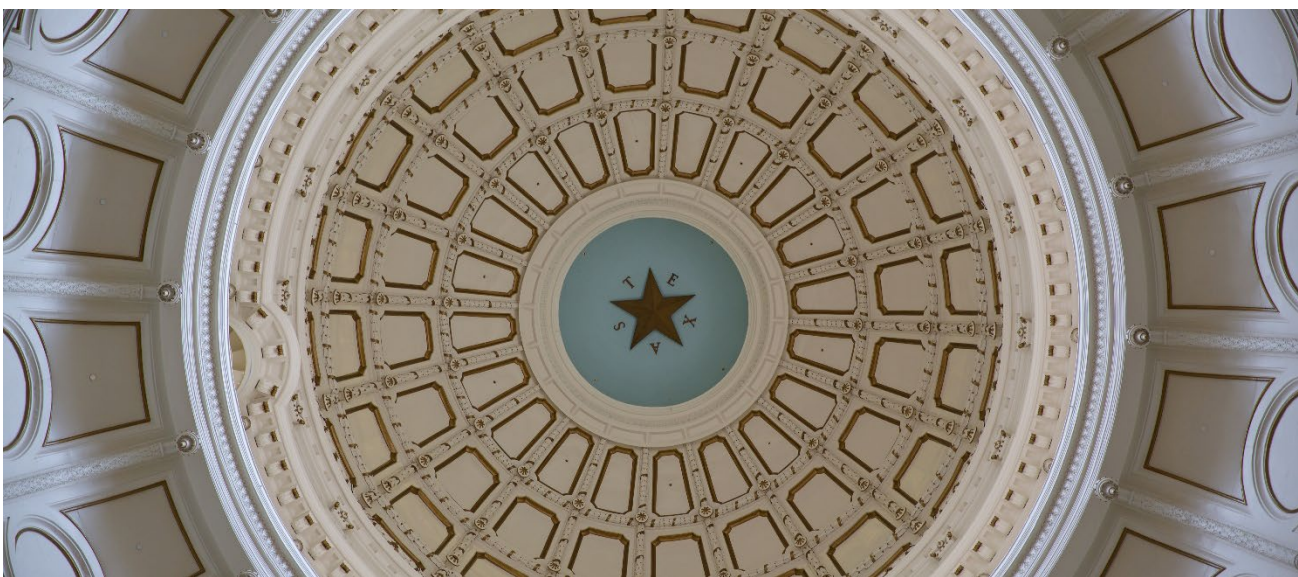




FY2023 Internal Audit Annual Report



Katie Linczer, CIA, CPA, CRMA

December 7, 2023



FY2023 Internal Audit Annual Report

The Internal Audit Annual Report provides information on the audit plan, assurance, consulting, and advisory projects completed, and other Internal Audit activities in fiscal year 2023. It meets the annual reporting requirement of the Texas Internal Auditing Act (Texas Government Code, Chapter 2102.009 and Texas Government Code, Sections 2102.015 and 2102.0091).

This report follows the State Auditor's Office reporting guidelines and includes the following:

- I. Compliance With Texas Government Code, Section 2102.015: Posting the Internal Audit Plan, Internal Audit Annual Report, and Other Audit Information on Internet Website
- II. Internal Audit Plan for Fiscal Year 2023
- III. Consulting and Nonaudit Services Completed
- IV. External Quality Assurance Review (Peer Review)
- V. Internal Audit Plan for Fiscal Year 2024
- VI. External Audit Services Procured in Fiscal Year 2023
- VII. Reporting Suspected Fraud and Abuse



Questions

Internal Audit Annual Report

Fiscal Year 2023

November 2023



Teacher Retirement System of Texas
1000 Red River Street, Austin, Texas 78701-2698

TEACHER RETIREMENT SYSTEM OF TEXAS

BOARD AUDIT, COMPLIANCE & ETHICS COMMITTEE

(As of October 1, 2023)

Robert H. Walls, Jr, Chair
Brittney Allred
Michael Ball
Nanette Sissney
Elvis Williams

BOARD MEMBERS

(As of October 1, 2023)

Jarvis V. Hollingsworth, Chair
Nanette Sissney, Vice Chair
Brittney Allred
Michael Ball
David Corpus
John Elliott
James D. Nance
Robert H. Walls
Elvis Williams

