00	37,500.00	402,500.00
YEAR 20	-	385,000.00	19,250.00	404,250.00
		<u>\$ 5,030,000.00</u>	<u>\$ 3,041,250.00</u>	<u>\$ 8,071,250.00</u>

Estimated issuance costs and rounding of \$52,833 are included in this schedule.
Long-term rates are assumed to be 5.00%. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 06/05/2023

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.



THE TEXAS A&M UNIVERSITY SYSTEM

April 20, 2023

MEMORANDUM

TO: Mr. Michael Plank
Chair, Committee on Buildings & Physical Plant
Board of Regents

Mr. John Sharp
Chancellor

THROUGH: *BT* Mr. Billy C. Hamilton
Deputy Chancellor and Chief Financial Officer

THROUGH: Ms. Maria Robinson *MR*
Chief Investment Officer and Treasurer

FROM: Mr. Brett McCully *MM*
Chief Facilities Officer

SUBJECT: Proposed Revision to Capital Plan Project Amount
Central Operational Reliability and Efficiency (CORE) Facility
Project No. 24-3376
Proposed Project Planning Amount \$49,900,000
Texas A&M University-Central Texas

The Central Operational Reliability and Efficiency (CORE) Facility project was added to the FY 2023 – FY 2027 A&M System Capital Plan after legislative approval of the Capital Construction Assistance Projects (CCAP). The Texas A&M University System Board of Regents approved the Capital Plan at its May 2022 meeting, which included the CORE project at Texas A&M University-Central Texas (A&M-Central Texas) for initiation in FY 2023 at a planning amount of \$47,500,000 (\$44,922,833 CCAP funding plus \$2,577,167 of A&M-Central Texas' Permanent University Fund (PUF) Debt Proceeds). The project will provide much needed central utility plant services for the campus in addition to operational space for the university police department and facilities support.

On March 28, 2023, Todd Lutz, Vice President for Finance & Administration/Chief Financial Officer, on behalf of A&M-Central Texas provided a request to Facilities Planning and Construction to increase the project funding in order to incorporate desired scope changes. A copy of the request is attached for reference.

At the end of Schematic Design, the estimate received from the Construction Manager at Risk (CMAR) was over the estimated Amount Available for Construction Contract (AACC) included in the Program of Requirements (POR). The university has worked diligently with the CMAR and Architect to reduce scope

Mr. John Sharp
Mr. Michael Plank
April 20, 2023
Page 2

originally identified in the POR to meet the available AACC. The university requests to add an additional \$2,400,000 of PUF debt proceeds to ensure the university can construct all Priority 1 areas as identified in the POR and additional Priority 2 areas that are desired for a fully functional utility and physical plant facility.

Funding for the increase to this project is as follows:

<u>Funding Source</u>	<u>Planning Amount</u>	<u>Proposed Adjustment</u>	<u>Proposed Planning Amount</u>	<u>Debt Service Source</u>
Revenue Financing System Debt Proceeds	\$44,922,833	\$0	\$44,922,833	Capital Construction Assistance Project
Permanent University Fund Debt Proceeds*	<u>\$2,577,167</u>	<u>\$2,400,000</u>	<u>\$4,977,167</u>	Available University Fund
Total project cost	<u>\$47,500,000</u>	<u>\$2,400,000</u>	<u>\$49,900,000</u>	

*A&M-Central Texas is using \$4,977,167 of its PUF Equipment Allocations to provide funding for this project. These funds will be reverted to the A&M System so they can be appropriated to this major project.

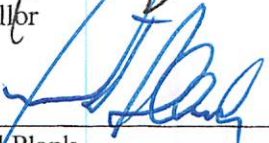
By notice of this memo, approval is recommended to increase the project planning amount of the CORE Project at A&M-Central Texas from \$47,500,000 to \$49,900,000. This is an increase of 5%. The availability of funding has been verified by Treasury Services. Unless we receive direction otherwise, the adjustment of the capital plan amount and project funding will be brought forward with the request for construction approval for this project.

Approved:



John Sharp
Chancellor

25 April 23
Date



Michael Plank
Chair, Committee on Buildings & Physical Plant

27 April 23
Date



MEMORANDUM

TO: Brett McCully
Chief Facilities Officer

THROUGH: Dr. Marc Nigliazzo *M.N.*
President
Texas A&M University-Central Texas

FROM: Mr. Todd Lutz *T.L.*
V.P. for Finance & Administration/CFO
Texas A&M University-Central Texas

SUBJECT: Proposed Revision to Capital Plan Project Amount
CORE Facility Project
Project No. 24-3376
Expansion of Proposed Project Planning Amount - \$49,900,000
Texas A&M University-Central Texas

The Central Operational Reliability and Efficiency (CORE) Facility project was added to the FY 2023 – FY 2027 A&M System Capital Plan after legislative approval of the Capital Construction Assistance Projects (CCAP). The Texas A&M University System Board of Regents (BOR) approved the A&M System Capital Plan at its May 2022 meeting, which included the CORE project at Texas A&M University-Central Texas (A&M-Central Texas) for initiation in FY 2023 at a planning amount of \$47,500,000 (\$44.922 million CCAP funding plus \$2.577 million of A&M-Central Texas' PUF debt proceeds). The project will provide much needed central utility plant services for the campus in addition to operational space for the university police department and facilities support.

At the end of Schematic Design (SD), the estimate received from the Contractor Manager at Risk (CMAR) was over the estimated Amount Available for Construction Contract (AACC) included in the Program of Requirements (POR). The University has worked diligently with the CMAR and Architect to reduce scope originally identified in the POR to meet the available AACC. The University requests to add an additional \$2,400,000 of PUF debt proceeds to ensure the University can construct all Priority 1 areas as identified in the POR and additional Priority 2 areas that are necessary for a functional Utility and Physical Plant Facility.

Please let me know if you have any questions or need additional information.

OFFICE OF FINANCE AND ADMINISTRATION

1001 Leadership Place | Killeen, Texas 76549 | P: 254.519.5498 | F: 254.519.8011

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Deferred Maintenance Project, Texas A&M University-Kingsville, Kingsville, Texas (Project No. 17-3383)

Background and Prior Actions:

The Deferred Maintenance Project was added to the FY 2022 – FY 2026 A&M System Capital Plan after legislative approval of the Capital Construction Assistance Projects (CCAP). The project was included as an approved project on the FY 2023 – FY 2027 A&M System Capital Plan approved by the Board at the May 2022 meeting with an FY 2022 start date and a \$3,000,000 increase for a total planning amount of \$47,922,833.

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$43,130,633 for construction services and related project costs. \$4,792,200 has been previously appropriated to this project.
- (3) Approve construction of the Deferred Maintenance Project at Texas A&M University-Kingsville (Texas A&M-Kingsville).

Funding/Budget Amount:

<u>Funding Source</u>	<u>Budget Amount</u>	Average Estimated Annual <u>Debt Service</u>	<u>Debt Service Source</u>
Revenue Financing System Debt Proceeds	\$44,922,833	\$3,916,875	Capital Construction Assistance Project
Cash (HEF)	<u>\$3,000,000</u>	N/A	N/A
Total Project Funds	<u>\$47,922,833</u>		

Project Justification:

Established in 1925, Texas A&M-Kingsville is nearing 100 years old. Two of the original 1925 buildings are still in operation on the campus with an additional 16 buildings built prior to 1950 also in operation. While the above-ground expansion – in the form of new facilities—has kept

Agenda Item No.
Agenda Item Briefing

pace with campus growth, the campus underground utility tunnel, direct bury utility lines, and utility generation capacity have not kept up as well, both in size and maintenance. In addition, several of the older facilities require new roofs, floors, fire alarm panels, and other life safety maintenance and upgrades. With all these existing needs in mind, as the campus prepares for the next 50 years, the campus proposes to complete utility and infrastructure projects to properly continue to support the educational mission to the students of South Texas.

Scope:

The project will focus on elevator repairs and upgrades as well as fire alarm panel and device replacements. Several aging/failing roofs will be replaced to improve the indoor air quality of the buildings by eliminating leaks and the potential for mold and other air quality issues. As part of this process, several of the roofs will also receive asbestos abatement. In addition, all campus-owned pole lights will be provided new fixtures and transitioned to LED lights to provide enhanced way-finding and illumination at night for students, faculty, and staff.

The failing portions of the existing campus utility loop will be replaced with a new direct bury pre-insulated thermal pipe. The new piping will complete the campus utility loop allowing for Central Plants 1, 2 and 3 to be interconnected providing backup for one another in times of failures or scheduled maintenance. To ensure the continued uninterrupted operation of utility services to campus facilities, the project will also replace aging boilers and cooling towers and their connection points within the Central Plant 1, Central Plant 1 Annex and Central Plant 2.

Construction on this project is scheduled to start in September 2023 with substantial completion scheduled for February 2026. The total project budget is \$47,922,833.

Other Major Fiscal Impacts:

None.

Strategic Plan Imperative(s) this Item Advances:

The Deferred Maintenance Project supports the Strategic Plan imperative identified below: Imperative No. 5: *“The A&M System will provide services that respond to the needs of the people of Texas and contribute to the strength of the state’s economy.”* We will continue to address the needs of Texas and use technology to reach citizens in new ways.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
FACILITIES PLANNING AND CONSTRUCTION
Office of the Deputy Chancellor and Chief Financial Officer
July 5, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Deferred Maintenance Project, Texas A&M University-Kingsville, Kingsville, Texas (Project No. 17-3383)

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$47,922,833 for the Deferred Maintenance Project is approved.

The amount of \$40,130,633 is appropriated from Account No. 01-083540 Revenue Financing System Debt Proceeds (Capital Construction Assistance Project) and the amount of \$3,000,000 is appropriated from Account No. 17-870090 HEF DM Funding, for construction services and related project costs.

The Deferred Maintenance Project, Texas A&M University-Kingsville, Kingsville, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

Agenda Item No.
July 5, 2023

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

Approved for Legal Sufficiency:

John Sharp
Chancellor

Ray Bonilla
General Counsel

Phillip Ray
Vice Chancellor for Business Affairs

Dr. Robert Vela, President
Texas A&M University-Kingsville

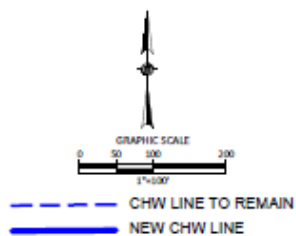
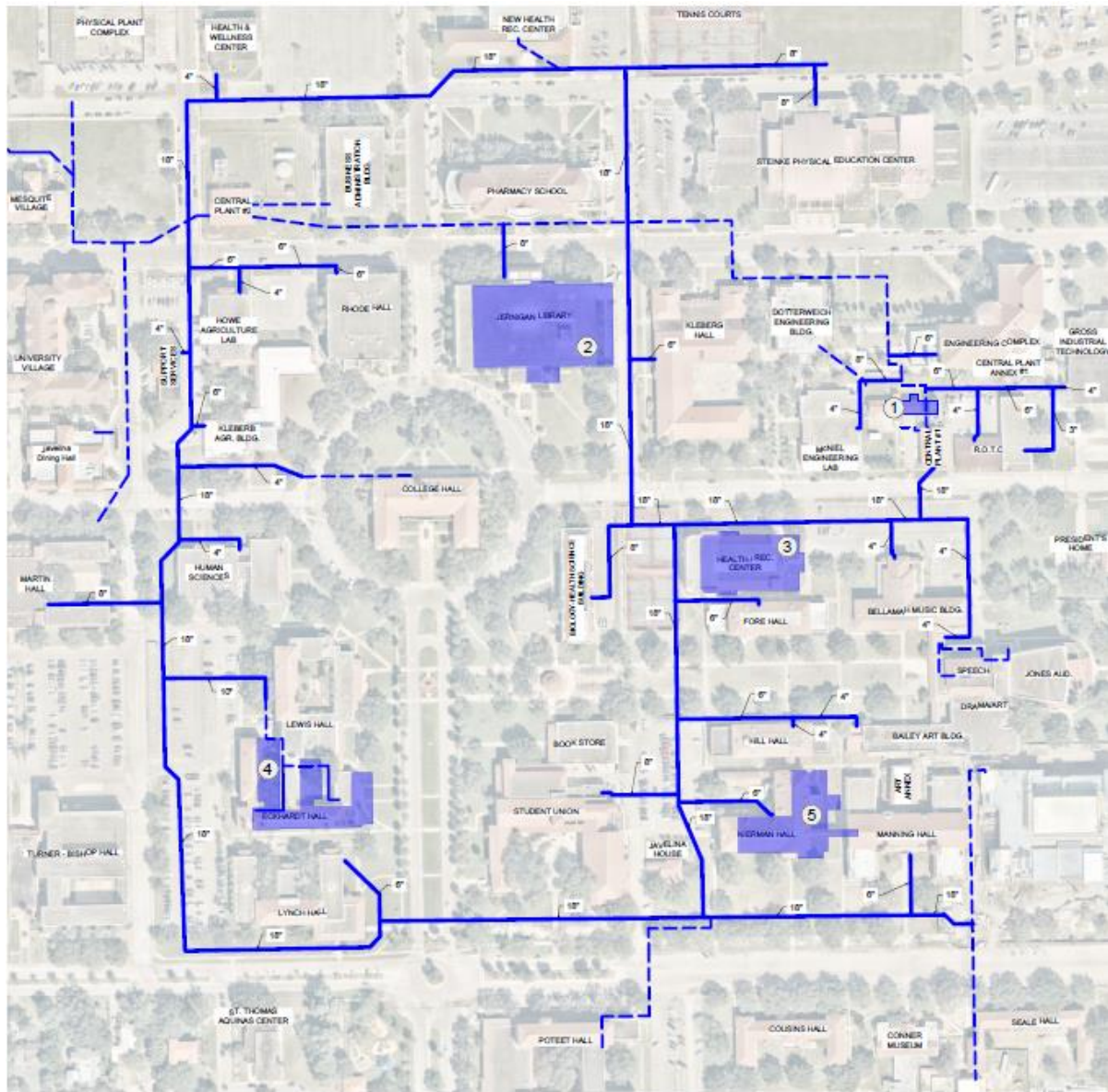
DEFERRED MAINTENANCE TEXAS A&M UNIVERSITY-KINGSVILLE PROJECT NO. 17-3383	PROJECT BUDGET
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1.	Construction	\$39,094,823
2.	Project Contingency	2,504,341
3.	Program of Requirements.....	0
4.	Pre-Construction Services	3,337,952
5.	Commissioning.....	50,000
6.	Construction Testing	796,000
7.	Campus Services & Technology	386,000
8.	Furnishings	0
9.	Equipment	0
10.	Other Project Costs.....	483,717
11.	Project Management & Inspection	<u>1,270,000</u>
12.	TOTAL ESTIMATED COST OF PROJECT	<u>\$47,922,833</u>

**DEFERRED MAINTENANCE
TEXAS A&M UNIVERSITY-KINGSVILLE
PROJECT NO. 17-3383**

PROJECT SCHEDULE

1. Issue DB RFQ August 30, 2022
2. Receive DB RFQ Responses September 20, 2022
3. Shortlist DB FirmsOctober 4, 2022
4. Issue DB RFPOctober 6, 2022
5. Receive DB RFP Response.....October 13, 2022
6. Interview DB ShortlistOctober 18, 2022
7. DB Ranked Order Approved by ChancellorNovember 8, 2022
8. Execute DB Agreement December 19, 2022
9. Complete Schematic Design April 24, 2023
10. Complete Design Development June 20, 2023
11. Receive GMP from DBJuly 21, 2023
12. BOR Approval for Construction August 17, 2023
13. Submit THECB Application September 2023
14. Begin Construction September 2023
15. Complete Construction Documents September 2023
16. Substantial Completion February 2026
17. Owner Occupancy March 2026



BLDG #	DESCRIPTION OF WORK
1	CENTRAL PLANT #1 - NEW COOLING TOWER & BOILER REPLACEMENT
2	JERNIGAN LIBRARY FIRE ALARM UPGRADE
3	HEALTH AND RECREATION - FIRE ALARM UPGRADE
4	ECKHART HALL - FIRE ALARM UPGRADE
5	NEIRMAN HALL - ROOF REPLACEMENT & FUME HOOD REPLACEMENT (10)

Deferred Maintenance

Texas A&M University-Kingsville

Project No. 17-3383

TEXAS A&M UNIVERSITY - KINGSVILLE
REVENUE FINANCING SYSTEM
17-3383 Deferred Maintenance
Capital Construction Assistance Project (CCAP)

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total
BONDS	44,925,000.00			
YEAR 1	43,705,000.00	1,220,000.00	2,695,500.00	3,915,500.00
YEAR 2	42,410,000.00	1,295,000.00	2,622,300.00	3,917,300.00
YEAR 3	41,040,000.00	1,370,000.00	2,544,600.00	3,914,600.00
YEAR 4	39,585,000.00	1,455,000.00	2,462,400.00	3,917,400.00
YEAR 5	38,045,000.00	1,540,000.00	2,375,100.00	3,915,100.00
YEAR 6	36,410,000.00	1,635,000.00	2,282,700.00	3,917,700.00
YEAR 7	34,675,000.00	1,735,000.00	2,184,600.00	3,919,600.00
YEAR 8	32,840,000.00	1,835,000.00	2,080,500.00	3,915,500.00
YEAR 9	30,895,000.00	1,945,000.00	1,970,400.00	3,915,400.00
YEAR 10	28,830,000.00	2,065,000.00	1,853,700.00	3,918,700.00
YEAR 11	26,645,000.00	2,185,000.00	1,729,800.00	3,914,800.00
YEAR 12	24,325,000.00	2,320,000.00	1,598,700.00	3,918,700.00
YEAR 13	21,865,000.00	2,460,000.00	1,459,500.00	3,919,500.00
YEAR 14	19,260,000.00	2,605,000.00	1,311,900.00	3,916,900.00
YEAR 15	16,500,000.00	2,760,000.00	1,155,600.00	3,915,600.00
YEAR 16	13,575,000.00	2,925,000.00	990,000.00	3,915,000.00
YEAR 17	10,470,000.00	3,105,000.00	814,500.00	3,919,500.00
YEAR 18	7,180,000.00	3,290,000.00	628,200.00	3,918,200.00
YEAR 19	3,695,000.00	3,485,000.00	430,800.00	3,915,800.00
YEAR 20	-	3,695,000.00	221,700.00	3,916,700.00
		<u>\$ 44,925,000.00</u>	<u>\$ 33,412,500.00</u>	<u>\$ 78,337,500.00</u>

Estimated rounding of \$2,167 is included in this schedule.
Long-term rates are assumed to be 6.00%. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 06/08/2023

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: Billy Hamilton, Deputy Chancellor and Chief Financial Officer
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Animal Reproductive Biotechnology Center Project, Texas A&M AgriLife Research, Bryan, Texas (Project No. 06-3397)

Background and Prior Actions:

The Animal Reproductive Biotechnology Center Project was included as an approved project on the FY 2023 – FY 2027 A&M System Capital Plan approved by the Board at the May 2022 meeting with a total planning amount of \$9,991,833. Approval to design to the increased budget shown below was received by letter on March 3, 2023 (see attachment). The planning amount has been increased to \$13,000,000 on the FY 2024 – FY 2028 Capital Plan.

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$12,000,817 for construction services and related project costs. \$999,183 has been previously appropriated to this project.
- (3) Approve construction of the Animal Reproductive Biotechnology Center Project for Texas A&M AgriLife Research (AgriLife Research) at Texas A&M-RELLIS.

Funding/Budget Amount:

<u>Funding Source</u>	<u>Original Planning Amount</u>	<u>Capital Plan Adjustment</u>	<u>Current Planning Amount</u>	<u>Average Estimated Annual Debt Service</u>	<u>Debt Service Source Available University Fund</u>
Permanent University Fund Debt Proceeds*	\$0	\$1,340,000	\$1,340,000	\$108,825	
Revenue Financing System Debt Proceeds	\$0	\$5,000,000	\$5,000,000	\$405,150	Indirect Cost Recoveries
Revenue Financing System Debt Proceeds	\$0	\$5,000,000	\$5,000,000	\$1,153,500	Gifts**
Cash (Gifts)	<u>\$9,991,833</u>	<u>\$(8,331,833)</u>	<u>\$1,660,000</u>		
Total Project Funds	<u>\$9,991,833</u>	<u>\$3,008,167</u>	<u>\$13,000,000</u>		

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*AgriLife Research is using \$1,340,000 of its PUF Equipment Allocations to provide funding for this project. These funds have been reverted to the A&M System so they can be appropriated to this major project.

**System policy requires 50% of the gift funds in hand and an additional 25% in documented pledges before approval for construction on the project is received. For any gift funds not in hand, an unrestricted source of funds must be identified to pay for the project or for the repayment of debt prior to approval for construction. To date, \$1,660,000 (25%) in gifts have been received and \$1,375,000 (21%) has been pledged but not received. AgriLife Research has identified Indirect Cost Recoveries as an unrestricted source of funds for repayment of the debt if there is any shortfall in gifts.

Project Justification:

The Department of Animal Science has a rich tradition of excellence in domestic animal reproductive biology and technology. In support of the strategic plan completed in 2019, the Department of Animal Science at Texas A&M University is planning a state-of-the-art Animal Reproductive Biotechnology Center. Combining research, teaching, extension, and public-private partnerships, this Center will advance the Department's vision to become a global leader in domestic animal pregnancy and developmental planning.

The Center will further the Department of Animal Science's pursuit of innovation and collaboration through academic and industry-partnered research. Focusing on the latest techniques and hands-on instruction, the new Center will support the Department's vision to become a touchstone for the future of animal reproductive science.

Scope:

The new Center will include research labs, educational spaces, office space, and animal holding and handling areas supporting the university's leadership in animal reproductive science. In pursuit of continual excellence in reproductive technology research, the Center will provide dedicated research lab space for emerging technologies and practices for both academic and industry partner use.

Focused on domestic animal reproduction research in small and large ruminants, the Center will have a variety of exterior animal holding and handling spaces for specimen collection and hands-on instruction. These areas will be segregated by size and type of ruminants—small ruminants such as goats and sheep, large ruminants such as cattle, deer, and transgenic animals. Designated work areas for each group will include cattle and deer chutes for specimen collection, stanchion space for hands-on instruction in cattle palpation and other skills, and prep and recovery spaces for small ruminants before and after surgery. These workspaces will be supported by load-out areas, holding pens, and alleyway circulation.

The Center will support hands-on learning augmented by virtual demonstration methods. Training spaces—a multipurpose room and seminar room—should be integrated with the primary research areas and animal handling spaces to expose students to new techniques and

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technologies. Selective use of video capture, screen capture, and direct visual observation should be explored and supported in the Center's research, instructional, and animal handling spaces.

Located on a site with ample space for day-use pens, pastures, traps, and other exterior animal spaces, the new Animal Reproductive Biotechnology Center will be approximately 7,500 assignable square feet which translates to approximately 12,600 gross square feet. In addition to the built facility, the Center will include approximately 11,500 square feet of exterior covered space. The integration of the building with the animal handling spaces is critical to properly transfer and process specimens.

Construction on this project is scheduled to start in September 2023 with substantial completion scheduled for January 2025. The total project budget is \$13,000,000.

Other Major Fiscal Impacts:

None.

Strategic Plan Imperative(s) this Item Advances:

This project will advance the following Strategic Plan Imperatives:

Imperative #3: *"Our students will leave the A&M System as responsible and engaged citizens prepared for successful careers in an increasingly global economy."*

Imperative #4: *"The A&M System will increase its prominence by building a robust and targeted research portfolio."*

Imperative #5: *"The A&M System will provide services that respond to the needs of the people of Texas and contribute to the strength of the state's economy."*

Imperative #6: *"The A&M System, in adhering to the high standard of excellence and growth required in this strategic plan, will display prudent financial stewardship and sustainability."*

Combining research, teaching, extension, and public-private partnerships, this Center will advance the Department's vision to become a global leader in domestic animal pregnancy and developmental planning. The new Animal Reproductive Biotechnology Center will further the Department of Animal Science's pursuit of innovation and collaboration through academic and industry-partnered research. Focusing on the latest techniques and hands-on instruction, the new Center will support the Department's vision to become a touchstone for the future of animal reproductive science.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
FACILITIES PLANNING AND CONSTRUCTION
Office of the Deputy Chancellor and Chief Financial Officer
June 27, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the Animal Reproductive Biotechnology Center Project, Texas A&M AgriLife Research, Bryan, Texas (Project No. 06-3397)

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$13,000,000 for the Animal Reproductive Biotechnology Center Project is approved.

The amount of \$1,340,000 is appropriated from Account No. 01-084243 Permanent University Fund Debt Proceeds (AUF), the amount of \$5,000,000 is appropriated from Account No. 01-083538 Revenue Financing System Debt Proceeds (Indirect Cost Recoveries), the amount of \$5,000,000 is appropriated from Account No. 01-083538 Revenue Financing System Debt Proceeds (Gifts), and the amount of \$660,817 is appropriated from Account No. 06-203564 Animal Repro Construction, for construction services and related project costs.

The Animal Reproductive Biotechnology Center Project, Texas A&M AgriLife Research, Bryan, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

Agenda Item No.
June 27, 2023

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approval Recommended:

John Sharp
Chancellor

Phillip Ray
Vice Chancellor for Business Affairs

G. Cliff Lamb, Ph.D., Director
Texas A&M AgriLife Research

Jeffrey W. Savell, Ph.D.
Vice Chancellor and Dean
AgriLife and Life Sciences

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

ANIMAL REPRODUCTIVE BIOTECHNOLOGY CENTER TEXAS A&M AGRILIFE RESEARCH PROJECT NO. 06-3397	PROJECT BUDGET
---	-----------------------

1.	Construction	\$10,640,000
2.	Project Contingency	359,545
3.	Program of Requirements.....	0
4.	Pre-Construction Services	901,700
5.	Commissioning.....	45,000
6.	Construction Testing	90,000
7.	Campus Services & Technology	250,000
8.	Furnishings	320,000
9.	Equipment	0
10.	Other Project Costs.....	49,000
11.	Project Management & Inspection	<u>344,755</u>
12.	TOTAL ESTIMATED COST OF PROJECT	<u>\$13,000,000</u>

ANIMAL REPRODUCTIVE BIOTECHNOLOGY CENTER TEXAS A&M AGRILIFE RESEARCH PROJECT NO. 06-3397	PROJECT SCHEDULE
---	-------------------------

1. Issue A/E RFQ July 2, 2022
2. Issue CMAR RFP July 26, 2022
3. Receive A/E RFQ Responses..... August 16, 2022
4. Receive CMAR RFP Response August 18, 2022
5. Shortlist A/E Firms August 24, 2022
6. Interview A/E Shortlist August 30, 2022
7. A/E Ranked Order Approved by Chancellor September 27, 2022
8. CMAR Ranked Order Approved by Chancellor October 13, 2022
9. Execute A/E Agreement November 8, 2022
10. Execute CMAR Agreement November 28, 2022
11. Complete Schematic Design February 22, 2023
12. Complete Design Development May 25, 2023
13. Receive GMP from CMAR July 21, 2023
14. BOR Approval for Construction August 17, 2023
15. Submit THECB Application August 2023
16. Begin Construction September 2023
17. Complete Construction Documents October 2023
18. Substantial Completion January 2025
19. Owner Occupancy March 2025



Animal Reproductive Biotechnology Center

Texas A&M AgriLife Research

Project No. 06-3397

**TEXAS AGRILIFE RESEARCH
PERMANENT UNIVERSITY FUND
06-3397 Animal Reproductive Biotechnology Center
Available University Fund**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total
BONDS	1,355,000.00			
YEAR 1	1,315,000.00	40,000.00	67,750.00	107,750.00
YEAR 2	1,270,000.00	45,000.00	65,750.00	110,750.00
YEAR 3	1,225,000.00	45,000.00	63,500.00	108,500.00
YEAR 4	1,180,000.00	45,000.00	61,250.00	106,250.00
YEAR 5	1,130,000.00	50,000.00	59,000.00	109,000.00
YEAR 6	1,080,000.00	50,000.00	56,500.00	106,500.00
YEAR 7	1,025,000.00	55,000.00	54,000.00	109,000.00
YEAR 8	965,000.00	60,000.00	51,250.00	111,250.00
YEAR 9	905,000.00	60,000.00	48,250.00	108,250.00
YEAR 10	840,000.00	65,000.00	45,250.00	110,250.00
YEAR 11	775,000.00	65,000.00	42,000.00	107,000.00
YEAR 12	705,000.00	70,000.00	38,750.00	108,750.00
YEAR 13	630,000.00	75,000.00	35,250.00	110,250.00
YEAR 14	555,000.00	75,000.00	31,500.00	106,500.00
YEAR 15	475,000.00	80,000.00	27,750.00	107,750.00
YEAR 16	390,000.00	85,000.00	23,750.00	108,750.00
YEAR 17	300,000.00	90,000.00	19,500.00	109,500.00
YEAR 18	205,000.00	95,000.00	15,000.00	110,000.00
YEAR 19	105,000.00	100,000.00	10,250.00	110,250.00
YEAR 20	-	105,000.00	5,250.00	110,250.00
		<u>\$ 1,355,000.00</u>	<u>\$ 821,500.00</u>	<u>\$ 2,176,500.00</u>

Estimated issuance costs and rounding of \$15,000 are included in this schedule.
Long-term rates are assumed to be 5.0%. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 06/08/2023

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

**TEXAS AGRILIFE RESEARCH
REVENUE FINANCING SYSTEM
06-3397 Animal Reproductive Biotechnology Center
Indirect Cost Recoveries**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	5,050,000.00				
YEAR 1	4,895,000.00	155,000.00	252,500.00	407,500.00	468,625.00
YEAR 2	4,735,000.00	160,000.00	244,750.00	404,750.00	465,462.50
YEAR 3	4,565,000.00	170,000.00	236,750.00	406,750.00	467,762.50
YEAR 4	4,390,000.00	175,000.00	228,250.00	403,250.00	463,737.50
YEAR 5	4,205,000.00	185,000.00	219,500.00	404,500.00	465,175.00
YEAR 6	4,010,000.00	195,000.00	210,250.00	405,250.00	466,037.50
YEAR 7	3,805,000.00	205,000.00	200,500.00	405,500.00	466,325.00
YEAR 8	3,590,000.00	215,000.00	190,250.00	405,250.00	466,037.50
YEAR 9	3,365,000.00	225,000.00	179,500.00	404,500.00	465,175.00
YEAR 10	3,130,000.00	235,000.00	168,250.00	403,250.00	463,737.50
YEAR 11	2,880,000.00	250,000.00	156,500.00	406,500.00	467,475.00
YEAR 12	2,620,000.00	260,000.00	144,000.00	404,000.00	464,600.00
YEAR 13	2,345,000.00	275,000.00	131,000.00	406,000.00	466,900.00
YEAR 14	2,055,000.00	290,000.00	117,250.00	407,250.00	468,337.50
YEAR 15	1,750,000.00	305,000.00	102,750.00	407,750.00	468,912.50
YEAR 16	1,435,000.00	315,000.00	87,500.00	402,500.00	462,875.00
YEAR 17	1,100,000.00	335,000.00	71,750.00	406,750.00	467,762.50
YEAR 18	750,000.00	350,000.00	55,000.00	405,000.00	465,750.00
YEAR 19	385,000.00	365,000.00	37,500.00	402,500.00	462,875.00
YEAR 20	-	385,000.00	19,250.00	404,250.00	464,887.50
		<u>\$ 5,050,000.00</u>	<u>\$ 3,053,000.00</u>	<u>\$ 8,103,000.00</u>	<u>\$ 9,318,450.00</u>

Estimated issuance costs and rounding of \$50,000 are included in this schedule.
Long-term rates are assumed to be 5.0%. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 06/08/2023

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

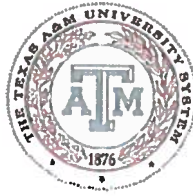
**TEXAS AGRILIFE RESEARCH
REVENUE FINANCING SYSTEM
06-3397 Animal Reproductive Biotechnology Center
Gifts**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	5,000,000.00				
YEAR 1	4,000,000.00	1,000,000.00	250,000.00	1,250,000.00	1,437,500.00
YEAR 2	3,000,000.00	1,000,000.00	200,000.00	1,200,000.00	1,380,000.00
YEAR 3	2,000,000.00	1,000,000.00	157,500.00	1,157,500.00	1,331,125.00
YEAR 4	1,000,000.00	1,000,000.00	105,000.00	1,105,000.00	1,270,750.00
YEAR 5	-	1,000,000.00	55,000.00	1,055,000.00	1,213,250.00
		<u>\$ 5,000,000.00</u>	<u>\$ 767,500.00</u>	<u>\$ 5,767,500.00</u>	<u>\$ 6,632,625.00</u>

Short-term rates are assumed to be 5.0% in the first two years, 5.25% in the third and fourth year, and 5.5% in year 5. Rates are subject to market change.
Prepared by the Office of the Treasurer - Treasury Services 06/08/2023

Rates are subject to market change.

Backstop for any shortfall in Gifts: Indirect Cost Recoveries



THE TEXAS A&M UNIVERSITY SYSTEM

February 28, 2023

MEMORANDUM

TO: Mr. Michael Plank
Chair, Committee on Buildings & Physical Plant
Board of Regents

Mr. John Sharp
Chancellor

THROUGH: Mr. Billy C. Hamilton *BA*
Deputy Chancellor and Chief Financial Officer

THROUGH: Ms. Maria Robinson *MR*
Chief Investment Officer and Treasurer

FROM: Mr. Brett McCully *MM*
Chief Facilities Officer

SUBJECT: Proposed Revision to Capital Plan Project Amount
Animal Reproductive Biotechnology Center
Project No. 06-3397
Proposed Project Planning Amount \$13,000,000
Texas A&M AgriLife Research

The Texas A&M University System Board of Regents (BOR) approved the A&M System Capital Plan at the August 2021 meeting, which included the Texas A&M AgriLife Research (AgriLife Research) Animal Reproductive Biotechnology Center (ARBC) on the RELLIS campus for initiation in 2023 at a planning amount of \$9,991,833.

On April 28, 2022, a request was made asking Facilities Planning & Construction to manage the project at RELLIS. On November 8, 2022, an agreement between the BOR and Stantec Architecture, Inc. was finalized to initiate design. The Program of Requirements (POR) validation step revealed a 30% disparity between the POR budget finalized in May 2021 and the current pricing. Differences were found primarily in concrete, steel, and casework pricing, as well as inadequate escalation, which assumed design starting in October 2022. Design start was delayed due to changes in AgriLife administration. Scope changes are relatively minor and strictly a result of preliminary design discoveries, such as a requirement for a fire sprinkler pump due to the low water pressure at RELLIS. Other originally planned scope has been moved to alternate scope items in order to minimize the requested budget increase.

Mr. John Sharp
Mr. Michael Plank
February 28, 2023
Page 2


Funding for the increase to this project is as follows:

<u>Funding Source</u>	<u>Planning Amount</u>	<u>Proposed Adjustment</u>	<u>Proposed Planning Amount</u>	<u>Debt Service Source</u>
Permanent University Fund Debt Proceeds	\$0	\$1,340,000	\$1,340,000	Available University Fund
Revenue Financing System Debt Proceeds	\$0	\$5,000,000	\$5,000,000	Indirect Cost Recoveries
Revenue Financing System Debt Proceeds	\$0	\$5,000,000	\$5,000,000	Gifts*
Cash (Gifts)	<u>\$9,991,833</u>	<u>\$(8,331,833)</u>	<u>\$1,660,000</u>	N/A
Total project cost	<u>\$9,991,833</u>	<u>\$3,008,167</u>	<u>\$13,000,000</u>	

*System policy requires 50% of the gift funds in hand and an additional 25% in documented pledges before approval for construction on the project is received. For any gift funds not in hand, an unrestricted source of funds must be identified to pay for the project or for the repayment of debt prior to approval for construction. To date \$1,660,000 (24.9%) has been received and \$1,375,000 (20.6%) has been pledged but not received. AgriLife Research has identified Indirect Cost Recoveries as an unrestricted source of funds for repayment of the debt if there is any shortfall.

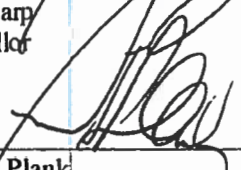
By notice of this memo, approval is recommended to increase the project planning amount of the AgriLife Research ARBC Project at RELLIS from \$9,991,833 to \$13,000,000. This is an increase of 30%. The availability of funding has been verified by Treasury Services. Unless we receive direction otherwise, the adjustment of the capital plan amount and project funding will be brought forward with the request for construction approval for this project.

Approved:



John Sharp
Chancellor

3/1/2023
Date



Michael Plank
Chair, Committee on Buildings & Physical Plant

3/3/2023
Date

AGENDA ITEM BRIEFING

Submitted by: Mark A. Welsh III., Interim President
Texas A&M University

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the CUP Structural Repairs Project, Texas A&M University, College Station, Texas (Project No. 02-3349)

Background and Prior Actions:

The CUP Structural Repairs Project was included as an approved project on the FY 2023 – FY 2027 A&M System Capital Plan approved by the Board at the May 2022 meeting.

Proposed Board Action:

- (1) Approve the project scope and budget.
- (2) Appropriate \$6,030,000 for construction services and related project costs. \$670,000 has been previously appropriated to this project.
- (3) Approve construction of the CUP Structural Repairs Project at Texas A&M University (Texas A&M).

Funding/Budget Amount:

<u>Funding Source</u>	<u>Budget Amount</u>	<u>Average Estimated Annual Debt Service</u>	<u>Debt Service Source</u>
Revenue Financing System Debt Proceeds	<u>\$6,700,000</u>	\$492,581	Utility Revenue
Total Project Funds	<u>\$6,700,000</u>		

Project Justification:

The Central Utility Plant Boiler Room and Basement were constructed in 1916. They house a major boiler and equipment that is mission-critical for meeting campus heating, hot water, steam, and electrical power needs. There are numerous structural issues along with inadequate lighting levels that need to be addressed to make this a safe workplace for the personnel who operate and maintain this equipment. Water infiltration that has caused some of the structural problems also needs to be addressed. Existing concrete flooring needs to be leveled and an access ramp must be installed for conveyance of materials and equipment to allow for maintenance and repair. These improvements are essential to create a safe workplace and ensure reliable boiler and utility system service, as relocation or replacement of the utility plant is not feasible.

Scope:

There are numerous structural issues that need to be addressed including exposed, corroded rebar and spalled concrete in the boiler room roof, spalling concrete, and cracking due to settlement or heaving soil and missing portions from structural members in the basement. Water infiltration in these areas also needs to be addressed.

Repairs to correct structural issues will include the following:

- 1) Remove gravel along exterior, fine grade with increased slope away from building and replace surface
- 2) Waterproof interior wall
- 3) Epoxy crack injection at damaged interior surfaces
- 4) Carbon Fiber Reinforced Polymer roof deck strengthening
- 5) Remove and replace damaged exterior brick and brick pilasters
- 6) Repoint and repair cracked brick and mortar
- 7) Dutchman terra cotta repair at roofline
- 8) Concrete crack repairs
- 9) Expansion joint repairs
- 10) Epoxy crack injection sealing
- 11) Remove and replace window sealant
- 12) Replace existing window louvers
- 13) Clean existing brick
- 14) Clean and coat steel trusses
- 15) Remove and replace portions of damaged interior floors

In addition, substandard lighting will be upgraded to LED lighting, both areas will be painted, floors will be leveled with epoxy flooring and an access ramp will be added in the boiler room.

Construction on this project is scheduled to start in October 2023 with substantial completion scheduled for November 2024. The total project budget is \$6,700,000.

Other Major Fiscal Impacts:

None.

Strategic Plan Imperative(s) this Item Advances:

The CUP Structural Repairs Project supports The Texas A&M University System strategic imperative 6: “The A&M System, in adhering to the high standard of excellence and growth required in this strategic plan, will display prudent financial stewardship and sustainability.” Instead of seeking funding to construct a new facility to house CUP equipment, essential structural repairs and lighting upgrades will be completed to ensure the existing utility plant space is safe and structurally sound, which is the most cost-effective approach.

Agenda Item No.

TEXAS A&M UNIVERSITY

Office of the President

August 1, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Approval of the Project Scope and Budget, Appropriation for Construction Services, and Approval for Construction for the CUP Structural Repairs Project, Texas A&M University, College Station, Texas (Project No. 02-3349)

I recommend adoption of the following minute order:

“The project scope along with a project budget of \$6,700,000 for the CUP Structural Repairs Project is approved.

The amount of \$6,030,000 is appropriated from Account No. 01-083540 Revenue Financing System Debt Proceeds (Utility Revenue), for construction services and related project costs.

The CUP Structural Repairs Project, Texas A&M University, College Station, Texas, is approved for construction.

The Board of Regents of The Texas A&M University System (Board) reasonably expects to incur debt in one or more obligations for this project, and all or a portion of the proceeds received from the sale of such obligations is reasonably expected to be used to reimburse the account(s) for amounts previously appropriated and/or expended from such account(s).

As required by Section 5(a) of the Master Resolution of the Revenue Financing System, the Board hereby determines that it will have sufficient funds to meet the financial obligations of The Texas A&M University System, including sufficient Pledged Revenues to satisfy the Annual Debt Service Requirements of the Revenue Financing System and to meet all financial obligations of the Board relating to the Revenue Financing System and that

Agenda Item No.
August 1, 2023

the Participants, on whose behalf the debt is issued, possess the financial capacity to satisfy their Direct Obligations.”

Respectfully submitted,

Mark A. Welsh III
Interim President

Approval Recommended:

John Sharp
Chancellor

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Phillip Ray
Vice Chancellor for Business Affairs

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

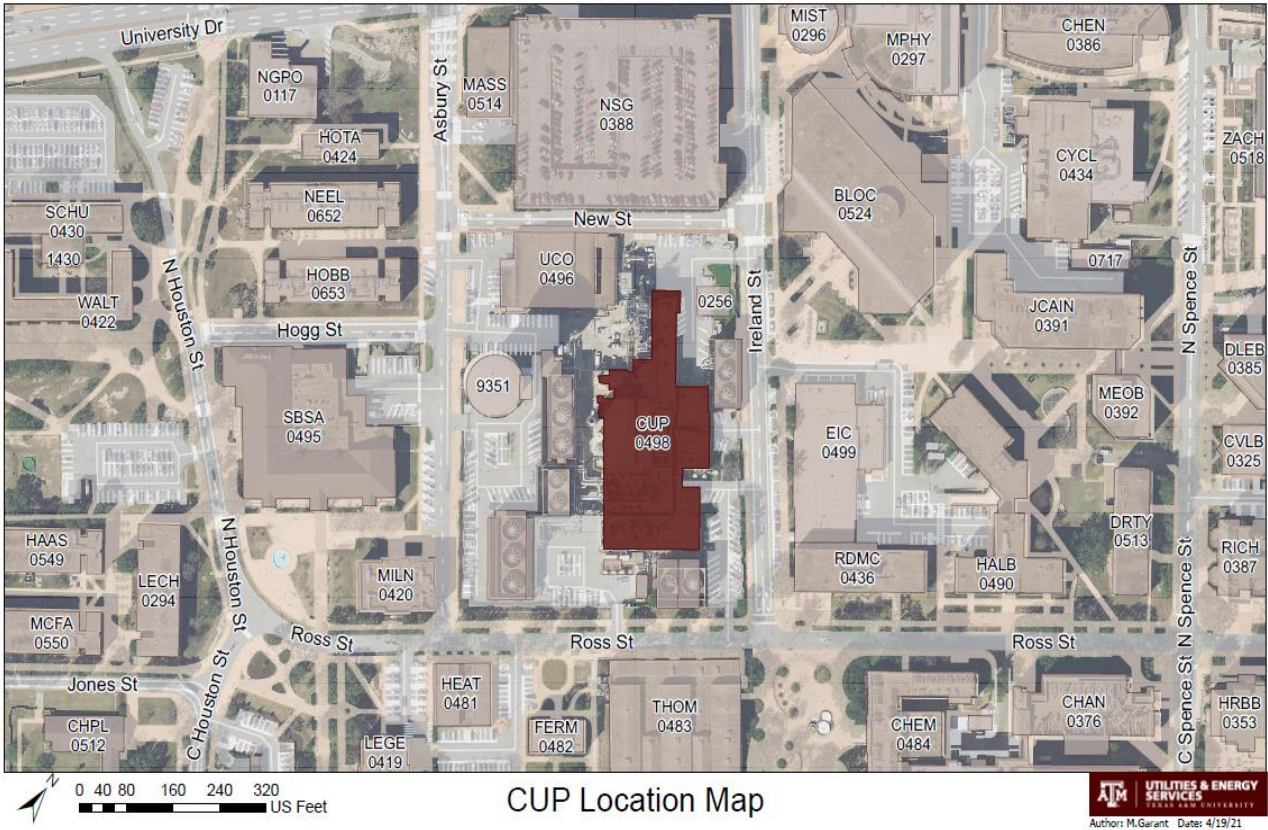
CUP STRUCTURAL REPAIRS	PROJECT BUDGET
TEXAS A&M UNIVERSITY	
PROJECT NO. 02-3349	

1. Construction	\$5,233,500
2. Project Contingency	\$645,750
3. Pre-Construction Services	\$574,600
4. Construction Testing	\$31,000
5. Campus Services & Technology	\$20,000
6. Project Management & Inspection	<u>\$195,150</u>
7. TOTAL ESTIMATED COST OF PROJECT	<u>\$6,700,000</u>

CUP STRUCTURAL REPAIRS
TEXAS A&M UNIVERSITY
PROJECT NO. 02-3349

PROJECT SCHEDULE

1. BOR Approval to Include in Capital Plan September 22, 2021
2. Issue A/E RFQOctober 12, 2021
3. Receive A/E RFQ Responses.....November 2, 2021
4. Shortlist A/E FirmsNovember 4, 2021
5. Interview A/E ShortlistNovember 18, 2021
6. A/E Design Kick-Off March 3, 2022
7. Execute A/E Agreement April 12, 2022
8. Complete Schematic Design May 31, 2022
9. Complete Design Development September 19, 2022
10. Issue CMAR RFP September 20, 2022
11. Receive CMAR RFP ResponseOctober 13, 2022
12. Execute CMAR AgreementNovember 15, 2022
13. Receive GMP from CMAR March 10, 2023
14. BOR Approval for Construction August 17, 2023
15. Begin ConstructionOctober 2023
16. Complete Construction DocumentsNovember 2023
17. Substantial CompletionNovember 2024
18. Owner OccupancyNovember 2024



CUP Structural Repairs

Texas A&M University

Project No. 02-3349

**TEXAS A&M UNIVERSITY
REVENUE FINANCING SYSTEM
CUP Structural Repairs
Utility Revenue**

Dates	Outstanding Principal	Principal Amount	Interest Amount	Annual Total	Coverage 1.15x
BONDS	6,770,000.00				
YEAR 1	6,635,000.00	135,000.00	355,425.00	490,425.00	563,988.75
YEAR 2	6,490,000.00	145,000.00	348,337.50	493,337.50	567,338.13
YEAR 3	6,340,000.00	150,000.00	340,725.00	490,725.00	564,333.75
YEAR 4	6,180,000.00	160,000.00	332,850.00	492,850.00	566,777.50
YEAR 5	6,010,000.00	170,000.00	324,450.00	494,450.00	568,617.50
YEAR 6	5,830,000.00	180,000.00	315,525.00	495,525.00	569,853.75
YEAR 7	5,645,000.00	185,000.00	306,075.00	491,075.00	564,736.25
YEAR 8	5,450,000.00	195,000.00	296,362.50	491,362.50	565,066.88
YEAR 9	5,245,000.00	205,000.00	286,125.00	491,125.00	564,793.75
YEAR 10	5,030,000.00	215,000.00	275,362.50	490,362.50	563,916.88
YEAR 11	4,800,000.00	230,000.00	264,075.00	494,075.00	568,186.25
YEAR 12	4,560,000.00	240,000.00	252,000.00	492,000.00	565,800.00
YEAR 13	4,305,000.00	255,000.00	239,400.00	494,400.00	568,560.00
YEAR 14	4,040,000.00	265,000.00	226,012.50	491,012.50	564,664.38
YEAR 15	3,760,000.00	280,000.00	212,100.00	492,100.00	565,915.00
YEAR 16	3,465,000.00	295,000.00	197,400.00	492,400.00	566,260.00
YEAR 17	3,155,000.00	310,000.00	181,912.50	491,912.50	565,699.38
YEAR 18	2,830,000.00	325,000.00	165,637.50	490,637.50	564,233.13
YEAR 19	2,485,000.00	345,000.00	148,575.00	493,575.00	567,611.25
YEAR 20	2,120,000.00	365,000.00	130,462.50	495,462.50	569,781.88
YEAR 21	1,740,000.00	380,000.00	111,300.00	491,300.00	564,995.00
YEAR 22	1,340,000.00	400,000.00	91,350.00	491,350.00	565,052.50
YEAR 23	915,000.00	425,000.00	70,350.00	495,350.00	569,652.50
YEAR 24	470,000.00	445,000.00	48,037.50	493,037.50	566,993.13
YEAR 25	-	470,000.00	24,675.00	494,675.00	568,876.25
		<u>\$ 6,770,000.00</u>	<u>\$ 5,544,525.00</u>	<u>\$ 12,314,525.00</u>	<u>\$ 14,161,703.79</u>

Estimated Issuance Costs of \$70,000 are included in this schedule.

Long-term rates are assumed to be 5.25%. Rates are subject to market change.

Prepared by the Office of the Treasurer - Treasury Services 05/08/2023

Rates are subject to market change. Amounts are preliminary estimates that will be revised at the time bonds are issued.

Facilities Planning & Construction Project Status Report

Effective 07/31/2023

Projects in Planning	21 Projects	\$1,498,426,689
Projects in Design	19 Projects	\$1,158,474,369
Projects in Construction	23 Projects	\$1,121,467,401
Projects in Private Development	17 Projects	\$1,169,254,779
Combined Total:	80 Projects	\$4,947,623,238

Projects in Planning:

Bryan, TX

01-3418	Quantum & Artificial Intelligence Chip Fabrication	\$100,000,000 FY2024
06-3339	AgriLife Research Meat Science & Technology Center Relocation	\$123,900,000 FY2025
09-3394	TEEX RELLIS Training Props	\$25,300,000 FY2024
26-3351	RELLIS Avenue D South Extension and Utility Upgrades	\$13,500,000 FY2024
28-3419	Hypersonic Wind Tunnel	\$30,000,000 FY2024

Canyon, TX

18-3369	Public Safety Facility	\$9,975,000 FY2025
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College Station, TX

02-3345	CUP Generator Replacement Project	\$26,500,000 FY2022
02-3378	Clinical Veterinary Teaching and Research Complex*	\$175,000,000 FY2022
02-3403	Olsen Field at Blue Bell Park Renovations	\$60,000,000 FY2026
02-3404	West Campus Player Development and Ellis Field Renovations	\$25,000,000 FY2025
02-3414	Visualization, Fine and Performing Arts Building	\$295,000,000 FY2025

Commerce, TX

21-3401	Morris Recreation Center Expansion	\$17,500,000 FY2024
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Dallas, TX

23-3400	School of Dentistry Main Building Renovation	\$22,400,000
		FY2023

Galveston, TX

10-3354	Infrastructure, Dock Improvements, and Ship FF&E - PhII	\$72,500,000
		FY2022

Houston, TX

02-3417	Space Collaboration Facility	\$200,000,000
		FY2024
23-3320	Texas A&M University TMC3 Biomedical Research Building*	\$100,000,000
		FY2022

Killeen, TX

24-3391	Central Texas Research Annex	\$10,000,000
		FY2026

Prairie View, TX

05-3380	Teaching and Academic Student Support Services Facility*	\$44,922,833
		FY2022

San Antonio, TX

25-3402	Educare Building	\$16,970,000
		FY2024
25-3421	Multipurpose Field, Competition Track & Softball Field Upgrades	\$9,958,856
		FY2024

Stephenville, TX

04-3415	Lillian Street Dorm	\$120,000,000
		FY2025

Total of Projects in Planning	\$1,498,426,689
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Projects in Design:

Austin, TX

30-3317	TDEM Headquarters and State Emergency Operations Center	\$360,674,500
	Energy Architecture	

Bryan, TX

01-3372	STEM Education Center at RELIS*	\$43,425,406
	PBK Architects	
06-3397	Animal Reproductive Biotechnology Center	\$13,000,000
	Stantec Architecture	

Canyon, TX

06-3377	Amarillo Research & Extension Center at Canyon	\$30,000,000
	Parkhill	
18-3364	Renovation of an Education Building and Health/Safety Upgrades*	\$44,922,833
	DLR Group Inc.	

Commerce, TX

21-3384	Agricultural Multipurpose Education and Training Center*	\$44,922,833
Harley Ellis Devereaux		
21-3390	New Event Center/Arena	\$58,000,000
Gensler & Associates		

Corpus Christi, TX

15-3268	Arts & Media Building*	\$74,922,833
Barnes Gromatzky Kosarek Architects		

Galveston, TX

10-3381	Engineering Classroom and Research Building*	\$50,992,125
Page/		

Houston, TX

23-3399	EnMED Discovery Tower Labs & Office Buildout - Phase I	\$15,000,000
Page/		

Killeen, TX

24-3376	Central Operational Reliability and Efficiency Facility (CORE)*	\$49,900,000
PBK Architects		

Kingsville, TX

17-3383	Deferred Maintenance*	\$47,922,833
Halff Associates, Inc.		

Laredo, TX

16-3382	Health Sciences Education and Research Center & Western Hemispheric Trade Center Expansion*	\$71,200,000
Ayers Saint Gross		

McAllen, TX

23-3374	Nursing Education & Research Center - McAllen*	\$49,948,556
Page/		

San Antonio, TX

25-3387	Public Health and Education Building*	\$54,219,617
Alamo Architects		

Stephenville, TX

04-3360	Health Sciences & Human Services Building - Stephenville*	\$80,000,000
Perkins+Will, Inc.		
04-3361	Dick Smith Library Renovation & Expansion	\$9,500,000
Brown Reynolds Watford		

Texarkana, TX

22-3385	Business, Engineering, and Technology Building*	\$44,922,833
Treanor Architects		

Vernon, TX

06-3407 AgriLife Vernon Campus Storm Repairs
Parkhill

\$15,000,000

Total of Projects in Design

\$1,158,474,369

*CCAP projects will not move forward until Legislative requirements are met, POR is complete and funding is finalized.