EXECUTIVE DIRECTOR

Brian Guthrie

INTERNAL AUDIT DEPARTMENT

(As of October 1, 2023)

Amanda Jenami, CPA, CISA, CIA, CIDA, CFSA, CFE, CRMA, CGAP, CCSA, Chief Audit Executive
Jonathan O'Reilly, Business Intelligence Director
Stephen Randall, CISA, IT Audit Director
Julie Toler, CFA, CFP®, CIA, CRMA, Investment Audit Director
Tammie Wells, CIA, CFE, Director – Operations Audit Director
Brian Browder, CISSP, Senior IT Auditor
Teklehaimanot Derseh, Senior Business Intelligence Analyst
Syed Israr, Senior Investment Auditor
Olga Jerman, Senior Business Intelligence Analyst
Katie Linczer, CPA, CIA, CRMA, Senior Investment Auditor
Sharon Riley, Senior Business Intelligence Analyst
Cui Rye, CPA, Senior Internal Auditor
Falguni Sampat, CQPA, Internal Auditor
Nathan Ward, Senior Investment Auditor
Rebecca Warnick, CIA, Audit Project Manager
Lisa Wei, CISSP, CISA, CISM, CSSLP, CHFI, GCFE, EnCE, Senior Cybersecurity Auditor
Karen Marino, Internal Audit Executive Assistant



Brian K. Guthrie
Executive Director

800.223.8778
512.542.6400
www.trs.texas.gov

1000 Red River Street
Austin, Texas 78701

Amanda Jenami,
CIA, CISA, CPA, CFE
Chief Audit Executive

November 1, 2023

Honorable Greg Abbott, Governor
Members of the Legislative Budget Board
Ms. Lisa R. Collier, CPA, State Auditor
Mr. Jarvis V. Hollingsworth, Chair, TRS Board of Trustees
Mr. Robert H. Walls, Jr., Chair, TRS Board Audit, Compliance, and Ethics Committee
Members of the Board of Trustees, Teacher Retirement System of Texas
Mr. Brian Guthrie, Executive Director, TRS

Attached is the annual report of the Internal Audit department of the Teacher Retirement System of Texas (TRS). This report provides information on the audit plan, assurance, consulting, and advisory projects completed, and other Internal Audit activities. It also meets the annual reporting requirements of the Texas Internal Auditing Act (Texas Government Code, Chapter 2102.009 and Texas Government Code, Sections 2102.015 and 2102.0091). This report includes the following State Auditor's Office reporting guidelines:

- I. Compliance with Texas Government Code, Section 2102.015: Posting the Internal Audit Plan and Internal Audit Annual Report on Internet website
- II. Internal Audit Plan for Fiscal Year 2023
- III. Consulting Services and Non-audit Services Completed
- IV. External Quality Assurance Review (Peer Review)
- V. Internal Audit Plan for Fiscal Year 2024
- VI. External Audit Services Procured in Fiscal Year 2023
- VII. Reporting Suspected Fraud and Abuse

The work performed by TRS Internal Audit contributes toward accountability, integrity, and good management practices within TRS operations. Fiscal year 2023 projects contributed to the improvement of risk management, control, and governance processes. Internal Audit (and those engaged by Internal Audit) issued 11 assurance reports, followed up and reported quarterly on the status of outstanding audit recommendations, and performed advisory services in various areas including TEAM (TRS Enterprise Application Modernization) Program initiatives.

For further information about the contents of this report or to request copies of Internal Audit reports, please contact Amanda Jenami at (512) 542-6124.

Sincerely,

Amanda Jenami, CPA, CIA, CISA, CIDA, CHIAP, CFE, CRMA, CGAP, CCSA
Chief Audit Executive

**TEACHER RETIREMENT
SYSTEM OF TEXAS
INTERNAL AUDIT ANNUAL
REPORT**

FISCAL YEAR 2023

November 2023



I. Compliance with Texas Government Code, Section 2102.015:
Posting the Internal Audit Plan, Internal Audit Annual
Report, and Other Audit Information on Agency Internet
Website

I. Compliance with Texas Government Code, Section 2102.015: Posting the Internal Audit Plan, Internal Audit Annual Report, and Other Audit information on Internet Website

Texas Government Code, Section 2102.015 requires state agencies and institutions of higher education, as defined in the statute, to post agency internal audit plans and internal audit annual reports on the agency's internet website within 30 days of approval. The statute also requires entities to update the posting on the Internet to include a.) a detailed summary of the weaknesses, deficiencies, wrongdoings, or other concerns raised by the audit plan or annual report and b.) a summary of the actions taken to address concerns, if any, that are raised by the audit plan or annual report.