Projects in Construction:

Bryan, TX

26-3365 RELLIS Campus Infrastructure Phase 4B		\$7,744,000
J. T. Vaughn Construction, LLC	Substantial Completion Date:	01/17/2024
Status: On Schedule	Construction Work Completed:	55%

28-3230 Industrial Distribution Building No. 1		\$20,020,000
J. T. Vaughn Construction, LLC	Substantial Completion Date:	06/01/2023
Status: Substantially Complete	Construction Work Completed:	100%

28-3321 Ballistic Aero-Optics and Materials Facility		\$54,626,000
Bartlett Cocke General Contractors	Substantial Completion Date:	04/26/2024
Status: On Schedule	Construction Work Completed:	81%

28-3341 TEES Detonation Research Test Facility		\$9,500,000
J. T. Vaughn Construction, LLC	Substantial Completion Date:	12/13/2023
Status: On Schedule	Construction Work Completed:	28%

30-3338 TDEM Warehouse at RELLIS		\$33,226,353
Tellepsen Builders, L.P.	Substantial Completion Date:	06/29/2023
Status: Substantially Complete	Construction Work Completed:	100%

Canyon, TX

18-3363 Bain Athletic Expansion Phase II		\$8,979,500
Western Builders	Substantial Completion Date:	03/20/2024
Status: On Schedule	Construction Work Completed:	48%

College Station, TX

02-3279 Business Education Complex		\$84,197,309
Skanska USA Building, Inc.	Substantial Completion Date:	09/16/2024
Status: On Schedule	Construction Work Completed:	38%

02-3316 SUP3 Expansion		\$20,930,520
ACO Mechanical, LTD.	Substantial Completion Date:	06/15/2023
Status: Substantially Complete	Construction Work Completed:	100%

02-3343A The Bright Building Area Development		\$182,735,550
Manhattan Construction Company	Substantial Completion Date:	08/06/2024
Status: On Schedule	Construction Work Completed:	50%

02-3343B Bright Area Development - New Indoor Track		\$55,000,000
Austin Commercial, LP	Substantial Completion Date:	01/15/2024
Status: On Schedule	Construction Work Completed:	70%

06-3344 Borlaug Southern Crop Improvement Center Renovations		\$60,000,000
Bartlett Cocke General Contractors	Substantial Completion Date:	04/02/2024
Status: On Schedule	Construction Work Completed:	28%

23-3412	Texas A&M Health ESCO 2023		\$14,745,526
	Ameresco	Substantial Completion Date:	
Status:	On Schedule	Construction Work Completed:	1%
28-3324	Nuclear Engineering Education Building		\$15,100,000
	Bartlett Cocke General Contractors	Substantial Completion Date:	05/21/2024
Status:	On Schedule	Construction Work Completed:	10%
Commerce, TX			
21-3337	Student Services Building		\$19,500,000
	Satterfield and Pontikes Construction, Inc.	Substantial Completion Date:	02/17/2024
Status:	Behind Schedule	Construction Work Completed:	6%
Ft. Worth, TX			
01-3359	Ft. Worth Law & Education Building		\$150,000,000
	Turner Carcon Source JV	Substantial Completion Date:	10/14/2025
Status:	On Schedule	Construction Work Completed:	2%
04-3281	Interprofessional Education Building		\$66,000,000
	Holder Construction Group, LLC	Substantial Completion Date:	03/22/2024
Status:	Behind Schedule	Construction Work Completed:	53%
Galveston, TX			
10-3353	Infrastructure, Dock Improvements, and Ship FF&E - Phi		\$35,000,000
	J. T. Vaughn Construction, LLC	Substantial Completion Date:	04/01/2025
Status:	On Schedule	Construction Work Completed:	4%
Prairie View, TX			
05-3300	Engineering Classroom & Research Building		\$70,460,643
	J. T. Vaughn Construction, LLC	Substantial Completion Date:	05/17/2023
Status:	Substantially Complete	Construction Work Completed:	100%
05-3370	Fire Alarm System Replacements PH2		\$11,002,000
	Britt Rice Construction Company, LP	Substantial Completion Date:	08/24/2024
Status:	On Schedule	Construction Work Completed:	1%
San Antonio, TX			
25-3305	Recreation Center		\$19,200,000
	Byrne Construction Services	Substantial Completion Date:	06/06/2024
Status:	On Schedule	Construction Work Completed:	29%
25-3309	TAMU-San Antonio Housing Phase II		\$32,500,000
	Bartlett Cocke General Contractors	Substantial Completion Date:	05/31/2024
Status:	On Schedule	Construction Work Completed:	27%
Stephenville, TX			
04-3326	Tarleton State University Parking Garage		\$41,000,000
	Byrne Construction Services	Substantial Completion Date:	06/13/2024
Status:	On Schedule	Construction Work Completed:	24%

04-3396	Convocation Center	\$110,000,000
J. T. Vaughn Construction, LLC	Substantial Completion Date:	05/10/2025
Status: On Schedule	Construction Work Completed:	3%
Total of Projects in Construction		\$1,121,467,401
Projects in Private Development:		
Bryan, TX		
01-3285	Data Center	\$150,000,000
01-3286	Commercial Office Building	\$17,000,000
01-3287	Student Support Building	\$12,000,000
26-3350	RELLIS Substation	\$2,164,000
26-3355	BTU Substation at RELLIS	\$13,000,000
College Station, TX		
02-3165	Century Square	\$355,000,000
02-3289	Intergenerational Living Center	\$35,000,000
02-3329	Aggie Park	\$25,000,000
02-3406	Union Pacific Bush 4141 Locomotive & Marine One Helicopter Pavilion	\$29,000,000
02-3416	Parking Lot Expansion for the Association of Former Students	\$390,779
02-3420	Aplin Center	TBD
Commerce, TX		
21-3292	Development Tract (~8 acres at corner of Culver and Hwy 24)	\$10,000,000
Dallas, TX		
23-3328	Dentistry Development Tract	\$30,000,000
Houston, TX		
23-3293	Innovation Plaza	\$401,000,000
Prairie View, TX		
05-3335	50 Acre Development Tract	\$80,000,000
Stephenville, TX		
04-3327	Hotel & Conference Center	TBD
Texarkana, TX		
22-3217	Student Recreation Center at TAMU-T	\$9,700,000
Total of Projects in Private Development		\$1,169,254,779

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM

Office of the Chancellor

August 9, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Adoption of a Resolution Honoring Dr. Marc A. Nigliazzo of Texas A&M University-Central Texas and Bestowing the Title of President Emeritus

I respectfully request the Board of Regents' approval of the following resolution honoring Dr. Marc A. Nigliazzo for his 13 years of service as president of Texas A&M University-Central Texas.

“WHEREAS, Dr. Marc A. Nigliazzo is a native Texan, raised in the Brazos Valley and received a bachelor's degree from The University of Texas, his master's degree from Texas A&M University, and a doctoral degree from the University of New Mexico at Albuquerque; and

WHEREAS, his extensive 57-year career in higher education has been grounded by his love for the classroom where he began as a teaching assistant and graduate assistant at Texas A&M University from 1966 to 1967, a teaching assistant at the University of New Mexico from 1967 to 1970, an Instructor of English and tenured Assistant Professor at Adams State College of Colorado from 1970 to 1973, Associate Professor of English at Odessa College from 1973 to 1977, Associate Professor of English at Boise State University from 1977 to 1978, Associate Professor of English at Del Mar College from 1978 to 1985, and Professor of English from 1985 to 1995 at Galveston College; and

WHEREAS, his administrative career began as the Director of Freshman Composition at Odessa College from 1974 to 1977, Coordinator of the Developmental English program at Boise State University from 1977 to 1978, Director of the English Learning Center at Del Mar College from 1978 to 1980, Co-chair of the Department of English, Philosophy, and Reading at Del Mar College from 1978 to 1980 where he also served as Chair from 1980 to 1985, Vice President and Dean of Instruction at Galveston College from 1985 to 1991, President of Galveston College from 1991 to 1995, President of Temple College from 1995 to 2008, Vice President, Rio Rancho Operations and Branch Academic Affairs, University of New Mexico from 2008 to 2009, and President of Arizona Western College from 2009 to 2010; and

WHEREAS, in April 2010, following a nationwide search, the Board of Regents of The Texas A&M University System named Dr. Nigliazzo Texas A&M University-Central Texas' Inaugural President; and

WHEREAS, at the beginning of his presidency, Dr. Nigliazzo grew the state's first and only upper-level university into a broadly diverse and unique institution of higher education and the 10th regional university in The Texas A&M University System, diligently overseeing the university's initial application for accreditation with the Southern Association of Colleges and Schools and the first self-study which granted accredited status to the university; and

WHEREAS, he has led the growth and development of both undergraduate and graduate degree programs, ensuring accessibility, affordability and degree attainment that has resulted in more than 10,000 undergraduate and graduate degree recipients, many of whom have been the first in their families to become a university graduate; and

WHEREAS, he has continuously and purposefully engaged local and regional leaders from business and industry, economic development, research, military, and philanthropy, raising more than \$10M in scholarship support with the Texas A&M University-Central Texas Foundation; and

WHEREAS, through his tireless advocacy during the crucial first years of the university's existence, he thoughtfully initiated the campus planning and construction that resulted in the General Robert M. Shoemaker Founders Hall, Warrior Hall and Beck Family Heritage Hall, as well as working to secure the full ownership of the land that is 672 acres deeded to The Texas A&M University System, with the new \$50M Centralized Operational Reliability and Efficiency (CORE) facility funded by both state and system funds and scheduled to break ground in spring 2024; and

WHEREAS, he has encouraged the impressive growth of research and economic development programs at Texas A&M University-Central Texas which has resulted in Hispanic-Serving Institution and Minority-Serving Institution designations by the U.S. Department of Education and the acquisition of numerous federal and state research grants totaling more than \$15M in the past five years with a continuing exponential funding growth with a wide range of entities including the Department of Agriculture, Department of Education, Department of Homeland Security, National Science Foundation, U.S. Air Force Research Lab, U.S. Army Operational Test Command, U.S. Army Research Lab and many others; and

WHEREAS, he has enthusiastically supported the overall student experience at Texas A&M University-Central Texas, embracing the initiation of programs including student wellness, student counseling and the development of the Warrior Center for Student Success. Further, he encouraged and endorsed the university's engagement with the American Democracy Project for the purpose of preparing the next generation of informed and engaged citizens which has been a student-lead initiative, resulting in repeated national recognition and designation as a NASPA LEAD institution from 2013 to 2020 and the ALL-IN Campus Democracy Challenge Student Voter Engagement Recognition, the Bronze Seal in 2016 and 2020, the Gold Seal in 2018, and Voter Friendly Campus from 2017-2018, 2021-2022 and 2023-2024; and

WHEREAS, Dr. Nigliazzo is well-known and beloved by Texas A&M University-Central Texas Warriors for his commitment to student learning, his indefatigable positivity and practicality, his dedication to degree attainment for all students and his demonstration of support for each member of the Warrior Family; and

WHEREAS, in his inaugural remarks which are recorded in the Texas A&M University-Central Texas Library Archives, Dr. Nigliazzo recognized and honored his loving wife, Lynn, and his beloved daughter, Caryn, for their lifetime of support for his career; they are likewise honored and included in this resolution at the conclusion of his career, graciously acknowledged and offered the sincerest gratitude and well wishes of The Texas A&M University System and the Board of Regents; now, therefore, be it

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August 9, 2023

RESOLVED, that the Board of Regents of The Texas A&M University System desires to express its appreciation for the exceptional leadership shown by Dr. Marc A. Nigliazzo to Texas A&M University-Central Texas; and, be it, further

RESOLVED, that in honor of his service to The Texas A&M University System, we bestow the title of President Emeritus, Texas A&M University-Central Texas, with all the rights and privileges pertaining thereto, upon Dr. Marc A. Nigliazzo; and, be it, further

RESOLVED, that this resolution be included in the minutes, and copies thereof signed by the Chairman of the Board of Regents of The Texas A&M University System, and be presented to Dr. Marc A. Nigliazzo and to the Archives of Texas A&M University-Central Texas as a permanent mark of this Board's appreciation and gratitude for a job extremely well done.

ADOPTED, this 16th day of August, 2023.”

Respectfully submitted,

John Sharp
Chancellor

Approval Recommended:

Approved for Legal Sufficiency:

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Ray Bonilla
General Counsel

AGENDA ITEM BRIEFING

Submitted by: Joe Elabd, Ph.D., Vice Chancellor for Research
The Texas A&M University System

Subject: Establishment of the Texas A&M Space Institute

Proposed Board Action:

Establish the Texas A&M Space Institute as an organizational unit of The Texas A&M University System (A&M System).

Background Information:

A new era of innovation in space exploration and commercial aerospace fields is envisioned by the Texas Legislature for the space economy through the creation of the Texas Space Commission (TSC), the Space Exploration and Aeronautics Research Fund, and the Texas Aerospace Research and Space Economy Consortium (Space Consortium), per House Bill 3447, Regular Session by Representative Greg Bonnen, M.D. '88. The Texas A&M Space Institute will strategically lead the A&M System, Texas A&M University (Texas A&M), and associated agencies' efforts, to accelerate innovation through strategic planning in support of the Space Consortium, consisting of cross-sectoral engagement with the space community at-large. The institute will also support the Texas Research and Space Economy Consortium through the establishment of a Space Consortium that will advance Texas leadership in civil aviation, military aerospace, space economic development and space- related academic research and workforce development. The Texas Legislature appropriated \$200 million for the construction of a new Texas A&M facility adjacent to the NASA Johnson Space Center (JSC), which will house the TSC, the Space Consortium, the Texas Space Aeronautics and Curation Exploratorium (T-Space), and the Texas A&M Space Institute.

Texas currently accounts for 10% of the national space economy, and the potential for leading the competition being exerted by other states requires new strategies and focus on critical new alignments that can be forged by higher education institutions within the aerospace industry.

Texas A&M is a space-grant university with a long history of conducting basic and applied research and workforce development in human space exploration. Interdisciplinary space-related research occurs in more than 12 colleges/schools across Texas A&M, with broad expertise in space-related academic research, and proven leadership in seeking networks of private, government, and academic entities.

This institute will provide a multi-faceted approach to deliver on strategies for development of current and future workforce talent, economic drivers, and innovative and translational research through foundational Texas A&M tenets of academic excellence through transformational education, connectivity to local, state, national and international collaboration and partnerships, and growth of new knowledge to advance the Texas space economy.

Agenda Item No.
Agenda Item Briefing

A&M System Funding or Other Financial Implications:

State and federal funding opportunities are expected to support the Texas A&M Space Institute, including, but not limited to, facilities, equipment, general operations, salaries, and other Space Consortium-led initiatives. Funding will begin in fiscal year 2024.

Strategic Plan Imperative(s) this Item Advances:

Approval of this agenda item will advance A&M System Strategic Imperatives #4, #5, and #7, whereas #4: the A&M System will increase its prominence by building a robust and targeted research portfolio; #5: the A&M System will provide services that respond to the needs of the people of Texas and contribute to the strength of the state's economy; and #7: the A&M System will pursue pioneering/progressive opportunities to address national and global challenges.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM
Office of the Vice Chancellor for Research

July 25, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Establishment of the Texas A&M Space Institute

I recommend adoption of the following minute order:

**“The Texas A&M Space Institute is hereby established as an
organizational unit of The Texas A&M University System.”**

Respectfully submitted,

Joe Elabd, Ph.D.
Vice Chancellor for Research

Approval Recommended:

John Sharp
Chancellor

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

James R. Hallmark, Ph.D.
Vice Chancellor for Academic Affairs

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

The Texas A&M University System
Texas A&M Space Institute

EXECUTIVE SUMMARY

1. Rationale for the Creation of the Texas A&M Space Institute

Texas has been the home to human spaceflight for the last 50 years, with NASA-led programs like Apollo, the Space Shuttle, and the International Space Station. The next 50 years will be different, evolving to a broader space economy, where the NASA-led effort changes into a much more complex set of commercial, university, and national security stakeholders conducting their own missions. These include commercial crew launches like SpaceX and Blue Origin, robotic delivery of cargo and science instruments to the Lunar surface in support of human exploration, and the Artemis missions that will return American astronauts to the Moon. In parallel, other government agencies are monitoring the Lunar surface for national security, as foreign adversaries have ambitious plans of their own. Commercial space transportation in Texas is currently serviced by five spaceports, two Federal Aviation Administration (FAA)-licensed and three privately licensed exclusive use sites.

The aerospace industry in Texas includes \$3.3 billion/year in total wages and directly employs over 138,000 Texas workers at more than 1,700 establishments (<https://businessintexas.com>). The aerospace, aviation, and defense sectors accelerate growth in the Texas economy. The world's top aerospace corporations choose Texas to conduct major aerospace-related operations. SpaceX has a rocket development facility in McGregor and a launch facility in Brownsville. Blue Origin has a launch site in Van Horn. Numerous new companies have sprung to life in the Clear Lake area such as Intuitive Machines, Axiom, and AEGIS Aerospace, alongside traditional aerospace giants like Lockheed Martin, Boeing, Collins and Raytheon. Across the state, aerospace companies like Firefly Aerospace (Cedar Park), Blue Origin (Van Horn) and SpaceX (Boca Chica) have expanded the Texas space exploration footprint. The future of the human space program is destined to grow this economy with the need for new talent, innovative technologies, and capabilities.

NASA's Johnson Space Center (JSC) located in Houston has served as the helm of human spaceflight since 1965. Mission Control in Houston has been vital to every U.S. human spaceflight since the Gemini IV mission in 1965, including the Apollo missions that took humans to the moon up unto today where flight control teams of experienced engineers and technicians are on duty seven days a week – 24 hours a day, 365 days a year – monitoring activities on the International Space Station (ISS). JSC now leads the engineering development of key new systems for the Artemis Program, NASA's return for humans to the Moon, and then the follow-on efforts for humans to Mars.

Texas is well poised to be the leader in each of these future activities, but rising competition dictates that for Texas to remain the leader in human spaceflight for the next 50 years, we must create an environment where all these stakeholders can work together for best outcomes. Recognizing the changing times, NASA is considering new approaches, such as building facilities "outside the gate" where researchers and commercial companies can work with NASA in a more agile and flexible manner. Where the past human spaceflight programs were NASA centric, the new programs must be able to bring many stakeholders together that include industry, academia, NASA and other government agencies. The Texas A&M Space Institute will facilitate these new collaborations.

Texas has in place other key ingredients to maintain and expand its leadership in the new space economy. According to recent studies, Texas is the number one state for aerospace companies in the United States. Texas has a business-friendly climate, is centrally located, and is home to launch capable locations along the Texas coast, in west Texas and the Ellington Space Port. The missing ingredient is a sufficient workforce to fill the new STEM jobs that space will bring to Texas. Recent studies show a doubling of the international space economy in the next 10 years, and for Texas to claim its rightful share of this expansion, new ways to connect the Texas population with higher education and industrial employers are required.

Through strategic planning, the Texas A&M Space Institute will serve as a catalyst for innovative research and technologies and will develop a networked-space community by bringing together cross-sectoral entities from throughout the state, connecting and advancing new discoveries and capabilities, new ideas in space-related education, and workforce development.

2. General Description of the Texas A&M Space Institute and Its Mission and Goals

The Texas A&M Space Institute is a multi-faceted research organization focused on leading, servicing and support of an evolving space economy, providing Texas with strategic planning and research accomplishments, workforce development and training, and a holistic approach to broadening statewide engagement and promoting growth in all sectors related to the Texas space economy.

Vision: *To maintain and expand Texas as the leader in the new space economy, leveraging existing expertise, capacities, and resources to foster new discoveries, technological developments, health advances, and workforce growth through partnerships across economic sectors within the state and beyond.*

Mission: The institute will provide for multisector partnerships that leverage subject matter expertise, existing current and future capacity, new research and technologies, and workforce development that aligns with strategic priorities of the state of Texas.

Goals:

1. Develop a Texas space ecosystem across the academic, commercial, service, private, and government sectors throughout the state of Texas that strengthens the state's leadership in space exploration and civil and commercial aerospace including the Texas spaceport. This goal includes establishment of i) a series of integrated hubs throughout Texas to leverage capacity and resource investment, and ii) a cross-sectoral space consortium that provides a collective approach to advancing space research and workforce development.
2. Support near-term and long-term strategic planning for the Texas space economy through engagement of the Texas Space Commission and the Texas Research and Space Economy Consortium periodically updating the plan to address the rapidly changing competitive landscape.
3. Advance the Texas space research innovation in space exploration and space flight, through leading-edge research infrastructure and funding opportunities to advance interdisciplinary collaborations. Seek federal, state, commercial and private funding to support and grow the space exploration ecosystem within Texas.
4. Establish laboratories for astromaterial curation of post-mission materials and create the world's largest indoor testbeds for the Lunar and Mars surfaces adjacent to JSC.

5. Develop a cross-sectoral collective approach to addressing workforce development through education and training opportunities for students, researchers, and industry professionals to advance their skills and knowledge, new technologies, and public outreach. Through partnership with JSC, provide training to current and future NASA and commercial astronauts.
6. Develop a public relations and outreach strategy to increase the visibility of Texas-based space exploration and to attract federal and other investment in the state related to human space exploration and space flight.
7. Foster a culture of innovation and entrepreneurship through collaboration with industry partners to transfer technology from research to commercialization, identify industry needs for future research, and through the formation of startup companies to lead the commercialization of space.

3. Potential Faculty Associated with the Texas A&M Space Institute and Potential Intrasystem and Other Collaborations

Over 280 Texas A&M faculty and investigators from more than 12 colleges/schools and at least two associated state agencies (i.e., Texas A&M Engineering Experiment Station and Texas A&M AgriLife Research) are involved in space-related research and the majority work on topics related to space exploration and space flight. Texas A&M is the only university in the nation with four astronauts on the faculty. Scientists and engineers from Texas A&M have participated in all NASA rover missions to Mars with two scientists active on NASA's Perseverance Rover Team. In addition, a retired NASA engineer who previously led robotic construction of the International Space Station and the development of NASA's next rover for the Moon has joined the Texas A&M faculty.

The Texas A&M faculty research expertise is expansive with strength in academic and industry knowledge (Table 1, Texas A&M Research Enterprise Strategic Plan 2023 -2030). Specific areas noted: human space flight, aeronautics, earth and planetary sciences, planetary surface engineering and construction, quantum, manufacturing, materials, AI and Machine learning, situational awareness, cybersecurity, communications, space health and nutrition, and climate, among others. Texas A&M has also invested in several state-of-the-art facilities. Recent workshops organized by the Office of the Vice President for Research (VPR) have resulted in the establishment of faculty-working groups to facilitate team building and collaborations to advance discoveries and leverage resources. The faculty-working groups have been actively engaged in extramural proposal writing, with recent awards from various agencies including the U.S. Air Force, the U.S. Space Force, and the National Reconnaissance Office.

A recent tabulation shows over 300 active space-related projects at Texas A&M with an average of \$25 million per year for the last five years. This includes competitive awards from NASA and other government agencies, as well as grants from the commercial space industry. The proposed institute will harness this existing ecosystem for space research as a starting point. In addition, there is significant interest and expertise in space exploration at other A&M System universities including Prairie View A&M University and Texas A&M University-Corpus Christi. The proposed institute will engage broadly, leverage expertise, and foster collaborations across Texas A&M colleges/schools and A&M System universities as well as its state agencies to accomplish its mission and goals.

4. Potential Activities

1. **Research and Development:** The institute will seek funding and conduct research in areas that advance the Texas strategic plan and foster innovations that address challenges which impede advancing space exploration and space flight. This could involve both fundamental and applied research aimed at developing new technologies that can be commercialized.
2. **Cross-sectoral Collaboration:** The institute will partner across economic sectors to develop new technologies and products, provide access to research expertise and facilities, and offer workforce development and training programs.
3. **Workforce Development and Education:** The institute will emphasize the growth of the Texas workforce to meet current and future demands through the Space Consortium. It is important to bring together all industry sectors to strengthen education and training programs throughout Texas to develop the skills and knowledge needed for careers in the space and support efforts on Earth.
4. **Outreach and Community Engagement:** The institute will engage with the local community and stakeholders to raise awareness of the importance of Texas leadership in space exploration and its role in advancing this domain. This could involve public lectures, conferences and other events aimed at promoting science and technology education.

Special Projects: Through additional funding sources, the institute would deliver special projects that advance space exploration and the Texas Space Economy Priorities. The initial project is the construction of a Texas A&M facility (Figure 1) adjacent to JSC in the Clear Lake area. The Texas Legislature recently passed legislation to fund this facility. JSC has facilitated NASA issuing an “Announcement for Proposal” (AFP) of 270 acres on the western side of its campus for external (partner) development in 2023. Texas A&M intends to bid on access to 32 acres along Saturn Lane, adjacent to Rocket Park and at the entrance to JSC. The Texas Legislature directed Texas A&M to design, build and operate a new facility that will be the center piece of this new collaboration between industry, academia, and multiple government (local, state, and federal) agencies. Owned and operated by Texas A&M, it is anticipated that the facility will house the Texas A&M Space Institute, the Texas Space Commission, Texas Space Consortium (TSC), and the Texas Space Aeronautics and Curation Exploratorium (T-Space) to include labs, shops, classrooms, meeting rooms, control rooms and dedicated spaces for astromaterial curation and sample research. The facility will also include two large extraterrestrial testbeds, one emulating the Martian surface and the other emulating the Lunar surface.

Such special projects will be identified and implemented in support of efforts identified in the strategic plan as additional funding becomes available through the TSC and other sources. Examples of future high priority targets include expanding and digitally connecting from the facility to A&M System facilities and regional hubs, including the Texas A&M System RELIS Campus, development of spaceflight prototypes for use in the terrestrial testbeds, and development of regional hubs within the state network.

5. Impact on Education and Training of Students

Education and training of students is a fundamental element of the institute to ensure that a knowledgeable and skilled workforce exists to meet the current and future needs of Texas space economy priorities. A trained workforce requires a variety of knowledge and skilled individuals. The challenge is attracting, recruiting and retaining individuals interested in the space-related economy as well as the retooling of the existing workforce to meet new technologies and

opportunities. This requires a coordinated partnership across sectors that the Texas A&M Space Institute will facilitate with commercial, academic, non-profit, federal agencies and public-school systems.

As part of the cross-sectoral Space Consortium efforts, the institute will map-out existing educational programs throughout the state with an emphasis on space-related economy components. Understanding the current expertise will allow the development of robust educational/training programs in space-related fields to meet the workforce needs. Examples include environmental factors, habitability, human factors and behavioral performance, exploration medical capabilities, human health countermeasures, human physiology, space food systems, space radiation, extravehicular activity (EVA), robotics and artificial gravity countermeasures. A robust and on-going research program, housed in Texas, is a necessary component to maintaining Texas as the home of space exploration and the new space-related economy ecosystem. This will require future investment in both university and technical programs throughout the state.

Initial efforts will start with the identification of current existing degrees and certificates offered within the A&M System related to human space exploration. In addition, the institute will identify current and future opportunities to work with local high schools and community colleges to promote STEM education and encourage more students to pursue careers in space. By doing so, the institute can help build a pipeline of talent that is important for the industry's growth and competitiveness. Educational and training requirements will be mapped to delivery of the Texas strategic plan.

Through anticipated corporate partners, the institute can offer internships, co-op programs, and other educational opportunities for students to gain hands-on experience in the space industry. This can help students develop the practical skills and knowledge necessary to succeed in the industry and provide them with networking opportunities that can help secure future employment. Access to nearby JSC laboratories and the unique Texas A&M facility will allow university researchers new approaches, techniques, components, and devices for cutting-edge development and discovery and provide hands-on opportunities to promote STEM education and outreach.

6. Resource Requirements

The Texas A&M Space Institute will require a variety of resources to achieve its goals, including:

Funding: The institute will require significant funding to carry out research, technology development, workforce development, consortium development and educational program development. This could come from a variety of sources – partnerships with the state of Texas, federal and state grants, commercial, academic, foundation and/or private donations.

Facilities: The institute will be housed at the Texas A&M University facility adjacent to the JSC in Clear Lake using the \$200 million recently appropriated to Texas A&M by the Texas Legislature for this purpose. Negotiations are in place to arrange access for JSC to be a primary user of a portion at this facility for research, training, and other activities.

Faculty and Staff: The institute will require a cross-sectorial team of experienced administrators, researchers, educators, and support staff to oversee its various programs and initiatives. This could include professors, postdoctoral researchers, engineers, administrative personnel, and outreach specialists.

Space Consortium: The space consortium will include entities across sectors of the Texas space community to leverage existing capacities, new discoveries through research, proposal development, workforce development, outreach, and other opportunities at this institute.

Industry Partnerships: The institute will need to establish partnerships with the members of the space community including commercial, technologic and services companies, technology firms, and other industry players to facilitate collaborations, joint research, and workforce development initiatives. Industrial users of the Texas A&M facility will pay for services and access in the facility.

7. Sources and Future Expectations of Financial Support

The Texas Legislature has secured \$350 million for the Texas Space Commission, with \$150 million to the Space Exploration and Aeronautics Research Fund, and \$200 million for Texas A&M to work with JSC to construct a building that will be for mission training, research, and the curation of astronautical materials. In addition to state funding, the institute affiliated research faculty and staff will engage in proposal writing to secure additional funding from federal, industry, and other external sources.

Additional revenue may be leveraged from workforce development related activities, such as delivery of short courses and workshops to industry and government entities and issuance of continuing education certificates.

8. Governance and Advisory Structure

A&M System Vice Chancellor for National Laboratories and National Security Strategic Initiatives will provide administration of the Texas A&M Space Institute. The administration and organizational strategy of the institute will be structured such that it subscribes to A&M System Policy 11.02, *Creation of Centers and Institutes*. The institute will have a director, who will report to the Vice Chancellor for National Laboratories and National Security Strategic Initiatives and the Vice Chancellor for Research. The primary report will be the Vice Chancellor for National Laboratories and National Security Strategic Initiatives.

The director will additionally be supported with input by an External Advisory Committee and an Internal Oversight Committee. The External Advisory Committee will be comprised of leaders in the space community from the commercial, service, academic, government and private sectors. The external committee will provide guidance concerning alignment of goals with state and national priorities, state-of-the-art innovation and technological, challenges to be addressed, funding opportunities and potential partnerships and insight into risk cost benefit, security and certification issues. The Internal Oversight Committee will be composed of administrators and subject matter experts from Texas A&M. The internal oversight committee will (i) provide input concerning the alignment of deliverables with institute, university and system priorities, and the scope and budget of deliverables, (ii) develop the strategic vision for the institute, and (iii) contribute to outreach across communities and economic sectors.

9. Mechanisms for Periodic Review

The institute Director will be responsible for preparing annual progress reports to present to the Vice Chancellor for National Laboratories and National Security Strategic Initiatives. Reports will

also be shared with the Vice Chancellor for Research, the Vice Chancellor and Dean of Engineering, the Vice President for Research, Texas A&M, the Senior Vice President of Texas A&M Health, and the Vice Chancellor and Dean for Agriculture and Life Sciences for comment. The institute will be evaluated by the Vice Chancellor for National Laboratories and National Security Strategic Initiatives annually. A formal review of the institute will be completed every five years per Texas A&M System Policy *11.02*. The External Advisory Board will meet annually, at a minimum, and the Internal Advisory Committees will meet quarterly, at a minimum.

The annual report will summarize the following aspects of the institute:

- Significant Accomplishments
- Financials
- External and Internal Advisory Committee summaries
- Research activities, including input (grants, contracts, etc.) and output (publications, reports, etc.) metrics
- Workforce development and Outreach activities
- Industry relationships summary
- Research Security and Compliance Review
- Goals for the upcoming year

APPENDICES

Figure 1) Proposed Facility in Clear Lake Area



- | | | |
|--------------------------|-------------------------|------------------------|
| 1. UH Clearlake | 3. Space Center Houston | 5. NASA JSC Building 1 |
| 2. CCISD SC Intermediate | 4. Rocket Park | 6. JSC Rockyard |

Table 1 Research Capacities reflected in the Texas A&M Research Enterprise Strategic Plan, 2023 – 2030

Strategic Research Themes	Strategic Research Sub-Themes	Examples of Research Areas of Strength/Opportunity within Texas A&M
Community, Culture, and Economic Resilience	Arts Ecosystem and Culture	Impact of arts on health & wellbeing, education and economy, community transformation and healing, adaptation to social, economic and technological challenges, public humanities, cultural heritage, historic creative activity, civics education, creative production and performance, use of new media and technologies in arts, and tourism
	Human Development and Social Dynamics	Human resource development, change management, resilience, leadership development, social dynamics, policy, human factors, bioethics, education disparities
	Workforce and Future of Work	Workforce development, future of work, cultures of work, policy, inclusive workforce
Emerging Technologies and Innovations	Artificial Intelligence, Learning, and Autonomy	Machine learning, deep learning, human-machine interactions, sensors, robotics, computer vision, ethics/policy, technology adoption
	Biotechnology and Biomanufacturing	Synthetic biology, genomics, gene editing, genetic medicines and RNA/DNA vaccines, biomanufacturing
	Data, Visualization, and Information Technologies	Digital twins, computing platforms, visualization, AR/VR technology, LED production stages, communicating with the future, policy
	Microelectronics and Semiconductors	Analog and mixed signal circuits, artificial intelligence hardware, biosensors, brain- inspired computing, integrated photonics, intelligent and cognitive EM sensors, MEMS sensors and actuators, memristors and emergent memory devices, metrology, molecular computing, neuromorphic materials, radiation-hardened electronics, secure edge computing, 5G/6G technology, workforce development
	Quantum Science and Technology	Quantum sensing, quantum biology, quantum communications, quantum computing
Health and Quality of Life	Diagnostics, Treatments, Intervention, and Cures	Biomedical devices, diagnostic technologies, precision medicine, genetics/genomics, toxicology/environmental health, neuroscience, infectious diseases, zoonotic/emerging diseases, digital health, telehealth, cancer therapeutics/vaccines, cardiovascular diseases, communication and adoption, clinical trials, governance
	Disease Prevention and Health Promotion	Risk and protective factors, food-nutrition-health link, prevention of chronic diseases, stress management, vaccine development, emissions-energy-health interactions, health communication, hospitality and recreation
	Health Disparities and Community Health	Rural and community health, racial/ethnic/socioeconomic health disparities, women's health and gender differences, military and operational medicine, humanitarian assistance/disaster response, health resilience, global health security, governance

National Security	Biodefense and Biosecurity	Detection/forecasting, rapid response/contamination, pandemic response, one health, rapid therapy/vaccine development, applied biosafety/bio-risk mitigation, environmental surveillance, manufacturing, supply chain
	Cybersecurity	Cybersecurity assessment, human dimensions, cyber modeling, privacy versus security, governance
	Nuclear Security	Arms control, nuclear terrorism, risk analysis, nuclear forensics, nuclear nonproliferation, nuclear power, policy
	Advanced National Security Technologies	Directed energy; hypersonic technology; ballistics; encryption; systems engineering; materials for extreme environments; policy
Space Exploration	Human Space Flight	Human factors and behavioral performance, human health countermeasures, space radiation, exploration medical capability, research operations and integration, food/nutrition, space humanities
	Space Engineering and Construction	Aerospace power and energy storage; robotics, sensors, and autonomous systems; robotics space flight; materials and manufacturing; space food systems
	Earth and Planetary Sciences	Earth science, astrophysics, astrobiology, planetary science, exoplanets, space domain awareness, remote communications, asteroid detection and deflection
Sustainability and Environment	Climate Resilience and Mitigation	Climate resilience/mitigation, coastal resiliency, blue economy, carbon capture, environmental ethics/humanities, policy
	Energy Transition/Clean Energy	Biomass/renewables, nuclear reactors, hydrogen economy, smart grid/infrastructure of the future, electrification, decarbonization, energy storage, critical materials, simulations of scenarios of energy of the future, response, training, policy
	Food-Energy-Water (FEW) Nexus	Development and application of integrated tools/platforms to inform the decision- making process for FEW resilience, assessment of the sustainability of FEW systems, water quality decision support system, FEW and health, food security, clean water, response, training, policy

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: John Sharp, Chancellor
The Texas A&M University System

Subject: Appointment of Interim President of Texas A&M University-Central Texas

Proposed Board Action:

Appoint Dr. Richard M. Rhodes as the interim president of Texas A&M University-Central Texas, effective October 1, 2023.

Background Information:

System Policy [*01.03, Appointing Power and Terms and Conditions of Employment*](#), states that the Board of Regents may appoint interim CEOs.

A copy of Dr. Rhodes' curriculum vitae is attached.

A&M System Funding or Other Financial Implications:

Dr. Rhodes' initial salary as interim president will be \$400,000.

Strategic Plan Initiative(s) this Item Advances:

As the institution's interim president, Dr. Rhodes' responsibilities encompass the system and university's progression in all eight imperatives: access for students, affordable learning, engaged and successful graduates, research, responding to the needs of Texans, maintaining financial responsibility, leading in national and global initiatives, and sustaining long-term growth.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM

Office of the Chancellor

July 26, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Appointment of Interim President of Texas A&M University-Central Texas

I recommend adoption of the following minute order:

“Effective October 1, 2023, Dr. Richard M. Rhodes is hereby appointed interim president of Texas A&M University-Central Texas at an initial salary of \$400,000.”

Respectfully submitted,

John Sharp
Chancellor

Approval Recommended:

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

James R. Hallmark, Ph.D.
Vice Chancellor for Academic Affairs

RICHARD M. RHODES, PH.D.

EDUCATION

1996 The University of Texas at Austin Austin, TX
Doctor of Philosophy (Ph.D.) – Community College Leadership Program
Dissertation: “Perceptions of Texas Legislators and Community College CEO’s
About Performance Based Funding”

1983 New Mexico State University Las Cruces, NM
Master of Arts – Concentration in Educational Management and Development
(Higher Education)

1980
Certified Public Accountant
Texas and New Mexico

1974 New Mexico State University Las Cruces, NM
Bachelor of Business Administration – Concentration in Accounting

1969 Alamogordo High School Alamogordo, NM
Graduate

PROFESSIONAL EXPERIENCE

September 2011 – Present

Austin Community College District Austin, TX
Chancellor

Serve as the Chancellor for an eleven-campus college district with an enrollment of 70,000 students and an operating budget of \$460M. Report directly to a nine-member locally elected Board of Trustees.

Responsibilities and duties include:

Richard M. Rhodes

- Act in an advisory capacity to the Board of Trustees in order to ensure the college fulfills the state mandated-mission to provide a broad range of educational opportunities that meet student and community needs while maintaining fiscal integrity.
- Provide executive leadership in the development, implementation, and execution of the programs and practices to achieve the vision and goals of the college's Master Plan and Student Success Initiative.
- Represent the college to external agencies and organizations and develop sound partnerships that assist in the development of the institution.
- Provide executive oversight to ensure sound fiscal practices and expand the college's fiscal resources.

Significant Accomplishments:

- In 2022 received the largest donation in the history of ACC - \$5 million from University Federal Credit Union.
- Purchased former Highland Mall – first large indoor mall in Central Texas consisting of 81 acres and 1.2 million square feet in the heart of Central Texas. ACC is developing this property through public/private partnerships resulting in a planned mixed-use community where the community can live, work, play and be educated.
- Received \$5M grant from the Governor's Office Emerging Technology Fund to create the only Wet Lab Space by a community college in the state of Texas for the ACC Bioscience Incubator.
- Successful General Obligation Bond election in 2022 resulting in \$770 million new facility and facility improvement funds. 70+ approval vote.
- Successful General Obligation Bond election in 2014 resulting in \$386M new facility and facility improvement funds.

- Since 2011, ACC has opened four new campuses allowing the college to serve more communities in our service area which is approximately the size of the state of Connecticut.
- Recognized by Achieving the Dream as “Leader College of Distinction” because of successful student success strategies.
- Successful collaboration with Army Futures Command to create the “Software Factory” at the Rio Grande Campus.
- Creation of four industry incubators for startups to develop product before going to market. Bio-Science, Fashion, Advanced Manufacturing and Non-Profit Incubators.
- Successfully partnered with Austin PBS on co-location on the ACC Highland Campus creating synergy in program development and production with ACC Educational TV and ACC RTF programs.
- Recognized by Excelencia in Education as “Seal of Excelencia” because of success in support of Latinx student success.
- Successful 2017 Legislative Session resulting in authorization for ACC to offer its first Bachelor Degree, an RN to BSN. Now offer 3 Bachelor’s Degrees – Software Development, Advanced Manufacturing and RN to BSN. A fourth degree in Cyber Security is in process.
- Increase in degrees awarded by 60% in past four years and 168% since 2011.
- Created strong partnership with Apple resulting in visit from Tim Cook and award of Apple Swift Code and Apple Coding Camps.
- Implemented co-enrollment programs with The University of Texas at Austin, Texas State University and Texas A&M University resulting in guaranteed transfer pathways for students.
- In partnership with the 25 independent school districts, we serve over 8,000 students per semester through dual credit, have created 14 Early College High Schools, 14 Innovation Academies/P-Techs with industry partners Dell, Seton Hospitals

Richard M. Rhodes

and Samsung, and aligned all school district endorsements with Areas of Study.

- Implemented the “ACcelerator,” a 604 computer station open lab with individualized, competency-based delivery of curriculum resulting in a 17.75% lift in persistence. Largest in the “Galaxy.”
- Received “Star Award” from the Texas Higher Education Coordinating Board for success of “Accelerated Programmer Training,” a Competency-Based Education delivery resulting in 140% increase in computer programming degrees.
- In collaboration with Capital Area Workforce Board, created “Austin Metro Area Master Community Workforce Plan” with a focus in Information Technology, Health Careers and Advanced Manufacturing/Skilled Trades.
- One of ten higher education institutions nationally to receive a grant from AAC&U to create a “Truth, Racial Healing and Transformation Campus Center.” ACC was the only community college and the only higher education institution in Texas to receive this designation. Some of the other institutions receiving this honor included Duke University, Spelman College, Citadel and University of Maryland.
- Successful collaboration in providing workforce training programs to industry partners including Samsung, Apple, NXP, NI and Tesla as well as St David’s, Ascension Seton, and Baylor Scott & White Hospitals.
- Implemented “Guided Pathways” reducing 150 program majors down to ten Areas of Study resulting in clear career and transfer pathways making it easier for students to identify coursework needed to achieve their goals more efficiently.
- Implemented EDUC 1300 – Student Success Course resulting in an average 20% point increase in persistence and closing the disparity gap for students of color and high risk (low income, first generation) students.
- Joint development of “Degree Map” with Civitas Learning. Degree Map is a robust integrated planning and advising tool for students.

Richard M. Rhodes

Degree Map is now used by many colleges and universities.
Degree Map resulted in an 11% lift in persistence for all students.

- Created new programs in sustainable agriculture entrepreneurship, Veterinary Technology, First Responders Program and Entrepreneurism.

December 2001 – September 2011

El Paso Community College

El Paso, TX

President

Served as President and Chief Executive Officer for a five-campus college district with an enrollment of 30,000 credit/10,000 non-credit students and an operating budget of \$190M. Report directly to a seven member, locally elected Board of Trustees.

Responsibilities and duties include:

- Provide educational leadership to assure that the college offers a broad range of educational opportunities that meet student and community needs through instructional and student services programs.
- Provide administrative leadership in strategic planning and development of the college's instructional programs, fiscal management, student services, human resources, affirmative action, physical facilities, community relations, and economic development.
- Assume responsibility for the effective operation of the college promoting open communication and teamwork necessary to further the goals of the institution.
- Represent the college with local, state and federal agencies, while maintaining open communication with college constituencies.
- Exercise leadership within a diverse, complex, urban, border community.

Significant Accomplishments:

Richard M. Rhodes

- Partnered with the City of El Paso to create joint use of a community library at the Northwest Campus and a soccer/baseball recreational complex.
- Lead effort for United Blood Services resulting in the college being recognized by the American Blood Donors as largest blood donor in the El Paso area.
- Partnered with the University of Texas at El Paso and the El Paso Independent School District to create the "Orion Ring" high speed fiber connectivity consortium.
- Technology transformation effort resulting in wireless campuses, high-speed fiber connectivity, holographics, state-of-the-art labs and dedicated stream of revenue for technological advancement.
- Worked with the college administration and the Southern Association of Colleges and Schools (SACS) accrediting agency in the removal of the college's probationary status being placed in "good standing" and reaccreditation for 10 years.
- Partnered with the Canutillo Independent School District to build a high school adjacent to the EPCC Northwest Campus to maximize joint facilities usage, while making higher education more accessible to a predominantly Hispanic, low income population.
- Implemented the Dual Credit/Concurrent Program by partnering with all area school districts to provide instruction for immediate award of both high school credit and college credit, free of charge, while students are enrolled in high school. In seven years, the program grew from 63 students to 3,500 students.
- Implemented the "Salute to the Arts" Project designed to promote the arts, raise scholarship funds through donations, and attract students to pursue a college education.
- Implemented the "Learning College" philosophy, which seeks new ways to improve and expand student learning.
- EPCC received the "Star Award" as the "2002 Best Partner" from the Greater El Paso Chamber of Commerce.
- Implementation of six Early College High Schools in partnership with local school districts.
- EPCC received the "Leah Meyer Austin" award from the Lumina Foundation for student success initiatives, 2011.

- EPCC recognized by Hispanic Outlook magazine for largest number of Hispanic student graduates of any community college in the nation, 2008-2010.
 - EPCC received the "Excelencia in Higher Education" award for outstanding student success through Early College High Schools – for Hispanic students, 2011.
-

August 1994 – December 2001

Salt Lake Community College

Salt Lake City, UT

Vice President of Business Services

Reporting directly to the President and advising on all financial matters:

- Preparing and presenting financial reports to the Board of Regents and Board of Trustees.
 - Preparation and adoption of college budget: budget in excess of \$97M, enrollment of 13,000 FTE, credit headcount of 21,000 and non-credit headcount of 15,000.
 - Establishing business procedures and internal controls for the college.
 - Coordination of long-range planning for the college.
 - Lead facilitator of Faculty/Administration Discussion Team.
 - Establishing and maintaining cash management system.
-

February 1992 – August 1994

El Paso Community College

El Paso, TX

Vice President of Financial and Administrative Services

Professional development sabbatical leave to attend graduate school at the University of Texas at Austin from September 1992 through August 1993. Pursued course work leading toward a Ph.D. in the Community College Leadership Program. Program included guest lectures and intensive discussions with 25 community college presidents from across the United States and Canada, site visitations to five major college districts in Texas, extensive work with the Interim President of Austin Community College in establishing a Resource Allocation Process, review

Richard M. Rhodes

and analysis of budgetary and audit reports of all community colleges in Texas, and coordination and planning of the 1992 Conference of the Texas Association of Community College Trustees.

October 1990 – February 1992

El Paso Community College

El Paso, TX

Interim President

The President, the college's chief executive officer, reports directly to the Board of Trustees and serves as chief administrative and academic officer for the multi-campus district. As CEO, the President is responsible for program and service design, development and operation; budget development, control and implementation; program and service assessment and evaluation; and selection and evaluation of district personnel.

November 1983 – October 1990

El Paso Community College

El Paso, TX

Vice President of Financial Services

December 1979 – November 1983

New Mexico State University

Las Cruces, NM

Comptroller

September 1975 – December 1979

New Mexico State University

Las Cruces, NM

Accountant

Richard M. Rhodes

May 1974 – September 1975

Emmons, Adams and Company, C.P.A

Albuquerque, NM

Auditor

July 1970 – May 1974

New Mexico State University

Las Cruces, NM

Student Co-op Business Office

TEACHING EXPERIENCE

January 2019 - Present

The University of Texas at Austin

Austin, TX

Adjunct Faculty Member, College of Education

Graduate Courses Taught:

- Higher Education Finance and Economics
- Capital Management and Budgeting
- Served on three Doctoral Dissertation Committees at The University of Texas at Austin

January 2004 - 2011

**The University of Texas at El Paso and
New Mexico State University**

El Paso, TX
Las Cruces, NM

Adjunct Faculty Member, College of Education

Graduate Courses Taught:

- Higher Education Finance and Economics
- The Community College

Dissertation Committees:

Richard M. Rhodes

- Served on seven Doctoral Dissertation Committees at The University of Texas at Austin, The University of Texas at El Paso and New Mexico State University.

PUBLICATIONS

- Co-Author, League for Innovation in the Community College, Journal of Asynchronous Learning Networks (JALN), "The Orion Project: Connecting a Community" – February 2004
- Chapter Author, American Association of Community Colleges, The Creative Community College: Leading Change Through Innovation, "El Paso Community College: Climbing Ladders to Success" (Chapter 7) – 2008
- Co-Author, The Texas Lyceum Journal 2012 – 2013, "What Do We Expect? A REGIONAL EDUCATION ECOSYSTEM THAT WORKS" – April 2012

ORGANIZATION AFFILIATIONS/SPECIAL RECOGNITIONS

Professional and Community

- American Association of Community Colleges (AACC), Board Member 2018 – Present, Board Chair 2021 – 2022, Chair of Audit and Finance Committee 2019-2020
- Trellis Corporation – 2015 – Present, Chair 2022 - Present, Chair of Finance Committee 2019-2020 (Trellis Company is a nonprofit 501(c)(3) corporation with the dual mission of helping student borrowers successfully repay their education loans and promoting access and success in higher education.)
- Trellis Foundation 2019 to present – Chair 2019 – 2022 (Trellis Foundation is a grant-making public charitable organization focused on improving postsecondary attainment for low-income students and students of color in Texas. Our approach is highly collaborative and prioritizes catalytic investments, focused on changing or informing change to policy, practice and systems.)
- Texas Workforce Investment Council - Appointed by Governor Perry, Reappointed by Governor Abbott, Member 2013 – Present,

Richard M. Rhodes

Executive Committee 2020 - Present (The TWIC is charged with the administration of a statewide system of industry-defined and industry-recognized skill standards for major skilled, sub-baccalaureate occupations with strong employment and earnings opportunities. The purpose of a Texas system of voluntary skill standards, consistent with its related legislative mandates and objectives, is to strengthen the ability of Texas' industry to be competitive in the global economy.)

- American Association of Community Colleges, 21st Century Commission on the Future of Community Colleges, 2012 – 2014
- League for Innovation, Board Member, 2018 - Present
- Carnegie Foundation for the Advancement of Teaching, Board Member 2009 – 2017, Chair of Audit and Finance Committee 2017
- ETS Community College Advisory Board, Chair, 2018
- Jobs for the Future (JFF) Policy Leadership Trust, Member, 2016 - 2018
- Communities in Schools, Friends Circle, 2014 – Present, Co-Chair 2021 to Present
- New Mathways Project, UT Dana Center, Advisory Board, 2016 - Present
- STEM Higher Education Council Business Engagement and Innovation Committee, Member, 2013 - 2019
- Texas Higher Education Leaders Consortium, UT Austin, 2014 - Present
- Texas Success Council, Past Chair & Member, 2010 - Present
- Texas Success Center - Past Chair & Executive Committee, 2010 - Present
- American Youthworks, Past Chair & Board Member, 2012 - 2020
- Austin Chamber of Commerce, Board Member & Economic Development Council, 2016 - 2017
- Austin Partners in Education, Board Member, 2015 - 2020
- Austin Area Research Organization, Member, 2012 - Present
- Capital Area Council Boy Scouts of America, Vice President, Explorers, 2014 - Present
- E3 Alliance, Treasurer, 2011 - 2019

- Greater Austin Hispanic Chamber, Advisory Board Member, 2011 - Present
- United Way of Austin, Board Member – 2018 - Present
- Round Rock Chamber of Commerce, Board Member & Economic Development Board Member, 2013 - Present
- Appointed by Texas Governor Rick Perry to serve as a Board Member on the Texas Guaranteed Student Loan Corporation, 2008 to 2015
- Board Member, Texas Education Reform Foundation, 2008 to 2014
- Board Member – USO, El Paso Chapter, 2007 to 2011
- Board Member – Junior Achievement, El Paso , 2007 to 2011
- Joint Civilian Orientation Conference, 2005
- Texas Association of Community College Trustees and Administrators, Board Member - 2004 to 2011, Vice Chairman - 2005 to 2006, Chair 2007 - 2008
- Texas Association of Community Colleges, Board Member – 2001 - Present, Chair 2009-2011 and Chair again 2013 - 2015
- Texas Higher Education Coordinating Board Formula Advisory Committee, Member – 2003 to 2013, Chairman – 2005 to 2006
- The University of Texas at El Paso (UTEP) Centennial Commission, Member 2004 to 2011
- Paso Del Norte Group, Founding Member and Secretary - 2004 to 2011
- Federal Bureau of Investigation Citizen's Academy Graduate – Class of 2004 (El Paso Division)
Graduate – Class of 2017 (Austin Division)
- Del Sol Medical Center, Board Member - 2004 to 2011, Served as Secretary, Vice Chair and Chair - 2010
- National Commission for Cooperative Education, Board Trustee - 2004 to 2010
- United Way of El Paso, Executive Board Member – 2004 to 2010
- Boy Scouts of America Yucca Council, Executive Board Member – 2004 to 2011
- Upper Rio Grande Workforce Development Board, Board Member – 2003 to 2011

Richard M. Rhodes

- Greater El Paso Chamber of Commerce Executive Board, Member – 2002 to 2011
- El Paso Hispanic Chamber of Commerce Board of Directors and Executive Board, Board Member – 2002 to 2011
- El Paso Cancer and Chronic Disease Consortium Board of Directors, Board Secretary – 2002 to 2010
- The FEMAP Foundation Board of Directors, Board Member – 2002 to 2011
- Rotary Club of El Paso, Member – 2002 to 2011
- American Institute of Certified Public Accountants, 1981 to Present
- New Mexico Society of Certified Public Accountants, 1980 to Present
- Texas Society of Certified Public Accounts, 1984 to Present
- El Paso Property Tax Advisory Committee, 1984 to 1994
- El Paso Tax Increment Finance Board, 1985 to 1989
- KCOS Public Television Board of Directors and Executive Board Treasurer and Vice Chairman, 1984 to 1992 and 1994
- El Paso Zoological Society Board of Directors, Treasurer – 1990 to 1992
- El Paso Cancer Treatment Center Board of Directors, 1991 to 1992
- Boy Scouts of America – Scoutmaster for Troop 197 Greater Salt Lake Council, 1996 to 2001
- Rotary International Valley West Club of Salt Lake City, President – 1994 to 2001

Awards

- Austin Area Research Organization (AARO) 2022, Inaugural “Visionary Leader Award”
- Austin Technology Incubator 2022 – “Pike Powers Ecosystem Building Award”
- First Tee of Austin 2022 – Leadership Award
- Phi Theta Kappa, Shirley B. Gordon Award, 2017
- Boy Scouts of America, Capital Area Council, Silver Beaver Award, 2017

Richard M. Rhodes

Agenda Item No.

AGENDA ITEM BRIEFING

Submitted by: John Sharp, Chancellor
The Texas A&M University System

Subject: Appointment of Interim Vice Chancellor for Engineering, Interim Dean of the College of Engineering at Texas A&M University, and Interim Director of the Texas A&M Engineering Experiment Station

Proposed Board Action:

Appoint Dr. Y.A. (Joe) Elabd as the interim vice chancellor for engineering, interim dean of the College of Engineering at Texas A&M University (Texas A&M), and interim director of the Texas A&M Engineering Experiment Station (TEES).

Background Information:

System Policy *01.03, Appointing Power and Terms and Conditions of Employment*, states that the Board of Regents appoints the interim vice chancellor and dean, engineering, and interim agency director.

A copy of Dr. Elabd's curriculum vitae is attached.

A&M System Funding or Other Financial Implications:

Dr. Elabd's initial salary as interim vice chancellor for engineering, dean of the College of Engineering at Texas A&M, and interim director of TEES is \$577,500.

Strategic Plan Initiative(s) this Item Advances:

As interim vice chancellor and dean, engineering, and interim TEES director, Dr. Elabd's responsibilities encompass the system and university's progression in all eight imperatives: access for students, affordable learning, engaged and successful graduates, research, responding to the needs of Texans as the state's land-grant university, maintaining financial responsibility, leading in national and global initiatives, and sustaining long-term growth.

Agenda Item No.

THE TEXAS A&M UNIVERSITY SYSTEM

Office of the Chancellor

July 24, 2023

Members, Board of Regents
The Texas A&M University System

Subject: Appointment of Interim Vice Chancellor for Engineering, Interim Dean of the College of Engineering at Texas A&M University, and Interim Director of the Texas A&M Engineering Experiment Station

I recommend adoption of the following minute order:

“Effective immediately, Dr. Y.A. (Joe) Elabd is hereby appointed as the interim vice chancellor for engineering, interim dean of the College of Engineering at Texas A&M University, and interim director of the Texas A&M Engineering Experiment Station, at an initial annual salary of \$577,500.”

Respectfully submitted,

John Sharp
Chancellor

Approval Recommended:

Approved for Legal Sufficiency:

Billy Hamilton
Deputy Chancellor and
Chief Financial Officer

Ray Bonilla
General Counsel

James R. Hallmark, Ph.D.
Vice Chancellor for Academic Affairs

Appointment Requiring Board Approval

Proposed New Hire:

Name: Y.A. (Joe) Elabd

Title: Interim VC and Dean, Engineering & Interim TEES Director

Salary: \$ 577,500

External Market Data:

	Survey Name	Survey Job Title	Survey Annual Salary
1.	CUPA-HR 2021 Salary Survey	Provost & CAO - Budget>\$1.2B	\$473,800
2.	2023 Administrative Accountability Report	Dean Engineering (UT-Austin)	\$540,000
3.	UMsalary.info	Dean of Engineering (U. of Michigan)	\$583,947
4.			
5.			

Internal Salary Data:

	Incumbent Name	Job Title	Annual Salary
1.	John Hurtado (prior)	Interim Dean Engineering	\$497,137
2.	Nate Sharp	Dean Business	\$600,311
3.	Amy Waer	Dean Medicine	\$848,987
4.	Jeffrey Savell	Vice Chancellor & Dean	\$435,171
5.	Greg Hartman	Sr. Vice President & COO	\$550,000

Comments, if necessary:

(JOE) YOSSEF A. ELABD, Ph.D.**Vice Chancellor for Research**

The Texas A&M University System (TAMUS)

&

Professor & Axalta Coating Systems Chair II

Texas A&M University (TAMU)

TAMUS: Office of Research - Moore/Connally Building, 301 Tarrow Street, 7th Floor, 1122 TAMU, College Station, TX 77840-7896, E-mail: yelabd@tamus.edu, phone: 979.458.5598

TAMU: Artie McFerrin Department of Chemical Engineering - Jack E. Brown Building, 3211 TAMU, College Station, TX 77843-3211, E-mail: elabd@tamu.edu, phone: 979.458.5598

EDUCATION

2001 Ph.D., **Johns Hopkins University**, Chemical Engineering
 1995 B.S., **University of Maryland, Baltimore County**, Chemical Engineering

APPOINTMENTS

2014-present **TAMUS & TAMU**, College Station, TX
 2021-present Vice Chancellor for Research
 2020-present Axalta Coating Systems Chair II, Chemical Engineering
 2017-present Professor, Materials Science and Engineering (Courtesy Appointment)
 2014-present Professor, Chemical Engineering (Primary Appointment)
 2019-2021 Associate Dean for Research, Engineering
 2017-2020 Joe M. Nesbitt Professor, Chemical Engineering
 2016-2019 Associate Department Head, Chemical Engineering
 2016-2019 Undergraduate Program Director, Chemical Engineering

2003-2014 **Drexel University**, Philadelphia, PA
 2013-2014 Professor, Chemical and Biological Engineering
 2009-2013 Associate Professor, Chemical and Biological Engineering
 2003-2009 Assistant Professor, Chemical and Biological Engineering

2008-2018 **Università di Bologna (UNIBO)**, Bologna, Italy
 2018, 2 wk. Visiting Professor (UNIBO funded)
 2015, 1 mo. Senior Fellow, Istituto di Studi Avanzati (UNIBO funded)
 2010, 2 wk. Visiting Scholar (NSF Funded)
 2008, 2 mo. Visiting Scholar (NSF Funded)

2011 **Food & Drug Administration**, Silver Spring, MD
 2011, 5 mo. Scholar in Residence, Biomedical Devices Division (NSF Funded)

2001-2003 **U.S. Army Research Laboratory**, Aberdeen, MD
 2001-2003 NRC Postdoctoral Fellow, Materials Division

1996 **SCM Chemicals**, Baltimore, MD
 1996 R&D Chemical Engineer

BOARD APPOINTMENTS

2021-present **Texas A&M Research Foundation**
 2021-present Chair

2021-present **Brazos Valley Economic Development Corporation**
 2021-present Member

HONORS AND AWARDS

2020-present	Axalta Coating Systems Chair II
2017-2020	Joe M. Nesbitt Professorship
2016	American Physical Society Fellow
2015	Senior Fellowship, Istituto di Studi Avanzati, Università di Bologna (UNIBO)
2007-2012	NSF CAREER Award
2005-2006	DuPont Science and Engineering Award
2004-2007	ARO Young Investigator Award
2001-2003	NRC Postdoctoral Award
1994	Phi Kappa Phi Honors
1993	AIChE Donald F. Othmer Sophomore Academic Excellence Award
1992	Memorial Scholarship of the Engineering Society of Baltimore

ADMINISTRATION

VICE CHANCELLOR FOR RESEARCH

Responsible for providing research leadership and services to support all 19 system members and overseas numerous offices and initiatives, including Texas A&M Innovation, Texas A&M RELLIS Research Alliance, Texas A&M Fort Worth, the A&M System Research Security Office, the A&M System Research Compliance Office, the A&M System Research Development Office, the Texas A&M Semiconductor Institute, and the Chancellor's Research Initiative (CRI). The Texas A&M University System is a system of 11 universities and 8 state agencies with externally funded research expenditures exceeding \$1.2 billion annually.