TRS Internal Audit follows the following procedures to ensure compliance with the requirements of Texas Government Code, Section 2102.015:

- ▶ The **TRS Annual Internal Audit Plan** is approved each fiscal year by the TRS Board of Trustees as recommended by the TRS Audit, Compliance and Ethics Committee. The annual audit plan, as approved by the TRS Board of Trustees, is provided to the TRS website coordinators and posted on the TRS website within 30 days of approval.
- ▶ The **TRS Internal Audit Annual Report** is prepared annually by Internal Audit staff in accordance with the Texas State Auditor's Office guidelines by the deadline i.e., November 1 of each year. This report is submitted to the Governor's Office, the Legislative Budget Board, the State Auditor's Office and the TRS Board of Trustees by November 1 of each year. The annual report is presented to the TRS Audit, Compliance and Ethics Committee at its December meeting, and provided to the TRS Website coordinators to post to the TRS website within 30 days of the meeting.
- ▶ **Summaries of the weaknesses, concerns, and actions taken to address concerns** in the audit plan or annual report are provided by Internal Audit in the quarterly TRS Audit, Compliance and Ethics Committee materials. The committee materials provide audit reports completed during each quarter, quarterly status reports of management action on outstanding audit recommendations, and the status of the current fiscal year audit plan. The individual audit reports provide the results, recommendations, and management actions planned to address the audit recommendations. The TRS Audit, Compliance and Ethics Committee materials are posted to the TRS website, after dissemination to TRS Board of Trustees, and prior to the scheduled Board meeting.

II. Internal Audit Plan for Fiscal Year 2023

Fiscal Year 2023 Audit Plan Status As of October 2023

Title (Project Number)	Type	Status	Report Date
Executive			
Follow-up Review of HUB Program (23-402)	Audit	Complete	September 2023
Follow-up Review of IT Contract Oversight (23- 402)	Audit	Complete	September 2023
Special Requests and Emerging Issues	Advisory or Consultancy	Complete	n/a
Meetings Participation	Advisory or Consultancy	Complete	n/a
Finance and Staff Services			
Annual Comprehensive Financial Report (ACFR) Testing of Annuity Payments	Audit	Complete	November 2022
TEAM Program			
TEAM Testing and Reconciliation; Committee Meeting Attendance	Advisory	Complete	n/a
TEAM Independent Program Assessment (IPA) Vendor Support	Advisory	Complete	n/a
Pension Benefits and Employer Audits			
Reporting Employer Processes (23-102)	Audit	Complete	July 2023
Employer Data Analysis and Testing	Consultancy	Complete	n/a
Health Care			
Review of Eligibility (23- 201)	Audit	Complete	April 2023
Healthcare Claims Data Analysis	Audit	Complete	n/a
Healthcare Claims Data Analysis	Audit	Complete	n/a
Healthcare Claims Data Analysis	Audit	Complete	n/a
HILOB Data Analysis	Advisory	Complete	n/a

Teacher Retirement System of Texas
Internal Audit Annual Report for Fiscal Year 2023

Title	Type	Status	Report Date
Investment Management			
Review of Private Equity Portfolio Operations (23-301)	Audit	Complete	April 2023
Review of External Public Markets Global Equity Portfolio Operations (23-302)	Audit	Complete	July 2023
Review of Investment Trading Operations (23-303)	Audit	Reporting	n/a
Investment Committees Attendance	Advisory	Complete	n/a
Information Technology			
Audit of Information Systems Inventory and Data Classification (23-501)	Audit	Complete	December 2022
Audit of Malware Protection and Ransomware Readiness (23-502)	Audit	Complete	April 2023
Audit of MyTRS (23-503)	Audit	Complete	September 2023
Review of Cyber Controls (23-504)	Audit	Complete	September 2023
IT Risk Assessment	Advisory	Complete	n/a
Disaster Recovery; Security Risk Assessment Review	Advisory	Complete	n/a
Internal Audit Activities			
Internal Audit Annual Report – FY2022	Administrative	Complete	October 2022
Internal Audit Annual Quality Assurance Review	Administrative	Reporting	n/a
Data Analysis Process Buildout	Administrative	Ongoing	n/a
Staff Training Initiative	Administrative	Ongoing	n/a
Quarterly Audit Recommendations Follow-up	Administrative	Complete	September 2022; December 2022; April 2023; and July 2023.

Revisions to Fiscal Year 2023 Audit Plan

There were minor changes to the FY 2023 Audit Plan, the details of which are briefly discussed in the table below. The Revised Audit Plan was approved by the Board at its April 2023 meeting.

Project	Change	Reason
Technology		
Audit of the Cybersecurity Incident Response Program	Deferred to FY 2024	Deferred to allow management six to nine months to develop and implement an action plan following a recent tabletop exercise.
Audit of MyTRS	Added to FY 2023	Brought forward an audit that had been planned for FY 2024.
Pension Benefits and Reporting Employers		
Reporting Employer Testing	Cancelled	Internal Audit no longer had the resources to perform the audit. In addition, management had downgraded the ERM risk for this area.

Audit results are included in formal audit reports that are presented by Internal Audit staff at the quarterly TRS Audit, Compliance, and Ethics (ACE) Committee meetings and included in the ACE Committee materials.

III. Consulting Services and Non-audit Services Completed

III. Consulting Services and Non-Audit Service Completed

During fiscal year 2023, Internal Audit conducted the following consulting (non-audit services) projects.

1. Employer Data Analysis and Testing

Objective: Gather and use full payroll data to risk assess reporting entities for audit, to identify noncompliance with TRS Laws and Rules, and identify errors in system edit checks and missing data. Specifically,

- Identify missing regular payroll records for members who worked in TRS eligible positions and not terminated with single employment in accordance with TRUST system rules
- Identify and test TRS membership eligibility, termination process, and ORP eligibility and data accuracy

Internal Audit also performed various advisory services, as listed in section II.

IV. External Quality Assurance Review (Peer Review)

Report on the External Quality Assurance Review of the
Teacher Retirement System of Texas

Internal Audit Department

June 2022



Performed by

Stephen R Hillerman, CIA, CRMA, CIGA
Chief Audit Executive
New York State Office of the State Comptroller

Carim Cervantes, CIA, CFE, CIGA
Internal Audit Supervisor
New York State Office of the State Comptroller

Performed in Accordance with the State Agency Internal Audit Forum
Peer Review Policies and Procedures

Teacher Retirement System of Texas Internal Audit Department
External Quality Assurance Review - June 2022

Overall Opinion

Based on the information received and evaluated during this external quality assurance review, it is our opinion that the Teacher Retirement System of Texas (TRS), Internal Audit Department receives a rating of "**Pass/Generally Conforms**" and is in compliance with the Institute of Internal Auditors (IIA) *International Professional Practices Framework* and Code of Ethics, the United States Government Accountability Office (GAO) *Government Auditing Standards*, and the Texas Internal Auditing Act (Texas Government Code, Chapter 2102). This opinion, which is the highest of the three possible ratings, means that policies, procedures, and practices are in place to implement the standards and requirements necessary for ensuring the independence, objectivity, and proficiency of the internal audit function.

We found that the Internal Audit Department is independent, objective, and able to render impartial and unbiased judgments on the audit work performed. The staff members are qualified, proficient, and knowledgeable in the areas they audit. Individual audit projects are planned using risk assessment techniques; audit conclusions are supported in the working papers; and findings and recommendations are communicated clearly and concisely.

The Internal Audit Department is well managed internally. In addition, the Department has effective relationships with the Board and is well respected and supported by management. Surveys and interviews conducted during the quality assurance review indicate that management considers Internal Audit a useful part of the overall agency operations and finds that the audit process and report recommendations add value and help improve the agency's operations.

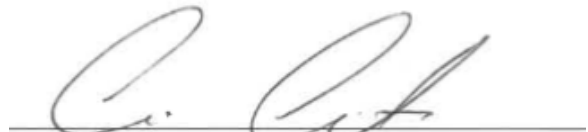
The Internal Audit Department has reviewed the results of the peer review team's work and has accepted them to be an accurate representation of the Department's operations.