ASSOCIATE DEAN FOR RESEARCH

Responsible for leadership in industry and non-profit partnerships and guidance in research strategy, research development, and proposal development, and coordinating with multiple Texas A&M Engineering Experiment Station (TEES) offices, including contracts, ethics and compliance, and commercialization and entrepreneurship. Texas A&M Engineering is the largest engineering program in the country with top 10 ranking and top 5 research expenditures.

ASSOCIATE DEPARTMENT HEAD & UNDERGRADUATE PROGRAM DIRECTOR

Responsible for leadership in undergraduate education, including, but not limited to, undergraduate advising, curriculum, course scheduling and instructor assignments, for the Texas A&M Artie McFerrin Chemical Engineering Department. One of the largest chemical engineering departments in the country with top 20 public ranking.

RESEARCH

RESEARCH EXPERTISE

Materials – Polymer Science and Engineering
Energy – Electrochemical Engineering

EXTERNAL RESEARCH SPONSORS

Current – DOE, Kraton Co.

Previous – ARL, ARO, Axalta Coating Systems, Benjamin Franklin Technology Partners, DOD, DOE, DTRA, DuPont, Kraton Co., Kuraray America, Inc., NSF, Perma Pure LLC, Seadrift LLC, USDA

PUBLICATIONS

1. Nixon, K.; Sun, R.; Elabd, Y.A. Synthesis of 3-, 4-, 6-Arm Star Poly(ionic liquid)s. *Polymer* **2023**, 279, 125990, 1-11.
2. Rui, S.; Agrawal, M.; Neyerlin, K.C.; Snyder, J.D.; Elabd, Y.A. Proton Conducting Sulfonated Poly(ionic liquid) Block Copolymers. *Macromolecules* **2022**, 55, 6716-6729.
3. Yang, Y.; Tocchetto, R.; Nixon, K.; Sun, R.; Elabd, Y.A. Dehumidification via Polymer Electrolyte Membrane Electrolisis with Sulfonated Pentablock Terpolymer. *J. Membr. Sci.* **2022**, 658, 120709, 1-12.

4. Yang, Y.; Sun, R.; Elabd, Y.A. 3D Patterned Electrodes for Ultra-Low Platinum Fuel Cells. *Int. J. Hydrogen Energy* **2022**, *47*, 8993-9003.
5. Gawas, R.; Sun, R.; Li, Y.; Neyerlin, K.C.; Elabd, Y.A.; Tang, M.; Snyder, J. Characterization of a Sulfonated Poly(ionic liquid) Block Copolymer as an Ionomer for Proton Exchange Membrane Fuel Cells using Rotating Disk Electrode. *J. Electrochem. Soc.* **2021**, *168*, 124511.
6. Chen, T.-L.; Lathrop, P.M.; Sun, R.; Elabd, Y.A. Lithium-Ion Transport in Poly(ionic liquid) Diblock Copolymer Electrolytes: Impact of Salt Concentration and Cation and Anion Chemistry. *Macromolecules* **2021**, *54*, 8780-8791.
7. Hwang, M.; Nixon, K.; Sun, R.; Willis, C.; Elabd, Y.A. Sulfonated Pentablock Terpolymers as Membranes and Ionomers in Hydrogen Fuel Cells. *J. Membr. Sci.* **2021**, *633*, 1-11.
8. Hwang, M.; Sun, R.; Willis, C.; Elabd, Y.A. Solid-State Alkaline Fuel Cell Performance of Pentablock Terpolymer with Methylpyrrolidinium Cations as Anion Exchange Membrane and Ionomer. *Fuel Cells* **2020**, *20*, 624-633.
9. Chen, T.-L.; Sun, R.; Willis, C.; Krutzer, B.; Morgan, B.; Beyer, F.L.; Han, K.S.; Murugesan, V.; Elabd, Y.A. Impact of Ionic Liquid on Lithium Ion Battery with a Solid Poly(Ionic Liquid) Pentablock Terpolymer as Electrolyte and Separator. *Polymer* **2020**, *209*, 122975, 1-12.
10. Li, Y.; Van Cleve, T.; Sun, R.; Gawas, R.; Wang, G.; Tang, M. Elabd, Y.A.; Snyder, J.; Neyerlin, K.C. Modifying the Electrocatalyst-Ionomer Interface via Sulfonated Poly(ionic liquid) Block Copolymers to Enable High-Performance Polymer Electrolyte Fuel Cells. *ACS Energy Lett.* **2020**, *5*, 1726-1731.
11. Lathrop, P.M.; Duan, Z.; Ling, C.; Elabd, Y.A.; Kravaris, C. Modeling and Observer-Based Monitoring of RAFT Homopolymerization Reactions. *Processes* **2019**, *7*, 768. **Invited Contribution, Special Issue on Computational Methods for Polymers**
12. Hwang, M.; Karenson, M.O.; Elabd, Y.A. High Production Rate of High Purity, High Fidelity Nafion Nanofibers via Needleless Electrospinning. *ACS Appl. Polym. Mater.* **2019**, *1*, 2731-2740.
13. Sun, R.; Meek, K.M.; Ho, H.C.; Elabd, Y.A. Nitrogen-Doped Carbons Derived from Poly(ionic liquid)s of Various Backbones and Cations. *Polym. Int.* **2019**, *68*, 1599-1609. **Invited Contribution, Special Issue on Ionic Liquids in Polymer Science & Engineering: From Molecular Design to Energy & Beyond**
14. Sun, R.; Elabd, Y.A. Synthesis and High Alkaline Chemical Stability of Polyionic Liquids with Methylpyrrolidinium, Methylpiperidinium, Methylazepanium, Methylazocanium, and Methylazonanium Cations. *ACS Macro Letters* **2019**, *8*, 540-545.
15. Elabd, Y.A. Ion Transport in Hydroxide Conducting Block Copolymers. *Molecular Systems Design & Engineering*, **2019**, *4*, 519-530. **Invited Contribution, Special Issue on Charge Transporting Nanostructured Polymers for Electrochemical Systems**
16. Hwang, M.; Elabd, Y.A. Impact of Ionomer Resistance in Nanofiber-Nanoparticle Electrodes for Ultra-Low Platinum Fuel Cells. *Int. J. Hydrogen Energy* **2019**, *44*, 6245-6256.
17. Chen, T.-L.; Sun, R.; Willis, C.; Morgan, B.F.; Beyer, F.L.; Elabd, Y.A. Lithium Ion Conducting Polymerized Ionic Liquid Pentablock Terpolymers as Solid-State Electrolytes. *Polymer* **2019**, *161*, 128-138.
18. Meek, K.M.; Sun, R.; Willis, C.; Elabd, Y.A. Hydroxide Conducting Polymerized Ionic Liquid Pentablock Terpolymer Anion Exchange Membranes with Methylpyrrolidinium Cations. *Polymer* **2018**, *134*, 221-226.

19. Santos, M.C.; Bendiksen, B.; Elabd Y.A. Diffusion of Liquid Water in Free-Standing Polymer Films using Pressure-Contact Time-Resolved Fourier Transform Infrared Attenuated Total Reflectance Spectroscopy. *Ind. Eng. Chem. Res.* **2017**, *56*, 3464–3476.
20. Chen, T.-L.; Elabd, Y.A. Hybrid-Capacitors with Polyaniline/Carbon Electrodes Fabricated via Simultaneous Electrospinning/Electrospraying. *Electrochimica Acta* **2017**, *229*, 65-72.
21. Nykaza, J.R.; Li, Y.; Elabd, Y.A.; Snyder, J.D. Effect of Alkaline Exchange Polymerized Block Copolymer Ionomers on the Kinetics of Fuel Cell Half Reactions. *J. Electroanalytical Chem.* **2016**, *783*, 182-187.
22. Nykaza, J.R.; Savage, A.M.; Pan, Q.; Wang, S.; Beyer, F.L.; Tang, M.H.; Li, C.Y.; Elabd, Y.A. Polymerized Ionic Liquid Diblock Copolymer as Solid-State Separator and Electrolyte in Lithium-Ion Battery. *Polymer* **2016**, *101*, 311-318.
23. Nykaza, J.R.; Benjamin, R.; Meek, K.M. Elabd, Y.A. Polymerized Ionic Liquid Diblock Copolymer as an Ionomer and Anion Exchange Membrane for Alkaline Fuel Cells. *Chemical Engineering Science* **2016**, *154*, 119-127. **Invited Contribution, Special Issue on Recent Advances in Energy Conversion and Storage Devices**
24. Meek, K.M.; Elabd, Y.A. Sulfonated Polymerized Ionic Liquid Block Copolymers. *Macromolecular Rapid Comm.* **2016**, *37*, 1200-1206. **Invited Contribution, Special Issue on Ionic Liquids in Polymer Design**
25. Meek, K.M.; Nykaza, J.R.; Elabd, Y.A. Alkaline Chemical Stability and Ion Transport in Polymerized Ionic Liquids with Various Backbones and Cations. *Macromolecules* **2016**, *49*, 3382-2294.
26. Santos, M.; Jing, Y.; Fang, L.; Chaplin, B.P; Elabd Y.A. Highly Porous Ti₄O₇ Reactive Electrode Water Filtration Membranes via Simultaneous Electrospinning/Electrospraying Method. *AIChE J.* **2016**, *62*, 508-524. **Invited Contribution, Special Issue on Advances in Materials**
27. Nykaza, J.R.; Ye, Y.; Nelson, R.L.; Jackson, A.C.; Beyer, F.L.; Davis, E.M.; Page, K.A. Sharick, S.; Winey, K.I.; Elabd, Y.A. Polymerized Ionic Liquid Diblock Copolymers: Impact of Water/Ion Clustering on Ion Conductivity. *Soft Matter* **2016**, *12*, 1133-1144.
28. Long, T.E.; Elabd, Y.A.; Yuan, J. Ionic Liquids in Polymer Design. *Macromolecular Rapid Comm.* **2016**, *37*, 1105. **Invited Contribution, Special Issue on Ionic Liquids in Polymer Design**
29. Meek, K.M.; Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers for Electrochemical Energy. *Journal of Materials Chemistry A* **2015**, *3*, 24187-24194. **Invited Contribution**
30. Meek, K.M.; Elabd, Y.A. Alkaline Chemical Stability of Polymerized Ionic Liquids with Various Cations. *Macromolecules* **2015**, *48*, 7071-7084.
31. Tran, C.; Lawrence, D.; Richey, F.W.; Dillard, C.; Elabd, Y.A.; Kalra, V. Binder-free Three-dimensional High Energy Density Electrodes for Ionic-Liquid Supercapacitors. *Chem. Commun.* **2015**, *51*, 13670-13763.
32. Meek, K.M.; Sharick, S.; Ye, Y.; Winey, K.I.; Elabd, Y.A. Bromide and Hydroxide Conductivity-Morphology Relationships in Polymerized Ionic Liquid Block Copolymers. *Macromolecules* **2015**, *48*, 4850-4862.
33. Ansaloni, L.; Nykaza, J.R.; Ye, Y.; Elabd, Y.A.; Giacinti Baschetti, M. Influence of Water Vapor on the Gas Permeability of Polymerized Ionic Liquid Membranes. *J. Membr. Sci.*, **2015**, *487*, 199-208.
34. Salazar, M.; Richey, F.; Elabd, Y.A.; Reznikov, M. Further Improvement of the Ionic Thermoelectric Generator. *IEEE Transactions on Industrial Applications* **2015**, *51*, 1132-1136.

35. Richey, F.W.; Tran, C.; Kalra, V.; Elabd, Y.A. Ionic Liquid Dynamics in Nanoporous Carbon Nanofibers in Supercapacitors Measured with *in operando* Infrared Spectroelectrochemistry. *J. Phys. Chem. C*, **2014**, *118*, 21846-21855.
36. Forrey, C.; Saylor, D.M.; Silverstein, J.S.; Douglas, J.F.; Davis, E.M.; Elabd, Y.A. Prediction and Validation of Diffusion Coefficients in a Model Drug Delivery System Using Microsecond Atomistic Molecular Dynamics Simulation and Vapor Sorption Analysis. *Soft Matter* **2014**, *10*, 7480-7494.
37. Nykaza, J.R.; Ye, Y.; Elabd, Y.A. Polymerized Ionic Liquid Diblock Copolymers with Long Alkyl Side-Chain Length. *Polymer* **2014**, *55*, 3360-3369. **Invited Contribution, Special Issue on Polymerized Ionic Liquids**
38. Wang, X.; Richey, F.W.; Wujcik, K.; Ventura, R.; Mattson, K.; Elabd, Y.A. Effect of Polytetrafluoroethylene on Ultra-Low Platinum Loaded Electrospun/Electrosprayed Electrodes in Proton Exchange Membrane Fuel Cells. *Electrochimica Acta* **2014**, *139*, 217-224.
39. Zhang, L.; Kucera, L.R.; Ummadisetty, S.; Nykaza, J.R.; Elabd, Y.A.; Story, R.F.; Cavicchi, K.A.; Weiss, R.A. Supramolecular Multiblock Polystyrene-Polyisobutylene Copolymers via Ionic Interactions. *Macromolecules* **2014**, *47*, 4387-4396.
40. Wang, X.; Richey, F.W.; Wujcik, K.; Elabd, Y.A. Ultra-Low Platinum Loadings in Proton Exchange Membrane Fuel Cell Electrodes Fabricated via Simultaneous Electrospinning/Electrospraying Method. *J. Power Sources* **2014**, *264*, 42-48.
41. Dever, D.O.; Cairncross, R.A.; Elabd, Y.A. Nanofiber Cathode Catalyst Layer Model for a Proton Exchange Membrane Fuel Cell. *J. Fuel Cell Sci. & Tech.* **2014**, *11*, 041007, 1-13.
42. Choi, U.H.; Ye, Y.; Salas de la Cruz, D.; Liu, W.; Winey, K.I.; Elabd, Y.A.; Runt, J.; Colby, R.H. Dielectric and Viscoelastic Responses of Imidazolium-Based Ionomers with Different Counterions and Side Chain Lengths. *Macromolecules* **2014**, *47*, 777-790.
43. Liu, Y.; Kim, E.; Lee, M.E.; Zhang, B.; Elabd, Y.A.; Wang, Q.; White, I.M. Bentley, W.E.; Payne, G.F. Enzymatic Writing to Soft Films: Potential to Filter, Store and Analyze Biologically-relevant Chemical Information. *Adv. Funct. Mater.* **2014**, *24*, 480-491.
44. Davis, E.M.; Elabd, Y.A. Water Clustering in Glassy Polymers. *J. Phys. Chem. B* **2013**, *117*, 10629-10640.
45. Price, S.C.; Ren, X.; Jackson, A.C.; Ye, Y.; Elabd, Y.A.; Beyer, F.L. Bicontinuous Alkaline Fuel Cell Membranes from Strongly Self-Segregating Block Copolymers. *Macromolecules* **2013**, *46*, 7332-7340.
46. Davis, E.M.; Elabd Y.A. Prediction of Water Solubility in Glassy Polymers Using Nonequilibrium Thermodynamics. *Ind. Eng. Chem. Res.* **2013**, *52*, 12865-12875.
47. Richey, F.W.; Dyatkin, B.; Gogotsi, Y.; Elabd, Y.A. Ion Dynamics in Porous Carbon Electrodes in Supercapacitors using in situ Infrared Spectroelectrochemistry. *J. Amer. Chem. Soc.* **2013**, *135*, 12818-12826.
48. Choi, J.-H.; Ye, Y.; Elabd, Y.A.; Winey, K.I. Network Structure and Strong Microphase Separation for High Ion Conductivity in Polymerized Ionic Liquid Block Copolymers. *Macromolecules* **2013**, *46*, 5290-5300.
49. Davis, E.M.; Minelli, M.; Baschetti, M.G.; Jr.; Elabd, Y.A. Non-Fickian Diffusion of Water in Polylactide. *Ind. Eng. Chem. Res.* **2013**, *52*, 8664-8673. **Invited Contribution, Professor Giulio Sarti Festschrift**
50. Ye, Y.; Wang, S.; Davis, E.M.; Winey, K.I.; Elabd Y.A. High Hydroxide Conductivity in Polymerized Ionic Liquid Block Copolymers. *ACS Macro Letters* **2013**, *2*, 575-580.

51. Ye, Y.; Stokes, K.K.; Beyer, F.L.; Elabd, Y.A. Development of Phosphonium-based Bicarbonate Anion Exchange Polymer Membranes. *J. Membrane Sci.* **2013**, *443*, 93-99.
52. Richey, F.W.; Elabd, Y.A. In Situ Spectroscopic Measurements of Individual Cation and Anion Dynamics in a RuO₂ Electrochemical Capacitor. *J. Electrochem. Soc.* **2013**, *160*, A862-A868.
53. Salerno, H.L.S.; Elabd, Y.A. Anion Exchange Membranes Derived from Nafion Precursor for Alkaline Fuel Cells: Effect of Cation Type on Properties. *J. Appl. Polym. Sci.* **2013**, *127*, 298-307.
54. Salazar, M.; Richey, F.; Elabd Y.; Reznikov, M. Further Improvement of Ionic Thermoelectric Generator. *2013 IEEE Industrial Applications Society Annual Meeting Proceedings*, **2013**, 1-3.
55. Richey, F.W.; Elabd, Y.A. In Situ Molecular Level Measurements of Ion Dynamics in an Electrochemical Capacitor. *J. Phys. Chem. Lett.* **2012**, *3*, 3297-3301.
56. Davis, E.M.; Minelli, M.; Baschetti, M.G.; Jr.; Sarti, G.C.; Elabd, Y.A. Nonequilibrium Sorption of Water in Polylactide. *Macromolecules*, **2012**, *45*, 7486-7494.
57. Ye, Y.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Polymerized Ionic Liquid Block and Random Copolymers: Effect of Weak Microphase Separation on Ion Transport. *Macromolecules* **2012**, *45*, 7027-7035.
58. Salerno, H.L.S.; Beyer F.L.; Elabd, Y.A. Anion Exchange Membranes Derived from Nafion Precursor for Alkaline Fuel Cells. *J. Polym. Sci. Part B: Polym. Phys.* **2012**, *50*, 552-562.
59. Salas-de la Cruz, D.; Green, M.D.; Ye, Y.; Elabd, Y.A.; Long, T.E.; Winey, K.I. Correlating Backbone-to-Backbone Distance to Ionic Conductivity in Amorphous Polymerized Ionic Liquids. *J. Polym. Sci.: Part B: Pol. Phys.* **2012**, *50*, 338-346.
60. Smith, D.M.; Dong, B.; Marron, R.W.; Birnkrant, M.J.; Elabd, Y.A.; Natarajan, L.V.; Tondiglia, V.P.; Bunning, T.J.; Li, C.Y. Tuning Ionic Conducting Pathways Using Holographic Polymerization. *Nano Letters* **2012**, *12*, 310-314.
61. Ye, Y.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Polymerized Ionic Liquids: Comparing Ion Transport-Morphology Relationships in Block and Random Copolymers. *ACS Polymer Preprints* **2012**, *53* (1), 252-253.
62. Weber, R.L.; Ye, Y.; Schmitt, A.L.; Banik, S.M.; Elabd, Y.A.; Mahanthappa, M.K. Nanostructured Polymerized Ionic Liquid Block Copolymers. *ACS Polymer Preprints* **2012**, *53* (1), 250-251.
63. Davis, E.M.; McDermott, M.K.; Benetatos, N.M.; Elabd, Y.A. Drug Delivery in Biodegradable Polymer Coatings used in Drug-Eluting Medical Devices: An Infrared Spectroscopic Investigation. *ACS Polymeric Materials: Science and Engineering* **2012**, *106*, 167-168.
64. Ye, Y.; Elabd, Y.A. Chemical Stability of Anion Exchange Membranes for Alkaline Fuel Cells; In *Polymers for Energy Storage and Delivery: Polyelectrolytes for Batteries and Fuel Cells*. Page, K.A.; Soles, C.L.; Runt, J., Eds.; Oxford University Press, 2012; ACS Symposium Series 1096, pp 234-251. **Invited Contribution**
65. Green, M.D.; Salas-de la Cruz, D.; Ye, Y.; Layman, J.M.; Elabd, Y.A.; Winey, K.I.; Long, T.E. Alkyl-Substituted *N*-Vinylimidazolium Polymerized Ionic Liquids: Thermal Properties and Ionic Conductivities. *Macromol. Chem. Phys.* **2011**, *212*, 252-2528.
66. Ye, Y.; Elabd, Y.A. Relative Chemical Stability of Alkaline Exchange Polymerized Ionic Liquids. *Macromolecules* **2011**, *44*, 8494-8503.
67. Davis, E.M.; Theryo, G.; Hillmyer, M.A.; Cairncross, R.A.; Elabd, Y.A. Liquid Water Transport in Polylactide Homo and Graft Copolymers. *ACS Applied Materials & Interfaces* **2011**, *3*, 3997-4006.

68. Davis, E.M.; Benetatos, N.M.; Regnault, W.F.; Winey, K.I.; Elabd, Y.A. The Influence of Thermal History on the Structure and Water Transport in Parylene C Coatings. *Polymer* **2011**, *52*, 5378-5386.
69. Weber, R.L.; Ye, Y.; Banik, S.M.; Elabd, Y.A.; Hickner, M.A.; Mahanthappa, M.K. Thermal and Ion Transport Properties of Hydrophilic and Hydrophobic Polymerized Styrenic Imidazolium Ionic Liquids. *J. Polym. Sci.: Part B: Pol. Phys.* **2011**, *49*, 1287-1296.
70. Weber, R.L.; Ye, Y.; Schmitt, A.L.; Banik, S.M.; Elabd, Y.A.; Mahanthappa, M.K. Effect of Nanoscale Morphology on the Conductivity of Polymerized Ionic Liquid Block Copolymers. *Macromolecules* **2011**, *44*, 5727-5735.
71. McPeak, K.M.; Le, T.P.; Britton, N.G.; Nickolov, Z.S.; Elabd, Y.A.; Baxter, J.B. Chemical Bath Deposition of ZnO Nanowires at Near-Neutral pH Conditions without Hexamethylenetetramine (HMTA): Understanding the Role of HMTA in ZnO Nanowire Growth. *Langmuir* **2011**, *27*, 3672-3677.
72. Ye, Y.; Elabd, Y.A. Anion Exchanged Polymerized Ionic Liquids: High Free Volume Single Ion Conductors. *Polymer* **2011**, *52*, 1309-1317.
73. Elabd, Y.A.; Hickner, M.A. Block Copolymers for Fuel Cells. *Macromolecules* **2011**, *44*, 1-11. **Invited Contribution, Perspective Article**
74. Dong, B.; Chen, H.; Snyder, J.; Elabd, Y.A. Super Proton Conductive Nafion Nanofibers: Discovery, Fabrication, Properties, and Fuel Cell Performance. *Electrochemical Society Transactions* **2011**, *41* (1), 1503-1507.
75. Weber, R.L.; Ye, Y.; Elabd, Y.A.; Mahanthappa, M.K. Molecular Structure and Morphology Influence Ionic Conductivity in Polymerized Ionic Liquid Homopolymers and Block Copolymers. *ACS Polymeric Materials: Science and Engineering* **2011**, *105*, 783.
76. Ye, Y.; Mace, E.J.; Elabd, Y.A. Stable Hydroxide Anion Exchange Polymerized Ionic Liquid. *ACS Polymer Preprints* **2011**, *52* (1), 566-567.
77. Davis, E.M.; Minelli, M.; Baschetti, M.G.; Sarti, G.C.; Elabd, Y.A. Sorption and Diffusion of Water Vapor in Polylactide: Experiments and Model Predictions. *ACS Polymer Preprints* **2011**, *52* (1), 313-314.
78. Gwee, L.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Block Copolymer/Ionic Liquid Films: The Effect of Ionic Liquid Composition on Morphology and Ion Conduction. *Polymer* **2010**, *51*, 5516-5524.
79. Dong, B.; Gwee, L.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Super Proton Conductive High Purity Nafion Nanofibers. *Nano Letters* **2010**, *10*, 3785-3790.
80. Hallinan, D.T., Jr.; De Angelis, M.G.; Baschetti, M.G., Jr.; Sarti, G.C.; Elabd, Y.A. Non-Fickian Diffusion of Water in Nafion. *Macromolecules* **2010**, *43*, 4667-4678.
81. Rahmathullah, M.; Aflal, M.; Snyder, J.D.; Elabd, Y.A.; Palmese, G.R. Nanoporous and Proton Conductive Hydrophobic-Hydrophilic Copolymer Thermoset Membranes. *J. Polym. Sci.: Part B: Pol. Phys.* **2010**, *48*, 1245-1255.
82. Antonietti, M.; Shen, Y.; Nakanishi, T.; Manuelian, M.; Campbell, R.; Gwee, L.; Elabd, Y.A.; Tambe, N.; Crombez, R.; Texter, J. Single Wall Carbon Nanotube Latexes. *ACS Applied Materials & Interfaces* **2010**, *2*, 649-653.
83. Rahmathullah, M.; Aflal, M.; Elabd, Y.A.; Palmese, G.R. Kinetic and Thermomechanical Analysis of Hydrophobic-Hydrophilic Copolymer Thermosets Synthesized via Free-Radical Polymerization. *J. Appl. Polym. Sci.* **2010**, *115*, 1419-1427.

84. Hallinan, D.T., Jr.; De Angelis, M.G.; Baschetti, M.G.; Jr.; Sarti, G.C.; Elabd, Y.A. Water Transport in Proton Exchange Membranes: Insights from Time-Resolved Infrared Spectroscopy. *Electrochemical Society Transactions* **2010**, 33 (1), 1029-1033.
85. Davis, E.M.; Elabd, Y.A.; Winey, K.I.; Regnault, W.F.; Benetatos, N.M. New Characterization Techniques for Assessing the Structure and Water Transport of Parylene Coatings. *ACS Polymeric Materials: Science and Engineering* **2010**, 102, 59-60.
86. Schaeffer, H.; Elabd, Y.A. Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell. *ACS Polymeric Materials: Science and Engineering* **2010**, 102, 439-440.
87. Ye, Y.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ion Conduction in Polymerized Ionic Liquids: The Effect of Anion Type. *ACS Polymer Preprints* **2010**, 51 (1), 688-689.
88. Gwee, L.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Ionic Liquid-Polymer Solid-State Films: The Effect of Ionic Liquid Composition on Morphology and Ion Conduction. *ACS Polymer Preprints* **2010**, 51 (1), 421-422.
89. Chen, L.; Hallinan, D.T. Jr.; Elabd, Y.A.; Hillmyer, M.A. Highly Selective Polymer Electrolyte Membranes From Reactive Block Polymers. *Macromolecules*, **2009**, 42, 6075-6085.
90. Chen, H.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Polymerized Ionic Liquids: The Effect of Copolymer Composition on Ion Conduction. *Macromolecules* **2009**, 42, 4809-4816.
91. Chen, H.; Elabd, Y.A. Electrospinning and Solution Properties of Polymerized Ionic Liquids. *Macromolecules* **2009**, 42, 3368-3373.
92. Hallinan, D.T., Jr.; Elabd, Y.A. Diffusion of Water in Nafion using Time-Resolved FTIR-ATR Spectroscopy. *J. Phys. Chem. B* **2009**, 113, 4257-4266.
93. Snyder, J.D.; Elabd, Y.A. Nafion[®] Nanofibers and Their Effect on Polymer Electrolyte Membrane Fuel Cell Performance. *J. Power Sources* **2009**, 186, 385-392.
94. Chen, H.; Gwee, L.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Conduction in Polymerized Ionic Liquids and Ionic Liquid-Polymer Mixtures. *ACS Polymeric Materials: Science and Engineering* **2009**, 100, 696-697.
95. Chen, H.; Rahmathullah, A.M.; Palmese, G.R.; Elabd, Y.A. Polymer-Polymer Nanocomposite Membranes as Breathable Barriers with Electro-Sensitive Permeability; In *Nanoscience and Nanotechnology for Chemical and Biological Defense*. Nagarajan, R.; Zukas, W.; Hatton, T.A.; Lee, S., Eds.; Oxford University Press, 2009; ACS Symposium Series 1016, pp 307-322. **Invited Contribution**
96. Chen, H.; Snyder, J.D.; Elabd, Y.A. Electrospinning and Solution Behavior of Nafion and Poly(acrylic acid). *Macromolecules* **2008**, 41, 128-135.
97. Chen, H.; Elabd, Y.A. Ionic Liquid Polymers: Electrospinning and Solution Properties. *ACS Polymeric Materials: Science and Engineering* **2008**, 99, 646-647.
98. Chen, H.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Liquid Polymers: The Effect of Copolymer Composition on Structure and Ion Conduction. *ACS Polymeric Materials: Science and Engineering* **2008**, 99, 21-22.
99. Rahmathullah, A.M.; Robinette, E.J.; Chen, H.; Elabd, Y.A.; Palmese G.R. Plasma-Assisted Synthesis of Hollow Nanofibers using Electrospun Sacrificial Templates. *Nucl. Instrum. Meth. B* **2007**, 265, 23-30.

100. Hallinan, D.T., Jr.; Elabd, Y.A. Diffusion and Sorption of Methanol and Water in Nafion using Time-Resolved FTIR-ATR Spectroscopy. *J. Phys. Chem. B* **2007**, *111*, 13221-13230. **Featured in Photonics Spectra, Jan 2008**
101. Hallinan, D.T., Jr.; Elabd, Y.A. Sorption and Diffusion Selectivity of Methanol/Water Mixtures in Nafion®. In *Micro-Mini Fuel Cells – Fundamentals and Applications*; Kakac, S., Pramuanjaroenkij, A., Vasiliev, L., Eds; Springer: Netherlands, 2008; pp 189-208. **Invited Contribution**
102. Chen, H.; Elabd, Y.A.; Palmese, G.R. Plasma-Aided Template Synthesis of Inorganic Nanotubes and Nanorods. *J. Mater. Chem.* **2007**, *17*, 1593-1596.
103. Chen, H.; Palmese, G.R.; Elabd, Y.A. Electrosensitive Permeability of Membranes with Oriented Polyelectrolyte Nanodomains. *Macromolecules* **2007**, *40*, 781-782.
104. DeLuca, N.W.; Elabd, Y.A. Direct Methanol Fuel Cell Performance of Nafion®/ Poly(vinyl alcohol) Blend Membranes. *J. Power Sources* **2006**, *163*, 386-391.
105. Chen, H.; Palmese, G.R.; Elabd, Y.A. Membranes with Oriented Polyelectrolyte Nanodomains. *Chem. Mater.* **2006**, *18*, 4875-4881.
106. DeLuca, N.W.; Elabd, Y.A. Nafion®/Poly(vinyl alcohol) Blends: Effect of Composition and Annealing Temperature on Transport Properties. *J. Membrane Sci.* **2006**, *282*, 217-224.
107. DeLuca, N.W.; Elabd, Y.A. Polymer Electrolyte Membranes for the Direct Methanol Fuel Cell: A Review. *J. Polym. Sci.: Part B: Pol. Phys.* **2006**, *44*, 2201-2225. **Invited Contribution, Special Issue on Polymers in Fuel Cells**
108. Elabd, Y.A.; Napadensky, E.; Walker, C.W.; Winey, K.I. Transport Properties of Sulfonated Poly(styrene-isobutylene-styrene) Triblock Copolymers at High Ion-Exchange Capacities. *Macromolecules* **2006**, *39*, 399-407.
109. Chen, H.; Palmese, G.R.; Elabd, Y.A. Membranes with Oriented Polyelectrolyte Nanodomains as Breathable Barriers for Protective Clothing. *25th Army Science Conference Proceedings* **2006**, *MP-01*.
110. Napadensky, E.; Elabd, Y.A. Transport Properties of N-Methylolated Nylon-6/Chitosan Blend Membranes;. *U.S. Army Research Laboratory Technical Report: ARL-TR-3917*, September 2006.
111. Chen, H.; Palmese, G.R.; Elabd, Y.A. Membranes with Oriented Polyelectrolyte Nanodomains. *ACS Polymeric Materials: Science and Engineering* **2006**, *95*, 269-270.
112. Suleiman, D.; Elabd, Y.A.; Napadensky, E.; Sloan, J.M.; Crawford, D.M. Thermogravimetric Characterization of Sulfonated Poly(styrene-isobutylene-styrene) Block Copolymers: Effects of Processing Conditions. *Thermochim. Acta* **2005**, *430*, 149-154.
113. Wu, L-Q.; Ghodssi, R.; Elabd, Y.A.; Payne, G.F. Biomimetic Pattern Transfer. *Adv. Funct. Mater.* **2005**, *15*, 189-195.
114. Hronec, C.; Walker, C.W.; Elabd, Y.A. Catalyst Layer Network Formation and its Effect on Fuel Cell Performance. *ACS Fuel Preprints* **2005**, *50* (2), 478-479.
115. Chen, H.; Palmese, G.R.; Elabd, Y.A. Polyester-Poly(methacrylic acid) Nanocomposite Membranes as Breathable Barriers. *ACS Polymer Preprints* **2005**, *46* (2), 1202-1203.
116. Mohamed Aflal, M.R.; Elabd, Y.A.; Palmese, G.R. Proton Conductive Nanoporous Thermosetting Copolymers. *ACS Polymeric Materials: Science and Engineering* **2005**, *93*, 564-565.
117. Wu, L-Q.; Ghodssi, R.; Elabd, Y.A.; Payne, G.F. Biomimetic Pattern Transfer from a Hard Material to a Soft Biomaterial. *ACS Polymeric Materials: Science and Engineering* **2005**, *93*, 246-247.

118. Elabd, Y.A.; Napadensky, E. Sulfonation and Characterization of Poly(styrene-isobutylene-styrene) Triblock Copolymers at High Ion-Exchange Capacities. *Polymer* **2004**, *45*, 3037-3043.
119. Elabd, Y.A.; Beyer, F.L.; Walker, C. W. Triblock Copolymer Ionomer Membranes. Part II: Structure Characterization and its Effects on Transport Properties and Direct Methanol Fuel Cell Performance. *J. Membrane Sci.* **2004**, *231*, 181-188.
120. Sloan, J.M.; Napadensky, E.; Crawford D.M.; Elabd, Y.A. Nanostructured Polymer Membranes for Chemical Protective Clothing. *24th Army Science Conference Proceedings* **2004**, MP-07.
121. Napadensky, E.; Sloan, J.M.; Elabd, Y.A. Breathability and Selectivity of Selected Materials for Protective Clothing. *ACS Polymeric Materials: Science and Engineering* **2004**, *91*, 752-753.
122. Elabd, Y.A.; Walker, C.W. Proton Conducting Block Copolymers and their Application to the Direct Methanol Fuel Cell. *41st Proceedings of the Power Sources Conference* **2004**, *16.4*, 262-265.
123. Elabd, Y.A.; Napadensky, E.; Walker, C.W. Proton Conducting Block Copolymers: Sulfonation, Characterization and Application to the Direct Methanol Fuel Cell, *ACS Polymer Preprints* **2004**, *45* (1), 18-19.
124. Napadensky, E.; Elabd, Y.A. Breathability and Selectivity of Selected Materials for Protective Clothing. *U.S. Army Research Laboratory Technical Report: ARL-TR-3235*, July **2004**.
125. Elabd, Y.A.; Baschetti Giacinti, M.; Barbari, T.A. Time-Resolved FTIR-ATR Spectroscopy for the Measurement of Molecular Diffusion in Polymers. *J. Polym. Sci.: Part B: Pol. Phys.* **2003**, *41*, 2794-2807. **Invited Contribution**
126. Elabd, Y.A.; Napadensky, E.; Sloan, J.M.; Crawford, D.M.; Walker, C. W. Triblock Copolymer Ionomer Membranes. Part I: Methanol and Proton Transport. *J. Membrane Sci.* **2003**, *217*, 227-242.
127. Elabd, Y.A.; Barbari, T.A. Multicomponent Diffusion of Hydrogen Bonding Solutes in a Polymer. *AIChE J.* **2002**, *48*, 1610-1620.
128. Harris, J.; Elabd, Y.A.; Napadensky, E.; Moy, P. Thermal Processing and Composite Laminate Formation of Ionic Block Copolymers for Protective Clothing. *U.S. Army Research Laboratory Technical Report: ARL-TR-2892*, December **2002**.
129. Elabd, Y.A.; Napadensky, E.; Sloan, J.M.; Crawford, D.M.; Walker, C.W. Transport Properties of Triblock Copolymer Ionomer Membranes for Fuel Cells. *23rd Army Science Conference Proceedings* **2002**, AO-02.
130. Crawford, D.M.; Elabd, Y.; Sloan J.M.; Napadensky, E.; Kendrick C.; Zukas, W. X. Mechanical Properties and Water Vapor Transport Properties of Sulfonated Block Copolymers. *ACS Polymer Preprints* **2002**, *43* (1), 430-431.
131. Sloan, J.M.; Elabd, Y.A.; Napadensky, E. Sulfonated Block Copolymer Ionomers for Use in Direct Methanol Fuel Cells. *60th Proceedings of the Society of Plastic Engineers Annual Technical Conference* **2002**, *3*, 3939-3941.
132. Elabd, Y.A.; Sloan, J.M.; Beck Tan, N.; Barbari, T.A. The Effect of Penetrant-Polymer Interactions on Molecular Diffusion in Conformational Isomers of a Heterogeneous Polymer. *Macromolecules* **2001**, *34*, 6268-6273.
133. Elabd, Y.A.; Barbari, T.A. Acetic Acid Diffusion in Polyisobutylene: Probing Small Molecule Structures. *Ind. Eng. Chem. Res.* **2001**, *40*, 3076-3084.
134. Elabd, Y.A.; Barbari, T.A. Separating Solvation from Molecular Diffusion in Polymers. *AIChE J.* **2001**, *47*, 1255-1262. **Featured in Chemical Engineering Progress, June 2001**

135. Crawford, D.M.; Napadensky, E.; Elabd, Y.A.; Sloan, J.M.; Mountz, D.; Mauritz, K.A. DMA Characterization of Modified Polystyrene-Polyisobutylene-Polystyrene Triblock Copolymers. *29th Proceedings of the NATAS Annual Conference on Thermal Analysis and Applications* **2001**, 240-245.
136. Elabd, Y.A.; Sloan, J.M.; Barbari, T.A. Diffusion of Acetonitrile in Conformational Isomers of an H₁₂MDI Polyurethane. *Polymer* **2000**, *41*, 2203-2212.
137. Payne, G.F.; Elabd, Y.A.; Lenhart, J.L.; Rameriz, D.M. Enzymatic Modification of Chitosan by Tyrosinase. *ACS Polymeric Materials: Science and Engineering* **1996**, *74*, 36.

PATENTS

1. U.S. Patent 11,469,423, October 11, 2022.
2. U.S. Patent 10,112,001, November 6, 2018.
3. U.S. Patent 9,806,314, October 31, 2017.
4. U.S. Patent 9,365,688, June 14, 2016.
5. U.S. Patent 8,853,286, October 7, 2014.
6. U.S. Patent 8,686,054, April 1, 2014.
7. U.S. Patent 8,173,713, May 8, 2012.
8. U.S. Patent 7,307,127, December 11, 2007. **Featured in Homeland Security Daily Wire, February 2008.**

PRESENTATIONS (Presenter Underlined)

1. Nixon, K.; Elabd, Y.A. Star Poly(ionic liquid)s. Spring National Meeting of the American Chemical Society, Indianapolis, IN, March 2023. *Oral Presentation* **Received Excellence in Polymer Graduate Research Symposium Award**
2. Nixon, K.; Elabd, Y.A. Star Poly(ionic liquid)s. Spring National Meeting of the American Chemical Society, Indianapolis, IN, March 2023. *Poster Presentation* **Received ACS POLY Outstanding Poster Award**
3. Nixon, K.; Elabd, Y.A. Star Poly(ionic liquid)s. AIChE Annual Meeting, Phoenix, AZ, November 2022. *Oral Presentation*
4. Kim, D.; Elabd, Y.A. Ultra-Low Platinum Fuel Cells with Nanofiber/Nanoparticle Electrodes via Simultaneous Needleless Electrospinning and Needle Electrospraying Technique. AIChE Annual Meeting, Phoenix, AZ, November 2022. *Oral Presentation*
5. Nixon, K.; Sun, R.; Elabd, Y.A. Star Poly(ionic liquid)s. NOBCCChE Annual Meeting, Orlando, FL, September 2022. *Oral Presentation* **Received 1st Place in DuPont GOLD Seminar Competition**
6. Elabd, Y.A. Single Ion Conducting Block Copolymers. American Chemical Society Research Conference: Chemistry and Chemical Engineering in MENA, Doha, Qatar, May 2022. *Oral Presentation* **Invited Keynote Speaker**
7. Nixon, K.; Elabd, Y.A. Poly(ionic liquid) Star Block Polymers. AIChE Annual Meeting, Boston, MA, November 2021. *Poster Presentation (Virtual)*
8. Kim, D.; Chen, T.-L.; Krutzer, B.; Willis, C.L.; Elabd, Y.A. Poly(ionic liquid) Triblock and Pentablock Terpolymer Electrolytes for Solid-State Lithium Metal Batteries. AIChE Annual Meeting, Boston, MA, November 2021. *Poster Presentation (Virtual)*

9. Yang, Y.; Tochetto, R.; Elabd, Y.A. Electrolytic Air Dehumidification *via* Reverse Fuel Cells with Sulfonated Pentablock Terpolymer. AIChE Annual Meeting, Boston, MA, November 2021. *Oral Presentation (Virtual)*
10. Van Cleve, T.; Hu, L.; Li, Y.; Osmieri, L.; Cetinbas, C.; Khandavalli, S.; Wang, H.; Kabir, S.; Star, A.; Weber, A.Z.; Elabd, Y.A.; Pylypenko, S.; Mauger, S.A.; Ulsh, M.; Snyder, J.D.; Myers, D.J.; Neyerlin, K.C. Linking Ionomer/Electrocatalyst Interactions to Membrane Electrode Assembly Performance and Durability in Proton Exchange Membrane Fuel Cells. 240th Electrochemical Society Meeting, Virtual Meeting, October 2021. *Oral Presentation (Virtual)* **Invited Speaker**
11. Elabd, Y.A. Single Ion Conducting Block Copolymers. Fall National Meeting of the American Chemical Society, Atlanta, GA, August 2021. *Oral Presentation (Virtual)* **Invited Speaker**
12. Elabd, Y.A. Hydroxide Conducting Block Copolymers. American Physical Society Meeting, March 2021. *Oral Presentation (Virtual)* **Invited Speaker**
13. Yang, Y.; Elabd, Y.A. 3D Patterned Electrodes for Ultra-Low Platinum Fuel Cells. AIChE Annual Meeting, Virtual Meeting, November 2020. *Poster Presentation (Virtual)*
14. Sun, R.; Agrawal, M.; Snyder, J.; Elabd, Y.A. Sulfonated Poly(ionic liquid) Block Copolymers as Ionomers in Ultra-Low Platinum Fuel Cells. AIChE Annual Meeting, Virtual Meeting, November 2020. *Oral Presentation (Virtual)*
15. Li, Y.; Van Cleve, T.; Elabd, Y.A.; Snyder, J.; Neyerlin, K.C. Improved Fuel Cell Performance Incorporating a Novel Ionic Liquid-Functionalized Electrolyte. AIChE Annual Meeting, Virtual Meeting, November 2020. *Oral Presentation (Virtual)*
16. Lathrop, P.; Elabd, Y.A. Targeted Synthesis of Poly(ionic liquid) ABC Triblock Terpolymers. AIChE Annual Meeting, Virtual Meeting, November 2020. *Oral Presentation (Virtual)*
17. Sun, R.; Agrawal, M.; Elabd, Y.A. Proton Conducting Sulfonated Poly(ionic liquid) Block Copolymers. AIChE Annual Meeting, Orlando, FL, November 2019. *Oral Presentation*
18. Chen, T.-L.; Sun, R.; Willis, C.; Elabd, Y.A. Poly(ionic liquid) Pentablock Terpolymer Electrolytes in Solid-State Lithium Ion Batteries. AIChE Annual Meeting, Orlando, FL, November 2019. *Oral Presentation*
19. Lathrop, P.; Elabd, Y.A. ABC Polymeric Ionic Liquid Terpolymers. AIChE Annual Meeting, Orlando, FL, November 2019. *Poster Presentation*
20. Elabd, Y.A. Hydroxide Conducting Block Copolymers. Fall National Meeting of the American Chemical Society, San Diego, CA, August 2019. *Oral Presentation* **Invited Speaker**
21. Chen, T.-L.; Sun, R.; Willis, C.L.; Morgan, B.; Beyer, F.L.; Elabd, Y.A. Room Temperature Solid-State Lithium Polymer Battery with Polyionic Liquid Pentablock Terpolymer Electrolyte, 235th Electrochemical Society Meeting, Dallas, TX, May 2019. *Oral Presentation*
22. Hwang, M.; Willis, C.L.; Elabd, Y.A. Alkaline Fuel Cell Performance of Saturated *N*-Heterocyclic Cationic Multiblock Polymers, 235th Electrochemical Society Meeting, Dallas, TX, May 2019. *Oral Presentation*
23. Elabd, Y.A. Transport-Morphology Relationships in Polymerized Ionic Liquid Multiblock Polymers. Spring National Meeting of the American Chemical Society, Orlando, FL, April 2019. *Oral Presentation* **Invited Speaker**
24. Elabd, Y.A. Ion Transport in Anion Exchange Membranes for Alkaline Fuel Cells. Spring National Meeting of the American Chemical Society, Orlando, FL, April 2019. *Oral Presentation* **Invited Speaker**

25. Mara, N.; Hwang, M.; Elabd, Y.A. Pentablock Terpolymer Nanofiber-Particle Electrodes for Ultra-Low Platinum Alkaline Fuel Cells. Regional AIChE Meeting, Lubbock, TX, March 2019. *Poster Presentation*
26. Sun, R.; Hwang, M.; Willis, C.L.; Elabd, Y.A. Saturated N-Heterocyclic Cationic Polymers as Anion Exchange Membranes in Alkaline Fuel Cells. AIChE Annual Meeting, Pittsburgh, PA, November 2018. *Oral Presentation*
27. Chen, T.-L.; Sun, R.; Willis, C.L.; Morgan, B.; Beyer, F.L.; Elabd, Y.A. Lithium Ion Conducting Multiblock Polymers as Solid-State Electrolytes for Lithium Ion Batteries. AIChE Annual Meeting, Pittsburgh, PA, November 2018. *Oral Presentation*
28. Elabd, Y.A.; Meek, K.M.; Sun, R.; Hwang, M.; Chen, T.-L.; Willis, C. Saturated N-Heterocyclic Multiblock Polymers as Solid-State Separators in Alkaline Fuel Cells and Lithium Ion Batteries. Fall National Meeting of the American Chemical Society, Boston, MA, August 2018. *Oral Presentation* **Invited Speaker**
29. Hwang, M.; Karenson, M.; Elabd, Y.A. High Production Rate of Nafion Nanofibers *via* Needleless Electrospinning. AIChE Annual Meeting, Pittsburgh, PA, November 2018. *Poster Presentation*
30. Hwang, M.; Willis, C.L.; Elabd, Y.A. Alkaline Fuel Cell Performance of Saturated N-Heterocyclic Multiblock Polymers. AIChE Annual Meeting, Pittsburgh, PA, November 2018. *Poster Presentation*
31. Sun, R.; Elabd, Y.A. Saturated N-Heterocyclic Cationic Polymers. Spring National Meeting of the American Chemical Society, New Orleans, LA, March 2018. *Poster Presentation*
32. ACS Division of Polymer Chemistry (POLY) Webinar, “The Power of Plastics: Polymerized Ionic Liquids and Nanosctructured Polymers for Battery and Other Applications, April 18, 2017, Moderator: Marc Hilmyer, University of Minnesota, Speakers: Yossef A. Elabd, Texas A&M University, and Thomas Epps III, University of Delaware. Webinar YouTube: <https://youtu.be/T41tQzz91A>
33. Hwang, M.; Elabd, Y.A. Impact of Ionomer Resistance in Nanofiber-Nanoparticle Electrodes for Ultra-Low Platinum Fuel Cells. AIChE Annual Meeting, Minneapolis, MN, November 2017. *Oral Presentation*
34. Sun, R.; Meek, K.M.; Elabd, Y.A. Carbon Derived from Polymerized Ionic Liquids. AIChE Annual Meeting, Minneapolis, MN, November 2017. *Oral Presentation*
35. Meek, K.M.; Nykaza, J., Sun, R.; Willis, C.L.; Elabd, Y.A. Chemical Stability and Ion Transport in Polymerized Ionic Liquid Anion Exchange Membranes. Fall National Meeting of the American Chemical Society, Washington, D.C., August 2017. *Oral Presentation* **Selected as DSM Science & Technology Award Finalist**
36. Chen, T.-L.; Elabd, Y.A. Polymerized Ionic Liquid Pentablock Terpolymer for Lithium-Metal Batteries. AIChE Annual Meeting, Minneapolis, MN, November 2017. *Poster Presentation*
37. Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers for Alkaline Fuel Cells. Materials Research Society Fall National Meeting, Boston, MA, November 2016. *Oral Presentation* **Invited Speaker**
38. Meek, K.M.; Nykaza, J., Sun, R.; Willis, C.L.; Elabd, Y.A. Chemical Stability and Ion Transport in Polymerized Ionic Liquid Anion Exchange Membranes. AIChE Annual Meeting, San Francisco, CA, November 2016. *Oral Presentation* **Selected for Excellence in Graduate Polymer Research Session – Received 2nd Place Award in Session**
39. Santos, M.; Elabd, Y.A. *In Situ* Pressure-Contact Time-Resolved Fourier Transform Infrared Attenuated Total Reflectance Spectroscopy: A New Method to Measure Liquid Diffusion in Free-Standing Polymer Films. AIChE Annual Meeting, San Francisco, CA, November 2016. AIChE, San Francisco, CA, November 2016. *Oral Presentation*

40. Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers for Alkaline Fuel Cells. American Chemical Society Southwest Regional Meeting (ACS-SWRM), Galveston, TX, November 2016. *Oral Presentation* **Invited Speaker**
41. Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers. American Chemical Society Meeting on Advanced Polymer Materials (ACS-APM), Houston, TX, November 2016. *Oral Presentation* **Invited Speaker**
42. Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers for Alkaline Fuel Cells. 15th International Symposium on Polymer Electrolytes. Uppsala, Sweden, August 2016. *Oral Presentation* **Invited Speaker**
43. Elabd, Y.A. Membranes for Fuel Cells. European Membrane Society Summer School, Bertinoro, Italy, June 2016. *Oral Presentation* **Invited Speaker**
44. Sun, R.; Meek, K.M.; Elabd, Y.A. PIL-Derived Carbon. AIChE Annual Meeting, San Francisco, CA, November 2016. *Poster Presentation*
45. Hwang, M.; Elabd, Y.A. Exploration of Nanofiber-Nanoparticle Electrodes Fabricated *via* Simultaneous Electrospinning/Electrospraying for Ultra-Low Platinum Fuel Cells. AIChE Annual Meeting, San Francisco, CA, November 2016. *Poster Presentation*
46. Chen, T.-L.; Elabd, Y.A. Hybrid-Capacitors with Polyaniline/Carbon Electrodes Fabricated *via* Simultaneous Electrospinning/Electrospraying. AIChE Annual Meeting, San Francisco, CA, November 2016. *Poster Presentation*
47. Lathrop, P.; Elabd, Y.A. Polymerized Ionic Liquid Triblock Terpolymers: Synthesis and Characterization. AIChE Annual Meeting, San Francisco, CA, November 2016. *Poster Presentation*
48. Santos, M.; Jing, Y.; Fang, L.; Chaplin, B.; Elabd, Y.A. Highly Porous Ti₄O₇ Reactive Electrode Membranes for Water Filtration. AIChE Annual Meeting, Salt Lake City, UT, November 2015. *Oral Presentation*
49. Meek, K.M.; Savage, A.M.; Beyer, F.L.; Elabd, Y.A. Chemical Stability and Ion Transport in Polymerized Ionic Liquid Block Copolymer Anion Exchange Membranes with Various Cations. AIChE Annual Meeting, Salt Lake City, UT, November 2015. *Oral Presentation*
50. Nykaza, J.R.; Li, Y.; Elabd, Y.A.; Snyder, J. The Hydroxide Conductivity and Chemical Stability of a Polymerized Ionic Liquid Diblock Copolymer for Alkaline Fuel Cells Using Rotating Disk Electrode. AIChE Annual Meeting, Salt Lake City, UT, November 2015. *Oral Presentation*
51. Elabd, Y.A. Polymerized Ionic Liquid Block Copolymer as Anion Exchange Membranes. Fall National Meeting of the American Chemical Society, Boston, MA, August 2015. *Oral Presentation* **Invited Speaker**
52. Meek, K.M.; Beyer, F.L.; Elabd, Y.A. Transport and Morphology of Polymerized Ionic Liquid Block Copolymer Anion Exchange Membranes with Various Cations. Spring National Meeting of the American Chemical Society, Denver, CO, March 2015. *Oral Presentation*
53. Nykaza, J.R.; Sharick, S.; Davis, E.M.; Ye, Y.; Page, K.A.; Jackson, A.; Beyer, F.L.; Winey, K.I.; Elabd, Y.A. Impact of Alkyl Chain Length on Ion Conduction and Morphology in Polymerized Ionic Liquid Diblock Copolymers. Spring National Meeting of the American Chemical Society, Denver, CO, March 2015. *Oral Presentation*
54. Elabd, Y.A. Water in Renewable Polymers: Nonequilibrium Thermodynamics. American Physical Society Meeting, San Antonio, TX, March 2015. *Oral Presentation* **Invited Speaker**
55. Weiss, R.A.; Zhang, L.; Cavicchi, K.A.; Story R.F.; Kucera, L.R.; Ummadisetty, S.; Elabd, Y.A.; Nykaza, J.R. Synthesis and Properties of Supramolecular Multiblock Copolymers Formed From Ionic Bonds. Materials Research Society Fall Meeting, Boston, MA, December 2014. *Oral Presentation*

56. Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers: Highly Versatile Ion Conductors. Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA, November 2014. *Oral Presentation* **Invited Speaker**
57. Ye, Y.; Nykaza, J.R.; Meek, K.M.; Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers as Anion Exchange Membranes for Alkaline Fuel Cells. Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA, November 2014. *Oral Presentation* **Invited Speaker**
58. Ansaloni, L.; Nykaza, J.R.; Minelli, M.; Elabd, Y.A.; Giaciniti Baschetti, M. Polymerized Ionic Liquid Membranes for CO₂ Capture: The Effect of Water Vapor. Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA, November 2014. *Oral Presentation*
59. Richey, F.W.; Hallinan, Jr., D.T.; Elabd, Y.A. In Situ Time-Resolved Infrared Spectroelectrochemistry of Fuel Cells and Electrochemical Capacitors. Spring National Meeting of the American Chemical Society, Dallas, TX, March 2014. *Oral Presentation* **Invited Speaker**
60. Nykaza, J.R.; Ye, Y.; Elabd, Y.A. Synthesis of Long-Chain Polymerized Ionic Liquid Diblock Copolymers with High Ion Conductivity. Spring National Meeting of the American Chemical Society, Dallas, TX, March 2014. *Oral Presentation*
61. Meek, K.M.; Ye, Y.; Elabd, Y.A. Chemical Stability of Polymerized Ionic Liquid Block Copolymer Anion Exchange Membranes with Various Cations. Spring National Meeting of the American Chemical Society, Dallas, TX, March 2014. *Oral Presentation*
62. Sharick, S.; Meek, K.; Ye, Y.; Elabd, Y.A.; Winey, K.I. Morphology and Ionic Conductivity of Humidity-Responsive Polymerized Ionic Liquid Block Copolymers. American Physical Society Meeting, Denver, CO, March 2014. *Oral Presentation*
63. Benjamin, R.; Nykaza, J.R.; Elabd, Y.A. Alkaline Fuel Cell Performance with a Polymerized Ionic Liquid Block Copolymer as Anion Exchange Membrane. Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA, November 2014. *Poster Presentation* **Received 3rd Place Award in the Materials Science and Engineering Poster Competition**
64. Nykaza, J.R.; Elabd, Y.A. Polymerized Ionic Liquid Block Copolymers as Solid-State Polymer Electrolytes for Lithium-Ion Batteries. Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA, November 2014. *Poster Presentation*
65. Jackson, A.C.; Li, Y.; Nykaza, J.R.; Elabd, Y.A.; Knauss, D.M.; Beyer, F.L.; Walck, S.D. HAADF STEM of Phase Separated Anion Exchange Membranes Prepared by Ultramicrotomy. Microscopy and Microanalysis Meeting, Hartford, CT, August 2014. *Poster Presentation*
66. Ansaloni, L.; Nykaza, J.; Minelli, M.; Elabd, Y.A.; Giacinti Baschetti, M. Characterization of the Gas Transport Properties of PILs Membranes under Humid Conditions. ICOM 2014 - The 10th International Congress on Membranes and Membrane Processes, Suzhou, China, July 2014. *Poster Presentation*
67. Dyatkin, B.; Richey, F.W.; Elabd, Y.A.; Gogotsi, Y. Novel in situ Infrared Spectroelectrochemistry Technique for Analyzing Ionic Liquid Electrolyte Dynamics at Interfaces of Carbon Supercapacitor Electrodes. Materials Research Society Meeting, Boston, MA, December 2013. *Oral Presentation*
68. Nykaza, J.R.; Meek, K.M.; Ye, Y.; Elabd, Y.A. Invited Talk: Block Copolymers as Anion Exchange Membranes for Alkaline Fuel Cells. Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2013. *Oral Presentation* **Invited Speaker**
69. Richey, F.W.; Dyatkin, B.; Gogotsi, Y.; Elabd, Y.A. Time-Resolved Ion Dynamics in Carbon Supercapacitor Electrodes Using In Situ Infrared Spectroscopy. Ion Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2013. *Oral Presentation*

70. Davis, E.M.; Elabd, Y.A. Water Sorption and Diffusion in Glassy Polymers: Nonequilibrium Thermodynamics and States of Water. Ion Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2013. *Oral Presentation*
71. Richey, F.W.; Dyatkin, B.; Gogotsi, Y.; Elabd, Y.A. Time-Resolved Ion Dynamics in Carbon Supercapacitor Electrodes Using In Situ Infrared Spectroscopy. 224th Electrochemical Society Meeting, San Francisco, CA, October 2013. *Oral Presentation* **Received ECS Student Travel Award**
72. Dyatkin, B.; Richey, F.W.; Elabd, Y.A.; Gogotsi, Y. Time-Resolved Ion Mobility in Supercapacitor Electrodes Studied Using In Situ Attenuated Total Reflectance Infrared Spectroscopy. Materials Research Society Meeting, San Francisco, CA, April 2013. *Oral Presentation*
73. Wang, S.; Ye, Y.; Elabd, Y.A.; Winey, K.I. Morphologies and Ionic Conductivity in Polymerized Ionic Liquid Block Copolymers. Materials Research Society Meeting, San Francisco, CA, April 2013.
74. Elabd, Y.A. Fuel Cell Membranes. Short course on Membranes for Clean Water and Energy. American Physical Society Meeting, Baltimore, MD, March 2013. *Oral Presentation* **Invited Speaker**
75. Davis E.M.; Elabd, Y.A. States of Water in Non-Equilibrium Glassy Polymers. American Physical Society Meeting, Baltimore, MD, March 2013. *Oral Presentation*
76. Beyer, F.L.; Price, S.; Jackson, A.; Ren, X.; Chu, D.; Ye, Y.; Elabd, Y.A. Anion Exchange Membranes Based on Reactive Block Copolymers. American Physical Society Meeting, Baltimore, MD, March 2013. *Oral Presentation*
77. Wang, S.; Ye, Y.; Elabd, Y.A.; Winey, K.I. Ordered and Disordered Polymerized Ionic Liquid Block Copolymers: Morphology and Ion Conductivity. American Physical Society Meeting, Baltimore, MD, March 2013. *Oral Presentation*
78. Choi, J.-H.; Ye, Y.; Elabd, Y.A.; Winey, K.I. Effect of Morphology on Ion Transport in Polymerized Ionic Liquid Block Copolymers. American Physical Society Meeting, Baltimore, MD, March 2013. *Oral Presentation*
79. Elabd, Y.A. Block Copolymers in Fuel Cells. Advanced in Materials for Proton Exchange Membrane Fuel Cells Systems Meeting, sponsored by The Division of Polymer Chemistry (POLY) of the American Chemical Society, Asilomar, CA, February 2013. *Oral Presentation* **Invited Speaker**
80. Dyatkin, B.; Richey, F.W.; Elabd, Y.A.; Gogotsi, Y. Ionic Liquid Electrolyte Dynamics in Porous Architectures of Supercapacitor Electrodes Determined via in situ Infrared Spectroelectrochemistry. Materials Research Society Meeting, Boston, MA, December 2013. *Poster Presentation*
81. Nykaza, J.R.; Ye, Y.; Elabd, Y.A. Synthesis of Imidazolium-based Polymerized Ionic Liquid Diblock Copolymers. Gordon Research Conference – Polymers, South Hadley, MA, June 2013. *Poster Presentation*
82. Meek, K.M.; Elabd, Y.A. Chemical Stability of Imidazolium-based Block Copolymers as Anion Exchange Membranes. Gordon Research Conference – Polymers, South Hadley, MA, June 2013. *Poster Presentation*
83. Benjamin, R.R.; Nykaza, J.R.; Meek, K.M.; Ye, Y.; Elabd, Y.A. Development and Characterization of Solid State Polymer Electrolyte Membranes for Use in Alkaline Fuel Cells. National Conference on Undergraduate Research (NCUR), University of Wisconsin – La Crosse, La Crosse, Wisconsin, April 2013. *Poster Presentation*
84. Ye, Y.; Choi, J.; Wang, S.; Winey, K.I.; Elabd, Y.A. Hydroxide Conducting Polymerized Ionic Liquid Block Copolymers for Alkaline Fuel Cells. Annual Meeting of the American Institute of Chemical Engineers, Pittsburgh, PA October 2012. *Oral Presentation* **Invited Speaker**

85. Davis, E.M.; Elabd, Y.A. Non-Equilibrium Sorption and Anomalous Diffusion in Glassy Polymers. Annual Meeting of the American Institute of Chemical Engineers, Pittsburgh, PA October 2012. *Oral Presentation*
86. Kim, E.; Gordonov, T.; Liu, Y.; Elabd, Y.A.; Bentley, W.E.; Payne, G.F. Bio-based Redox-Capacitor to Intercede in Microbe-Electrode Electron Flow. Annual Meeting of the American Institute of Chemical Engineers, Pittsburgh, PA October 2012. *Oral Presentation*
87. Richey, F.W.; Dyatkin, B.; Gogotsi, Y.; Elabd, Y.A. Measuring Ion Transport in Energy Storage Devices Using In Situ Time-Resolved Infrared Spectroscopy. 222nd Electrochemical Society Meeting, Honolulu, HI, October 2012. *Oral Presentation*
88. Ye, Y.; Choi, J.; Wang, S.; Winey, K.I.; Elabd, Y.A. Ion Transport in Polymerized Ionic Liquid Block and Random Copolymers. World Polymer Congress, International Union of Pure and Applied Chemistry (IUPAC), Blacksburg, VA, June 2012. *Oral Presentation* **Invited Speaker**
89. Choi, J.; Ye, Y.; Green, M.D.; Elabd, Y.A.; Long, T.E.; Winey, K.I. Ion Conduction in Polymerized Ionic Liquid Thin Films. World Polymer Congress, International Union of Pure and Applied Chemistry (IUPAC), Blacksburg, VA, June 2012. *Oral Presentation*
90. Price, S.C.; Jackson, A.C.; Stokes, K.K.; Beyer, F.L.; Ye, Y.; Elabd, Y.A. Developing Ionomers with Controlled Morphologies for Anion Exchange Membranes. World Polymer Congress, International Union of Pure and Applied Chemistry (IUPAC), Blacksburg, VA, June 2012. *Oral Presentation*
91. Ye, Y.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Polymerized Ionic Liquids: Comparing Ion Transport-Morphology Relationships in Block and Random Copolymers. Spring National Meeting of the American Chemical Society, San Diego, CA, March 2012. *Oral Presentation*
92. Weber, R.L.; Ye, Y.; Schmitt, A.L.; Banik, S.M.; Elabd, Y.A.; Mahanthappa, M.K. Nanostructured Polymerized Ionic Liquid Block Copolymers. Spring National Meeting of the American Chemical Society, San Diego, CA, March 2012. *Oral Presentation*
93. Davis, E.M.; McDermott, M.K.; Benetatos, N.M.; Elabd, Y.A. Drug Delivery in Biodegradable Polymer Coatings used in Drug-Eluting Medical Devices: An Infrared Spectroscopic Investigation. Spring National Meeting of the American Chemical Society, San Diego, CA, March 2012. *Oral Presentation*
94. Richey, F.; Elabd, Y.A. Ion Dynamics in Solid-State Polymer Electrolyte Electrochemical Cells using in situ Time-Resolved Infrared Spectroscopy. American Physical Society Meeting, Boston, MA, March 2012. *Oral Presentation*
95. Choi, J.-H.; Ye, Y.; Green, M.D.; Elabd, Y.A.; Long, T.E.; Winey, K.I. Ion Conduction in Polymerized Ionic Liquid Thin Films. American Physical Society Meeting, Boston, MA, March 2012. *Oral Presentation*
96. Choi, U.-H.; Lee, M.; Mittal, A.; Ye, Y.; Elabd, Y.A.; Gibson, H.; Runt, J.; Colby, R. Ion Conduction and Dielectric Response of Imidazolium-Based Single-Ion Conductors. American Physical Society Meeting, Boston, MA, March 2012. *Oral Presentation*
97. Elabd, Y.A.; Ye, Y.; Choi, J.-H.; Winey, K.I. Ion Transport in Polymerized Ionic Liquid Block and Random Copolymers. American Physical Society Meeting, Boston, MA, March 2012. *Oral Presentation*
98. Davis, E.D.; Minelli, M.; Baschetti, M.B.; Sarti, G.C.; Elabd, Y.A. Non-Equilibrium Water-Glassy Polymer Dynamics. American Physical Society Meeting, Boston, MA, March 2012. *Oral Presentation*
99. Beyer, F.L.; Price, S.; Jackson, A.; Gold, C.; Ye, Y.; Elabd, Y.A. Synthesis and Physical Behavior of Model Polymer Electrolyte Membranes for Alkaline Fuel Cells. American Physical Society Meeting, Boston, MA, March 2012. *Poster Presentation*

100. Wang, T.-S.; Ye, Y.; Elabd, Y.A.; Winey, K.I. Effect of Water Uptake on Morphology of Polymerized Ionic Liquid Block Copolymers and Random Copolymers. American Physical Society Meeting, Boston, MA, March 2012. *Poster Presentation*
101. Davis, E.D.; Minelli, M.; Baschetti, M.G.; Sarti, G.C.; Elabd, Y.A. Non-Equilibrium Sorption and Diffusion of Water In Polylactide: Experiments and Model Predictions. Annual Meeting of the American Institute of Chemical Engineers, Minneapolis, MN, October 2011. *Oral Presentation*
102. Dong, B.; Chen, H.; Snyder, J.D.; Elabd, Y.A. Super Conductive Nafion Nanofibers: Discovery, Fabrication, Properties and Fuel Cell Performance. 220th Electrochemical Society Meeting, Boston, MA, October 2011. *Oral Presentation*
103. Choi, U.H.; Ye, Y.; Lee, M.; Mittal, A.; Gibson, H.W.; Elabd, Y.A. Runt, J.; Colby, R.H. Conductivity and Dielectric Behavior of Imidazolium-based Polymers: Structure-Property Relationships. 4th Congress on Ionic Liquids, Arlington, VA, June 2011. *Oral Presentation*
104. Ye, Y.; Mace, E.J.; Elabd, Y.A. Stable Hydroxide Anion Exchange Polymerized Ionic Liquid. Spring National Meeting of the American Chemical Society, Anaheim, CA, March 2011. *Oral Presentation* **Invited Speaker**
105. Choi, U.H.; Ye, Y.; Lee, M.; Mittal, A.; Gibson, H.W.; Elabd, Y.A. Runt, J.; Colby, R.H. Time Scales of Ion Transport in Imidazolium-based Polymers. American Physical Society Meeting, Dallas, TX, March 2011. *Oral Presentation*
106. Beyer, F.L.; Stokes, K.; Orlicki, J.; Ye, Y.; Elabd, Y.A. Morphology and Transport Properties of Phosphonium-containing Styrenic Ionomers with Random Charge Placement. American Physical Society (DPOLY) Meeting, Dallas, TX, March 2011. *Oral Presentation*
107. Elabd, Y.A. Transport Phenomena in Proton Exchange Membranes: A Molecular Perspective. Advanced in Materials for Proton Exchange Membrane Fuel Cells Systems Meeting, sponsored by The Division of Polymer Chemistry (POLY) of the American Chemical Society, Asilomar, CA, February 2011. *Oral Presentation* **Invited Speaker**
108. Richey, F.; Elabd, Y.A. Ion Transport in Ionic Polymer Actuators using In Situ Time-Resolved Infrared Spectroscopy. 220th Electrochemical Society Meeting, Boston, MA, October 2011. *Poster Presentation* **Received 1st Place Award**
109. Davis, E.M.; Minelli, M.; Baschetti, M.G.; Sarti, G.C.; Elabd, Y.A. Sorption and Diffusion of Water Vapor in Polylactide: Experiments and Model Predictions. Spring National Meeting of the American Chemical Society, Anaheim, CA, March 2011. *Poster Presentation* **Received Excellence in Polymer Graduate Research Symposium Award**
110. Hallinan, D.T., Jr.; Elabd, Y.A. Understanding Water Diffusion and Ion Conductivity in Polymer Electrolyte Membranes. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2010. *Oral Presentation*
111. Ye, Y.; Elabd, Y.A. Imidazolium-Based Polymerized Ionic Liquids for Solid Polymer Electrolytes: The Effect of Anion Type. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2010. *Oral Presentation*
112. Hallinan, D.T., Jr.; De Angelis, M.G.; Baschetti, M.G.; Jr.; Sarti, G.C.; Elabd, Y.A. Water Transport in Proton Exchange Membranes: Insights from Time-Resolved Infrared Spectroscopy. 218th Electrochemical Society Meeting, Las Vegas, NV, October 2010. *Oral Presentation* **Invited Speaker**
113. Davis, E.M.; Elabd, Y.A.; Winey, K.I.; Regnault, W.F.; Benetatos, N.M. New Characterization Techniques for Assessing the Structure and Water Transport of Parylene Coatings. Spring National Meeting of the American Chemical Society, San Francisco, CA, March 2010. *Oral Presentation*

114. Hallinan, D.T., Jr.; Elabd, Y.A. Real-Time Molecular Measurements of Water Dynamics in Nafion using Fourier-Transform Infrared, Attenuated Total Reflectance Spectroscopy. Spring National Meeting of the American Chemical Society, San Francisco, CA, March 2010. *Oral Presentation* **Invited Speaker**
115. Ye, Y.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ion Conduction in Polymerized Ionic Liquids: The Effect of Anion Type. Spring National Meeting of the American Chemical Society, San Francisco, CA, March 2010. *Oral Presentation* **Invited Speaker**
116. Choi, J.-H.; Gwee, L.; Elabd, Y.A.; Winey, K.I. Morphologies in Diblock Copolymer and Ionic Liquid Mixtures. American Physical Society Meeting, Portland, OR, March 2010. *Oral Presentation*
117. Ye, Y.; Elabd, Y.A. Ion Conduction in Polymers Derived From Ionic Liquids. Gordon Research Conference – Polymer Physics, South Hadley, MA, June 2010. *Poster Presentation*
118. Davis, E.M.; Regnault, W.F.; Benetatos, N.M.; Elabd, Y.A. Water Transport in Glassy Polymers: Diffusion-Relaxation Phenomena. Gordon Research Conference – Polymer Physics, South Hadley, MA, June 2010. *Poster Presentation*
119. Gwee, L.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Ionic Liquid-Polymer Solid-State Films: The Effect of Ionic Liquid Composition on Morphology and Ion Conduction. Spring National Meeting of the American Chemical Society, San Francisco, CA, March 2010. *Poster Presentation* **Received Excellence in Polymer Graduate Research Symposium Award**
120. Schaeffer, H.; Elabd, Y.A. Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell. Spring National Meeting of the American Chemical Society, San Francisco, CA, March 2010. *Poster Presentation*
121. Schaeffer, H.; Elabd, Y.A. Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell. Annual Meeting of the American Institute of Chemical Engineers, Nashville, TN, November 2009. *Oral Presentation*
122. Hallinan, D.T., Jr.; De Angelis, M.G.; Baschetti, M.G.; Jr.; Sarti, G.C.; Elabd, Y.A. Understanding Mechanisms of Non-Fickian Water Diffusion in Polymer Electrolyte Membranes. Annual Meeting of the American Institute of Chemical Engineers, Nashville, TN, November 2009. *Oral Presentation*
123. Chen, H.; Ye, Y.; Gwee, L.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Conduction in Polymerized Ionic Liquids. Polymers and Ionic Liquids Conference, Arlington, VA, September 2009. *Oral Presentation* **Invited Speaker**
124. Elabd, Y.A. Transport Phenomena in Polymer Electrolyte Membrane Fuel Cells. University of Pennsylvania Fuel Cell Symposium, Philadelphia, PA, September 2009. *Oral Presentation* **Invited Speaker**
125. Chen, H.; Gwee, L.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Conduction in Polymerized Ionic Liquids and Ionic Liquid-Polymer Mixtures. Spring National Meeting of the American Chemical Society, Salt Lake City, UT, March 2009. *Oral Presentation* **Invited Speaker**
126. Choi, J.-H.; Gwee, L.; Elabd, Y.A.; Winey, K.I. Morphology and Ion Transport in Mixtures of Polymers and Ionic Liquid. American Physical Society Meeting, Pittsburgh, PA, March 2009. *Oral Presentation*
127. Choi, U.H.; Chen, H.; Liu, W.; Elabd, Y.A.; Colby, R.H. Understanding Ion Transport in Polymerized Ionic Liquids using Dielectric Spectroscopy. American Physical Society Meeting, Pittsburgh, PA, March 2009. *Oral Presentation*
128. Davis, E.M.; Theryo, G.; Hillmyer, M.A.; Cairncross, R.A.; Elabd, Y.A. Liquid Water Transport in Polylactide Using Time-Resolved FTIR-ATR Spectroscopy, Annual Meeting of the American Institute of Chemical Engineers, Nashville, TN, November 2009. *Poster Presentation*

129. Ye, Y.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Conduction in Polymerized Ionic Liquids: The Effect of Anion Type. Polymers and Ionic Liquids Conference, Arlington, VA, September 2009. *Poster Presentation*
130. Gwee, L.; Choi, J.-H.; Winey, K.I.; Elabd, Y.A. Ionic Liquid-Block Copolymer Solid-State Films: The Effect of Ionic Liquid Composition on Ion Conduction and Morphology. Polymers and Ionic Liquids Conference, Arlington, VA, September 2009. *Poster Presentation*
131. Gwee, L.; Elabd, Y.A. In Situ Time-Resolved FTIR-ATR Spectroscopy Measurements of Polymer-Ionic Liquid Actuators Under an Applied Electric Field. Polymers and Ionic Liquids Conference, Arlington, VA, September 2009. *Poster Presentation*
132. Ye, Y.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Conduction in Polymerized Ionic Liquids: The Effect of Anion Type. University of Pennsylvania Fuel Cell Symposium, Philadelphia, PA, September 2009. *Poster Presentation*
133. Schaeffer, H.; Elabd, Y.A. Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell. University of Pennsylvania Fuel Cell Symposium, Philadelphia, PA, September 2009. *Poster Presentation*
134. Schaeffer, H.; Elabd, Y.A. Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell. 11th Grove Fuel Cell Symposium, London, England, September 2009. *Poster Presentation*
135. Hallinan, D.T., Jr.; De Angelis, M.G.; Giacinti Baschetti, M.; Sarti, G.C.; Elabd, Y.A. Non-Fickian Diffusion of Water in Nafion. Annual Meeting of the American Institute of Chemical Engineers, Philadelphia, PA, November 2008. *Oral Presentation*
136. Gwee, L.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Highly Conductive Ionic Liquid-Homopolymer Mixtures. Annual Meeting of the American Institute of Chemical Engineers, Philadelphia, PA, November 2008. *Oral Presentation*
137. Dever, D.; Cairncross, R.A.; Elabd, Y.A. Planar Model for the Cathode Layer for Polymer Electrolyte Fuel Cells. Annual Meeting of the American Institute of Chemical Engineers, Philadelphia, PA, November 2008. *Oral Presentation*
138. Chen, H.; Choi, J.-H.; Salas-de la Cruz, D.; Winey, K.I.; Elabd, Y.A. Ionic Liquid Polymers: The Effect of Copolymer Composition on Structure and Ion Conduction. Fall National Meeting of the American Chemical Society, Philadelphia, PA, August 2008. *Oral Presentation*
139. Schaeffer, H.; Elabd, Y.A. Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell. Annual Meeting of the American Institute of Chemical Engineers, Philadelphia, PA, November 2008. *Poster Presentation*
140. Throckmorton, J.A.; Hallinan, D.T., Jr.; Elabd, Y.A. Diffusion of Water and Methanol in Nafion: In Situ Infrared Experiments and Multicomponent Models. Annual Meeting of the American Institute of Chemical Engineers, Philadelphia, PA, November 2008. *Poster Presentation* **Received 2nd Place Award in the Materials Science and Engineering Poster Competition**
141. Chen, H.; Elabd, Y.A. Ionic Liquid Polymers: Electrospinning and Solution Properties. Fall National Meeting of the American Chemical Society, Philadelphia, PA, August 2008. *Poster Presentation*
142. Hallinan, D.T., Jr.; De Angelis, M.G.; Giacinti Baschetti, M.; Elabd, Y.A. Non-Fickian Diffusion of Water in Nafion. Gordon Research Conference – Polymer Physics, Newport, RI, July 2008. *Poster Presentation*
143. Chen, H.; Snyder, J.D.; Elabd, Y.A. Electrospinning Nafion® Nanofibers. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Oral Presentation*

144. Hallinan, D.T., Jr.; Elabd, Y.A. Water Transport in Nafion® Using Time-Resolved FTIR-ATR Spectroscopy. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Oral Presentation*
145. DeLuca, N.W.; Elabd Y.A. Effects of Membrane Preparation and Treatment on Transport Properties in Recast Nafion® Membranes. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Oral Presentation*
146. Rahmathullah, A.M.; Elabd Y.A.; Palmese, G.R. Design of Nanoporous, Proton-Conductive Polymer Thermosets. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Oral Presentation*
147. Schaeffer, H.; Chen, H.; Snyder, J.D.; Rahmathullah, A.M.; Palmese, G.R.; Elabd, Y.A. Electrosensitive Permeability of Polymer-Polymer Nanocomposite Membranes. Fall National Meeting of the American Chemical Society, Boston, MA, August 2007. *Oral Presentation*
148. Elabd, Y.A. Transport Phenomena in Polymer Electrolyte Membranes for the Direct Methanol Fuel Cell. NATO Advanced Study Institute on Mini-Micro Fuel Cells as Electric Energy Generators, Cesme, Izmir, Turkey, July 2007. *Oral Presentation* **Invited Speaker**
149. Hallinan, D.T., Jr.; Elabd, Y.A. Transport of Water in Nafion® using Time-Resolved FTIR-ATR Spectroscopy. Annual Meeting of the North American Membrane Society, Orlando, FL, May 2007. *Oral Presentation*
150. Elabd, Y.A. Methanol Crossover: New Insights and Experimental Techniques. Advanced in Materials for Proton Exchange Membrane Fuel Cells Systems Meeting, sponsored by The Division of Polymer Chemistry (POLY) of the American Chemical Society, Asilomar, CA, February 2007. *Oral Presentation* **Invited Speaker**
151. Gwee, L.; Elabd, Y.A. Highly Conductive Ionic Liquid-Polymer Membranes. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Poster Presentation*
152. Eirich, B.D.; Elabd, Y.A. Ion-Exchanged Carbon Supported Platinum Catalysts for Hydrogen Fuel Cells. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Poster Presentation*
153. Schaeffer, H.; Elabd Y.A. Transport in Polymer-Polymer Nanocomposite Membranes. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Poster Presentation*
154. Snyder, J.D.; Elabd Y.A. Nafion® Nanofibers and their Effect on Polymer Electrolyte Membrane Fuel Cell Performance. Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2007. *Poster Presentation* **Received 2nd Place Award in the Materials Science and Engineering Poster Competition**
155. DeLuca, N.W.; Elabd, Y.A. Blend Membranes with Sulfonated Poly(vinyl alcohol) for the Direct Methanol Fuel Cell. Annual Meeting of the North American Membrane Society, Orlando, RL, May 2007. *Poster Presentation* **Received Elias Klein Founders' Travel Award (\$500)**
156. Jeff-eke, D.; Hallinan D.T., Jr.; Elabd, Y.A. Nafion®/Clay Nanocomposites for Direct Methanol Fuel Cells (DMFCs): Preparation Techniques, Characterization, and Conductivity Analysis. 21st National Conference on Undergraduate Research (NCUR®), Dominican University of California, CA, April 2007. *Poster Presentation*
157. Hallinan, Jr., D.T.; Elabd, Y.A. Transport of Water in Nafion® using Time-Resolved FTIR-ATR Spectroscopy. Fuel Cells 2007 Meeting, sponsored by The Division of Polymer Chemistry (POLY) of the American Chemical Society, Asilomar, CA, February 2007. *Poster Presentation*
158. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Plasma-Radiation Enhanced Nanofiber-Thermoplastic Composites. Materials Research Society Fall Meeting, Boston, MA, November 2006. *Oral Presentation*

159. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Structure, Property and Cure Kinetics of Thermosetting Copolymers. Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2006. *Oral Presentation*
160. Hallinan, D.T., Jr.; Elabd, Y.A. Multicomponent Transport of Water and Methanol in Nafion®. Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2006. *Oral Presentation* **Received Schering-Plough Research Institute Travel Award (\$2,000)**
161. DeLuca, N.W.; Elabd, Y.A. Nafion® Blend Membranes for the Direct Methanol Fuel Cell. Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2006. *Oral Presentation*
162. Chen, H.; Palmese, G.R.; Elabd, Y.A. Membranes with Oriented Polyelectrolyte Nanodomains. Fall National Meeting of the American Chemical Society, San Francisco, CA, September 2006. *Oral Presentation*
163. Chen, H.; Palmese, G.R.; Elabd, Y.A. Membranes with Oriented Polyelectrolyte Nanodomains as Breathable Barriers for Protective Clothing. 25th Army Science Conference, Orlando, FL, November 2006. *Poster Presentation*
164. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Plasma-Radiation Enhanced Nanofiber-Thermoplastic Composites. Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2006. *Poster Presentation*
165. DeLuca, N.W.; Elabd, Y.A. Nafion®/Poly(vinyl alcohol) Blend Membranes for the Direct Methanol Fuel Cell. Annual Meeting of the North American Membrane Society, Chicago, IL, May 2006. *Poster Presentation*
166. Hallinan, D.T., Jr.; Elabd, Y.A. Multicomponent Transport of Water and Methanol in Nafion®. Annual Meeting of the North American Membrane Society, Chicago, IL, May 2006. *Poster Presentation* **Received NAMS Poster Award (\$500) and NAMS Annual Meeting Student Travel Award (\$1,000)**
167. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Multifunctional Nanoporous Thermosetting Copolymer Membranes: Synthesis and Characterization. Annual Meeting of the North American Membrane Society, Chicago, IL, May 2006. *Poster Presentation* **Received Elias Klein Founders' Travel Award (\$500)**
168. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Multifunctional Nanoporous Thermosetting Copolymers. American Chemical Society Local Section 6th Annual Poster Session, Villanova University, Philadelphia, PA, January 2006. *Poster Presentation* **Received the EssTech Polymers and Materials Science Award**
169. Hronec, C.; Elabd, Y.A. Catalyst Layer Network Formation in Polymer Electrolyte Membrane Fuel Cells. Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Oral Presentation*
170. Chen, H.; Palmese, G.R.; Elabd, Y.A. Polyester-Polyelectrolyte Nanocomposite Membranes as Breathable and Responsive Barriers. Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Oral Presentation*
171. DeLuca, N.W.; Elabd, Y.A. Nafion®/Poly(vinyl alcohol) Blends: Effects of Crosslinking Conditions on Transport Properties. Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Oral Presentation*
172. Raghav, S.; Elabd, Y.A. Polymer-Filled Nanoporous Membranes. Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Oral Presentation*
173. Soroush, M.; Elabd, Y.A. Control Configuration Selection for Fuel Cell Stack Systems, Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Oral Presentation*

174. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Synthesis and Characterization of Thermosetting Copolymers as PEMs. Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Oral Presentation*
175. Hronec, C.; Walker, C.W.; Elabd, Y.A. Catalyst Layer Network Formation and Its Effect on Fuel Cell Performance. Fall National Meeting of the American Chemical Society, Washington, DC, August 2005. *Oral Presentation*
176. Chen, H.; Palmese, G.R.; Elabd, Y.A. Polyester-Poly(methacrylic acid) Nanocomposite Membranes as Breathable Barriers. Fall National Meeting of the American Chemical Society, Washington, DC, August 2005. *Oral Presentation*
177. Wu, L-Q.; Ghodssi, R.; Elabd, Y.A.; Payne, G.F. Biomimetic Pattern Transfer from a Hard Material to a Soft Biomaterial. Fall National Meeting of the American Chemical Society, Washington, DC, August 2005. *Oral Presentation*
178. Chen, H.; Rahmathullah, A.M.; Hallinan, D.T., Jr.; Napadensky, E.; Palmese, G.R.; Elabd, Y.A. Polymer-Polymer Nanocomposite Membranes as Breathable and Responsive Barriers. 2005 Scientific Conference on Chemical and Biological Defense Research, Timonium, MD, November 2005. *Poster Presentation*
179. Hallinan, D.T., Jr.; Elabd, Y.A. Transport of Water in Nafion[®] using Time-Resolved FTIR-ATR Spectroscopy. Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, November 2005. *Poster Presentation*
180. Rahmathullah, A.M.; Elabd, Y.A.; Palmese, G.R. Multifunctional Nanoporous Thermosetting Copolymer Matrices. American Society of Composites Annual Meeting, Philadelphia, PA, September 2005. *Poster Presentation*
181. Rahmathullah, A.M.; Palmese, G.R.; Elabd, Y.A. Proton Conductive Nanoporous Thermosetting Copolymers, Fall National Meeting of the American Chemical Society, Washington, DC, August 2005. *Poster Presentation*
182. Soroush, M.; Elabd, Y.A. Process Systems Engineering Challenges in Fuel Cell Technology for Automobiles. Annual Meeting of the American Institute of Chemical Engineers, Austin, TX, November 2004. *Oral Presentation*
183. Elabd, Y.A.; Walker, C.W. Proton Conducting Block Copolymers and their Application to the Direct Methanol Fuel Cell. 41st Power Sources Conference, Philadelphia, PA, June 2004. *Oral Presentation*
184. Elabd, Y.A.; Napadensky, E.; Walker, C.W. Proton Conducting Block Copolymers: Sulfonation, Characterization and Application to the Direct Methanol Fuel Cell. Spring National Meeting of the American Chemical Society, Anaheim, CA, March 2004. *Oral Presentation* **Invited Speaker**
185. Sloan, J.M.; Napadensky, E.; Crawford D.M.; Elabd, Y.A. Nanostructured Polymer Membranes for Chemical Protective Clothing. 24th Army Science Conference, Orlando, FL, December 2004. *Poster Presentation*
186. Raghav, S.; Elabd, Y.A. Conductive Properties of Pore-Filled Track-Etched Membranes. Annual Meeting of the American Institute of Chemical Engineers, Austin, TX, November 2004. *Poster Presentation* **Received 2nd Place Award in the Materials Science and Engineering Poster Competition**
187. DeLuca, N.W.; Elabd, Y.A. Proton Conducting Homopolymer and Random Copolymer Blends Containing Poly(vinyl alcohol). Annual Meeting of the American Institute of Chemical Engineers, Austin, TX, November 2004. *Poster Presentation*
188. Napadensky, E.; Sloan, J.M.; Elabd, Y.A. Breathability and Selectivity of Selected Materials for Protective Clothing. Fall National Meeting of the American Chemical Society, Philadelphia, PA, August 2004. *Poster Presentation*

189. Elabd, Y.A.; Napadensky, E.; Sloan, J.M.; Crawford, D.M.; Walker, C.W. Transport Properties of Triblock Copolymer Ionomer Membranes for Fuel Cells. 23rd Army Science Conference, Orlando, FL, December 2002. *Oral Presentation*
190. Sloan, J.M.; Elabd, Y.A.; Napadensky, E. Sulfonated Block Copolymer Ionomers for Use in Direct Methanol Fuel Cells. Annual Technical Conference (ANTEC) of the Society of Plastics Engineers, San Francisco, CA, May 2002. *Poster Presentation*
191. Sloan, J.M.; Crawford D.M.; Elabd, Y.A.; Napadensky, E.; Zukas, W.X.; Kendrick, C. Mechanical Properties and Water Vapor Transport Properties of Sulfonated Block Copolymers. Spring National Meeting of the American Chemical Society, Orlando, FL, April 2002. *Poster Presentation*
192. Sloan, J.M.; Elabd, Y.A.; Napadensky, E. Monitoring Permeation Through Polymer Membranes by Continuous Flow FTIR-ATR with a Side-by-Side Diffusion Cell. The Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, New Orleans, LA, March 2002. *Poster Presentation*
193. Elabd, Y.A.; Sloan, J.M.; Napadensky, E.; Walker, C. Block Copolymer Ionomers as Solid Polymer Electrolyte Membranes for Application to the Direct Methanol Fuel Cell. Annual Meeting of the American Institute of Chemical Engineers, Reno, NV, November 2001. *Oral Presentation*
194. Elabd, Y.A.; Sloan, J.M.; Napadensky, E.; McKnight, S.M. Understanding Transport Mechanisms in Ionomer Membranes. Annual Meeting of the American Institute of Chemical Engineers, Reno, NV, November 2001. *Oral Presentation*
195. Elabd, Y.A.; Barbari, T.A. Understanding Multicomponent Transport in a Polymer Membrane for the Separation of Interacting Mixtures. Spring National Meeting of the American Chemical Society, San Diego, CA, April 2001. *Oral Presentation* **Invited Speaker**
196. Napadensky, E.; Sloan, J.M.; Elabd, Y.A. Solvent Diffusion in Polymers by FT-IR-ATR. Eastern Analytical Conference, Atlantic City, NJ, October 2001. *Poster Presentation*
197. Elabd, Y.A.; Sloan, J.M.; Napadensky, E.; Walker, C. Examination of Block Copolymer Ionomers as Solid Polymer Electrolyte Membranes. Annual Meeting of the North American Membrane Society, Lexington, KY, May 2001. *Poster Presentation*
198. Elabd, Y.A.; Barbari, T.A. Multicomponent Diffusion of Interacting Penetrants in a Polymer. Annual Meeting of the American Institute of Chemical Engineers, Los Angeles, CA, November 2000. *Oral Presentation*
199. Elabd, Y.A.; Barbari, T.A. Small Molecule Transport Mechanisms in Polymers: Insights from FTIR-ATR Spectroscopy. Third Joint China/USA Chemical Engineering Conference, Beijing, China, September 2000. *Oral Presentation*
200. Elabd, Y.A.; Sloan, J.M.; Beck Tan, N.; Barbari, T.A. Diffusion in a Phase-Segregated Polymer with Reversible Binding to Dispersed-Phase Surfaces. Annual Meeting of the American Institute of Chemical Engineers, Los Angeles, CA, November 2000. *Poster Presentation*
201. Elabd, Y.A.; Barbari, T.A. Multicomponent Diffusion of Interacting Penetrants in Polymer Membranes. Gordon Research Conference - Membranes: Materials and Processes, New London, CT, July 2000. *Poster Presentation*
202. Elabd, Y.A.; Barbari, T.A. Diffusion with Solvation in Homogeneous and Heterogeneous Polymeric Membranes. Annual Meeting of the North American Membrane Society, Boulder, CO, May 2000. *Poster Presentation*
203. Elabd, Y.A.; Barbari, T.A. Probing Complex Molecular Transport Mechanisms with FTIR-ATR Spectroscopy. Annual Meeting of the American Institute of Chemical Engineers, Dallas, TX, November 1999. *Oral Presentation*

204. Elabd, Y.A.; Barbari, T.A. Understanding the Role of Penetrant-Polymer Solvation on Small Molecule Diffusion. Annual Meeting of the American Institute of Chemical Engineers, Dallas, TX, November 1999. *Oral Presentation*
205. Elabd, Y.A.; Barbari, T.A. Diffusion of Acetic Acid in Polyisobutylene: Probing Small Molecule Structures. Annual Meeting of the American Institute of Chemical Engineers, Dallas, TX, November 1999. *Oral Presentation*
206. Elabd, Y.A.; Barbari, T.A. Effect of Penetrant-Polymer Hydrogen Bonding on the Transport Process. The Johns Hopkins University Annual Chemical Engineering Symposium, Baltimore, MD, December 1999. *Poster Presentation*
207. Elabd, Y.A.; Barbari, T.A. Probing Complex Molecular Transport Mechanisms Through Polymeric Membranes with FTIR-ATR Spectroscopy. The Johns Hopkins Annual Chemical Engineering Symposium, Baltimore, MD, December 1998. *Oral Presentation*
208. Elabd, Y.A.; Barbari, T.A.; Sloan, J.M. Diffusion as a Morphological Probe in Polyurethane Elastomers. Annual Meeting of the American Institute of Chemical Engineers, Miami Beach, FL, November 1998. *Oral Presentation*
209. Hong, S.U.; Elabd, Y.A.; Barbari, T.A. Multicomponent Diffusion of a Vapor Mixture in a Polymeric Film from Sorption Kinetics: Spectroscopic Measurements and the Conditions for a Pseudo-Binary Analysis. Annual Meeting of the American Institute of Chemical Engineers, Los Angeles, CA, November 1997. *Oral Presentation*
210. Elabd, Y.A.; Hong, S.U.; Barbari, T.A. Multicomponent Diffusion Measurements in Polymeric Membranes Using FTIR-ATR Spectroscopy. Annual Meeting of the North American Membrane Society, Baltimore, MD, June 1997. *Poster Presentation*
211. Payne, G.F.; Lenhart, J.L.; Elabd, Y.A. Tyrosinase-Reaction Coupled to Chitosan Adsorption for Separations and Polymer Modifications. Spring National Meeting of the American Chemical Society, New Orleans, LA, March 1996. *Oral Presentation*
212. Payne, G.F.; Elabd, Y.A.; Lenhart, J.L.; Rameriz, D.M. Enzymatic Modification of Chitosan by Tyrosinase. Spring National Meeting of the American Chemical Society, New Orleans, LA, March 1996. *Oral Presentation*
213. Bush, K.D.; Madurawe, R.D.; Elabd, Y.A.; Lumpkin, J.A. Qualitative Analysis of Structural Damage to LDH in Metal Affinity Systems. Spring National Meeting of the American Chemical Society, New Orleans, LA, March 1996. *Oral Presentation*

RESEARCH ASSISTANT PROFESSOR ADVISEES

1. Rui Sun - current
2. Y. Ye (FDA)
3. Hong Chen

POSTDOCTORAL SCHOLAR ADVISEES

4. Haoru Yang - current
5. Chandan Giri - current
6. Rui Sun (Texas A&M University)
7. Monica Hwang (Cal Tech)
8. John Collins (IBM)
9. X. Wang (Plains Mainstream Canada)
10. Y. Ye (FDA)
11. Bin Dong (Soochow Univ.)
12. Hong Chen

PHD STUDENT ADVISEES

1. Kevin Nixon, Ph.D. 2023 (Postdoc @ Univ. Delaware)
2. Dohyun Kim, Ph.D. 2023

3. Yifei Yang, Ph.D. 2022 (Lam Research)
4. Patrick Lathrop, Ph.D. 2021 (Franklin International)
5. Rui Sun, Ph.D. 2020 (Texas A&M Univ.)
6. Tzu-Ling Chen, Ph.D. 2020 (Rivian)
7. Monica Hwang, Ph.D. 2019 (Postdoc @ Cal Tech)
8. Melissa C. Santos, Ph.D. 2017 (Finnegan, Henderson, Farabow, Garrett & Dunner, LLP; J.D. @ Univ. Mich.)
9. Kelly M. Meek, Ph.D. 2016 (Asst. Prof. @ Univ. Ottawa; Postdocs @ ORNL & NREL)
10. Jacob R. Nykaza, Ph.D. 2016 (Saft)
11. Francis W. Richey, Ph.D. 2014 (Eos Energy Enterprises, Inc.; Postdoc @ Stanford)
12. Eric M. Davis, Ph.D. 2013 (Assoc. Prof. @ Clemson Univ.; Postdoc @ NIST, NRC Postdoc Fellow)
13. Dennis O. Dever, Ph.D. 2013 (Armstrong Engineering)
14. Holly L.S. Salerno, Ph.D. 2011 (DuPont)
15. Liang Gwee, Ph.D. 2010 (Eastman Chemical)
16. Daniel T. Hallinan, Jr., Ph.D. 2009 (Assoc. Prof. @ Florida St. Univ.; Postdoc @ UC Berkeley)
17. Aflal M. Rahmathullah, Ph.D. 2008 (Donaldson)
18. Nicholas W. DeLuca, Ph.D. 2008 (Lubrizol)

MS STUDENT ADVISEES

1. Mahesh Agrawal
2. Akshaya Kulkarni
3. Arthur Kleiderer
4. Rui Sun
5. Tzu-Ling Chen
6. Ana Pillado
7. Eric Mace
8. Shane Kenney
9. Daniel M. Shay
10. Benjamin D. Eirich
11. Joshua D. Snyder (Assoc. Prof. @ Drexel Univ.; Ph.D. Johns Hopkins)
12. Tamika Avery
13. Damilola O. Okojie
14. Christine Hronec
15. Sunil Raghav

UNDERGRADUATE STUDENT ADVISEES

1. N. Mara
2. S. Musso
3. S. Beaumariage
4. M. Doan (Solvay)
5. M. Courtney
6. J. Daddario
7. D. Walker
8. T. Kubbar
9. M. Karenson
10. Y. Shi
11. B. Alexander
12. N. Glandon
13. M. Moerbe
14. R. Nelson
15. R. Benjamin
16. S. Hausler
17. K. Mattson
18. R. Ventura
19. U. Amira
20. M. Torelli

21. K. Padagaonkar
22. T. Ahmed
23. I. Ahmed (Merck)
24. K. Wujcik (Blue Current; Ph.D. @ UC Berkeley)
25. C. Bower
26. C. Anyigbo
27. D. Mattson
28. K. Gold
29. C.-H. Lim (New Iridium Inc; Ph.D. @ Univ. Colorado at Boulder)
30. S. Kenney
31. D.M. Shay
32. B.D. Eirich
33. J.D. Snyder (Assoc. Prof. @ Drexel Univ.; Ph.D. @ Johns Hopkins)
34. D.A. Wunderlich
35. S.R. Young
36. H. Ghebremichael (Dow Chemical)
37. M. Miller
38. B.N. Sirin
39. J. Atchison
40. D.O. Okojie
41. C. Hronec

NSF-REU STUDENT ADVISEES

1. S. Gunnels
2. N. Wallace
3. K. Ware
4. D. Jeff-eke
5. A. Backmann

HIGH SCHOOL STUDENT ADVISEES

1. S. Jayaraman
2. J. Dudo

PHD DISSERTATIONS

1. Nixon, K. Ph.D. Dissertation, Poly(ionic liquid) Star Polymers and Block Copolymers, May 2023.
2. Kim, D. Ph.D. Dissertation, Nanostructured Electrodes for Hydrogen Fuel Cells and Nanostructured Electrolytes for Lithium Metal Batteries: Impact of Nanostructure on Performance, May 2023.
3. Yang, Y. Ph.D. Dissertation, Fuel Cells and Reverse Fuel Cells: Nanostructured Patterned Electrodes and Membranes, May 2022.
4. Lathrop, P.M. Ph.D. Dissertation, Poly(Ionic Liquid) ABC Triblock Terpolymers: Targeted Synthesis and 3D Network Morphologies, August 2021.
5. Sun, R. M. Ph.D. Dissertation, Hydroxide Conducting and Proton Conducting Poly(ionic liquids), Texas A&M University, August 2020.
6. Chen, T.-L. Ph.D. Dissertation, Poly(ionic liquid) Block Copolymers as Solid Polymer Electrolytes for Lithium Ion Batteries, Texas A&M University, August 2020.
7. Hwang, M. Ph.D. Dissertation, Ultra-Low Platinum and Platinum-Free Fuel Cells, Texas A&M University, May 2019.
8. Santos, M.C. Ph.D. Dissertation, Liquid Water Transport in Polymer Films and Membranes, Texas A&M University, May 2017.
9. Meek, K.M. Ph.D. Dissertation, Alkaline Chemical Stability and Ion Transport in Polymerized Ionic Liquid Anion Exchange Membranes, Texas A&M University, May 2016.
10. Nykaza, J.R. Ph.D. Dissertation, Imidazolium-Based Block Copolymers as Solid-State Separators for Alkaline Fuel Cells and Lithium Ion Batteries, Drexel University, April 2016.
11. Richey, F.W. Ph.D. Dissertation, Ion Dynamics in Electrochemical Capacitors Using Infrared Spectroelectrochemistry, Drexel University, April 2014.

12. Davis, E.M. Ph.D. Dissertation, Water Sorption and Diffusion in Glassy Polymers, Drexel University, May 2013.
13. Dever, D.O. Ph.D. Dissertation, Nanofiber, Ideal Fiber, and Planar Cathode Catalyst Layer Models for the Proton Exchange Membrane Fuel Cell, Drexel University, May 2013.
14. Salerno, H.L.S. Ph.D. Dissertation, Anion Exchange Membranes Derived from the Nafion Precursor for the Alkaline Fuel Cell, Drexel University, December 2011.
15. Gwee, L. Ph.D. Dissertation, Ion Transport in Polymer/Ionic Liquid Films, June 2010.
16. Hallinan, Jr., D.T. Ph.D. Dissertation, Transport in Polymer Electrolyte Membranes Using Time-Resolved FTIR-ATR Spectroscopy, Drexel University, June 2009.
17. Rahmathullah, A.M. Ph.D. Dissertation, Multifunctional Polymers by Incorporating Ionic Groups at Molecular and Mesoscopic Length Scales, Drexel University, March 2008.
18. DeLuca, N.W. Ph.D. Dissertation, Polymer Electrolyte Blend Membranes for the Direct Methanol Fuel Cell, Drexel University, February 2008.

MS THESES

1. Agrawal, M. M.S. Thesis, Synthesis of Triblock Terpolymer Poly(styrene-b-vinylbenzyl methylpyrrolidinium chloride-b-octylstyrene) using Reverse Addition Fragmentation Chain Transfer Polymerization, Texas A&M University, May 2020.
2. Kleiderer, A. M.S. Thesis, Electrospun/Electrosprayed Aligned Fuel Cell Electrodes, Texas A&M University, August 2017.
3. Sun, R. M.S. Thesis, Polymerized Ionic Liquid Derived Carbon, Texas A&M University, August 2016.
4. Chen, T.-L. M.S. Thesis, Hybrid Capacitor with Polyaniline/Carbon Electrodes, Texas A&M University, August 2016.
5. Mace, E. M.S. Thesis, Transport in Fuel Cell Ion Exchange Membranes: Molecular Mechanisms and Mathematical Modeling, Drexel University, December 2011.
6. Shay, D.M. M.S. Thesis, Ion-Exchanged Carbide Derived Carbon-Supported Platinum Catalysts for Fuel Cells, Drexel University, August 2008.
7. Eirich, B.D. M.S. Thesis, Ion-Exchanged Carbon Supported Platinum Catalysts for Fuel Cells, Drexel University, August 2007. **Received Drexel University Most Outstanding Masters Award**
8. Snyder, J.D. M.S. Thesis, Nafion Nanofibers and their Effect on Polymer Electrolyte Membrane Fuel Cell Performance, Drexel University, August 2006.
9. Hronec, C. M.S. Thesis, Catalyst Layer Network Formation in Polymer Electrolyte Membrane Fuel Cells, Drexel University, June 2005.
10. Raghav, S. M.S. Thesis, Polymer-Filled Nanoporous Membranes, Drexel University, June 2005.

GRADUATE/UNDERGRADUATE STUDENT RESEARCH AWARDS

1. Kevin Nixon – ACS POLY Outstanding Poster Award @ 2023 ACS Spring Meeting, Excellence in Graduate Polymer Research Award @ 2023 ACS Spring Meeting, 1st Place Award at DuPont GOLD Graduate Seminar Competition @ 2022 NOBCCChE National Conference, 2022 Texas A&M University College of Engineering Graduate Teaching Fellowship, Best Poster Award @ 2022 Polymer Technology Industrial Consortium (2nd place), 2022 CIRTLL Academy of Future Faculty Associate Fellow, 2019 NSF Graduate Research Fellowship (Honorable Mention), Technical Presentation Award @ 2018 GEM Annual Conference (1st Place), 2018 Texas A&M University College of Engineering Graduate Merit Fellowship, 2018 National GEM Consortium Ph.D. Fellowship
2. Dohyun Kim - Phillips 66 Technical Fellowship (top Ph.D. student in Chem. Eng. at Texas A&M), 2022
3. Rui Sun – Excellence in Graduate Student Research Symposium @ 2020 AIChE Annual Meeting (3rd place), Excellence in Graduate Polymer Research Symposium Finalist @ 2020 ACS National Meeting, Best Oral Presentation, ChEGSA Annual Research Symposium, 2020, Phillips 66 Technical Fellowship (top Ph.D. student in Chem. Eng. at Texas A&M), 2019, KANEKA Scholarship, Texas A&M University, 2019
4. Tzu-Ling Chen – 2019 Brunner Barns Fellowship
5. Patrick Lathrop – 2018 Phillips 66 Fellowship
6. Kelly Meek – 2017 DSM Science & Technology Award Finalist @2017 Fall ACS National Meeting; 2nd Place Award in Excellence in Graduate Polymer Research Session @2016 AIChE National Meeting; 2015 Phillips 66 Fellowship
7. Rishon Benjamin – 2013 Goldwater Scholarship; 2014 AIChE Poster Award (3rd Place) in the Materials Science and Engineering Section
8. Francis Richey – William A. Casey Fellowship; 2013 ECS Student Travel Award; Leroy Dresser Fellow; 2011 ECS Poster Award (1st Place)

9. Erich Mace – NSF-IGERT Fellow, 2010-2011
10. Eric M. Davis – George Hill Jr. Fellow; 2012 Meeting of the Noble Laureates Lindau Award; 2011 ACS Excellence in Polymer Graduate Research Symposium; FDA Biomedical Devices Fellow
11. Ishtiaque Ahmed - 2012 NSF Graduate Research Fellowship
12. Liang Gwee - 2010 ACS Excellence in Polymer Graduate Research Symposium
13. James Throckmorton - Koerner Family Fellow; 2008 AIChE Poster Award (2nd Place) in the Materials Science and Engineering Section
14. Daniel T. Hallinan Jr. - George Hill Jr. Fellow, DoEd-GAANN Fellow; Drexel University Graduate Student Research Excellence Award; NSF-IGERT Fellow; Schering-Plough Research Institute Travel Award; North American Membrane Society Poster Award; North American Membrane Society Annual Meeting Student Travel Award; University Teaching Assistance Excellence Award
15. Nicholas W. DeLuca - DoEd GAANN Fellow; Koerner Family Fellow; North American Membrane Society Elias Klein Founders' Travel Award
16. Aflal M. Rahmathullah - American Society for Composites PhD Research Award; University Graduate Student Research Excellence Award; Department Outstanding Graduate Student Research Award; SAMPE Student Symposium Award (3rd place); North American Membrane Society Elias Klein Founders' Travel Award; American Chemical Society Esstech Polymers and Materials Science Graduate Student Poster Award; American Society for Composites Poster Award (honorable mention)
17. Joshua D. Snyder - 2007 AIChE Poster Award (2nd Place) in the Materials Science and Engineering Section
18. Benjamin D. Eirich - 2007 Drexel University Most Outstanding Masters Award
19. Tamika Avery - NSF Bridges to Doctorate Fellow
20. Sunil Raghav - 2004 AIChE Poster Award (2nd Place) in the Materials Science and Engineering Section

TEACHING

COURSES TAUGHT

@ Texas A&M University

Junior Courses

CHEN 323: Chemical Engineering Heat Transfer (F15, F16)

CHEN 324: Chemical Engineering Mass Transfer Operations (S15, S16, F17, S18, F18, S19)

ENGR 385: Co-op (Su16, F16, S17, Su17, F17, S18, Su18, F18)

Senior Courses

CHEN 469: Chemical Engineering Car Design (S16, F16, S17, F17)

CHEN 489: Zymology (F17)

Graduate Courses

CHEN 629: Transport Phenomena (F14, S17, S21)

New Course Development

CHEN 489: Zymology (new undergraduate elective course)

@ Drexel University

Freshmen Courses

ENGR 101: Engineering Design Lab I (F06, F08)

ENGR 102: Engineering Design Lab II (W07, W09)

ENGR 103: Engineering Design Lab III (S07)

Sophomore Courses

CHE 206: Basic Thermodynamics (Su08, Su13)

Junior Courses

CHE 301: Process Thermodynamics (S10, F12, F13, S14)

CHE 303: Process Heat Transfer (F03, S04, F04, S05, F05, S06)

Senior Courses

CHE 424: Kinetics and Reactor Design (F06, F07, F08)

Graduate Courses

CHE 525: Transport Phenomena I (W05, W06, W07, W08, W09, W10, W11, W12, W13, W14)

CHE 800: Polymer Physics III (S09)

CHE 626: Transport Phenomena II (S11, S12)

New Course Development

CHE 301 - Process Thermodynamics (major revision to core undergraduate course)
CHE 800 - Polymer Physics Laboratory (new graduate course)
CHE 206 - Basic Thermodynamics (major revision to core undergraduate course)
CHE 303 - Process Heat Transfer (major revision to core undergraduate course)
CHE 424 - Kinetics and Reactor Design (major revision to core undergraduate course)
CHE 525 - Transport Phenomena I (major revisions to core graduate course)
CHE 626 - Transport Phenomena II (new graduate course)

PROFESSIONAL SERVICE

PROFESSIONAL AFFILIATIONS

American Institute of Chemical Engineers (AIChE), member since 1994
American Chemical Society (ACS), member since 1997
North American Membrane Society (NAMS), member since 2000
American Physical Society (APS), member since 2011
Electrochemical Society (ECS), member since 2013

EDITORIAL ADVISORY BOARD

1. *Macromolecules*, 2015-2017
2. *ACS Macro Letters*, 2015-2017

GUEST EDITOR

1. *Macromolecular Rapid Communications*, 2016, Special Issue on **Ionic Liquids in Polymer Design**, Issue Edited by Timothy E. Long, Yossef A. Elabd, Jiayin Yuan
2. *RCS Advances*, 2015, Special Issue on **Polymers for Electrochemical Energy Storage**, Issue Edited by Yossef A. Elabd and Jodie L. Lutkenhaus
3. *Journal of Polymer Science Part B: Polymer Physics*, Volume 44, Issue 16 (15 August 2006); Special Issue on **Polymers in Fuel Cells**. Issue Edited by Yossef A. Elabd.

SOCIETY OFFICER

1. **Chair**, AIChE Division 8; Materials Science & Engineering Division (MESD), 2018
2. Past Chair, AIChE MESD, 2019
3. 1st Vice Chair, AIChE MESD, 2017
4. 2nd Vice Chair, AIChE MESD, 2016

CONFERENCE/SESSION ORGANIZATION

1. Division Organizer - Organized AIChE MESD program for 2017 AIChE National Meeting in Minneapolis, MN.
2. Symposium Organizer and Chair – “Ionic Liquids in Polymer Design: From Energy to Health,” American Chemical Society National Meeting, Boston, MA, August 2015. **Awarded \$5,000 from the Army Research Office for travel assistance for invited speakers**
3. Session Organizer and Chair – “Focus Session: Polymers in Batteries and Electrochemical Capacitors,” American Physical Society, San Antonio, TX, March 2015.
4. Conference Organizer and Chair – “Polymers and Ionic Liquids: From Synthesis to Performance,” Washington, DC, October 2009. **Awarded \$10,000 from the Army Research Office for travel assistance for invited speakers**
5. Symposium Organizer and Chair – “Symposium on Materials for New Security and Defense Applications,” Materials Research Society Fall Meeting, Boston, MA, November 2007. **Awarded \$5,000 from the Army Research Office for travel assistance for invited speakers**
6. Session Organizer – “Polyelectrolytes and Ion-Containing Polymers,” American Physical Society, March 2004.

CONFERENCE/SESSION CHAIR

ca. 2/yr; > 5 Societies/National Meetings

JOURNAL REVIEWS

ca. 25/yr; > 50 Journals

PROPOSAL REVIEWS

ca. 15/yr; > 10 Funding Agencies

BOOK PROPOSAL REVIEWS

1. Oxford University Press: *Analysis of Transport Phenomena*, 2nd Edition
2. Wiley: *Vibrational Spectroscopy of Polymers and Rubbers*

EXPERT WITNESS

1. Baker Marquart LLP, 2015-2016

***Certified by the general counsel or other appropriate attorney as confidential or information that may be withheld from public disclosure in accordance with Section 551.1281 and Chapter 552 of the Texas Government Code.**

PLACEHOLDER

This Item has not been finalized