Acknowledgements

We appreciate the courtesy and cooperation extended to us by the Chief Audit Executive, Internal Audit staff, the Board Chair, the Chair of the Audit, Compliance and Ethics Committee, the Executive Director, and the executive managers who participated in the interview process. We would also like to thank each person who completed surveys for the quality assurance review. The feedback from the surveys and the interviews provided valuable information regarding the operations of the Internal Audit Department and its relationship with management.



Stephen R Hillerman, CIA, CRMA, CIGA
Chief Audit Executive
New York State Office of the State Comptroller
Peer Review Team Leader



Carim Cervantes, CIA, CFE, CIGA
Internal Audit Supervisor
New York State Office of the State Comptroller
Peer Review Team Member

V. Internal Audit Plan for Fiscal Year 2024

Risk Assessment

Risk assessment is a systematic process for assessing and integrating professional judgments about probable adverse conditions and events. The projects included in the FY2024 plan were primarily identified through a risk assessment process in collaboration with trustees, members of the TRS executive team, and staff. The process included a review of the latest Enterprise Risk Management (ERM) reports for the Risk Oversight Committee's perception of key areas of risk. TRS' auditable activities include organizational units, programs and agency-wide processes, each of which was risk-ranked using specific elements including relative size of the unit, potential impact on operations, regulatory compliance, public interest, work complexity, audit history, and other factors deemed relevant by Internal Audit and Executive Management.

Benefit Testing serves as a reserve project. It will be performed if the hours put aside for contingencies (i.e., fraud, waste and abuse investigations and special projects) are not fully expended.

The specific scope of each audit in the plan will be determined once the audit team has completed its audit planning process.

Internal Audit Plan for Fiscal Year 2024

Department/Program, Project Title	Type	Timing	Budgeted Hours
Executive and Finance			
ACFR Testing of Annuity Payments	Audit	Q1	400
IMD Contract Oversight	Audit	Q3	1,200
Follow-up of Prior Audits	Audit	Q2 – Q3	1,200
Special Requests and Emerging Issues	Advisory	Q1 – Q4	500
Meetings Participation	Advisory	Q1 – Q4	500
TEAM Program			
TEAM Testing and Reconciliation/ Committee Meeting Attendance	Advisory	Q1 – Q4	800
TEAM Independent Program Assessment (IPA) Vendor Support	Advisory	Q1 – Q4	500
Pension Benefits			
Pension Refund Processes	Audit	Q2	1,000
Reporting Employer Data Analysis	Audit	Q1 – Q4	500
Benefit Processing Data Analysis	Audit	Q1 – Q4	500
Benefit Testing	Reserve	Q4	800
Special Requests and Emerging Issues	Advisory	Q1 – Q4	300
Health Care			
Review of Compliance with SB 827 (Insulin Cost-Sharing)	Audit	Q1	1,600

Teacher Retirement System of Texas
Internal Audit Annual Report for Fiscal Year 2023

Department/Program, Project Title	Type	Timing	Budgeted Hours
Healthcare Claims Data Analysis – Formulary Testing	Advisory	Q1 – Q4	800
Healthcare Claims Data Analysis – Unusual Provider Billing Patterns	Continuous Audit	Q1 – Q4	800
Healthcare Claims Data Analysis – Administrator Contract Compliance, etc.	Continuous Audit	Q1 – Q4	800
Special Requests and Emerging Issues	Advisory	Q1 – Q4	100
Information Technology			
Audit of Vulnerability Remediation and Patch Management	Audit	Q1-Q2	1,600
Audit of the Cybersecurity Incident Response Program	Audit	Q3	1,600
Review of Cyber Controls	Audit	Q4	1,000
Audit of Identity and Access Management	Reserve Audit	Q4	n/a
IT Risk Assessment	Advisory	Q1 – Q4	200
Disaster Recovery; Security Risk Assessment Review	Advisory	Q1 – Q4	100
Investment Management			
Review of Multi-Asset Trade Operations (MATO)	Audit	Q2	1,650
Review of Risk Parity Operations	Audit	Q3	1,460
Review of the Emerging Manager Program	Audit	Q4	800
Review of the Innovation Portfolio Program	Audit	Q4	800
Investment Committee Attendance, etc.	Advisory	Q1 – Q4	700
Internal Audit Department			
Internal Audit Annual Report (FY2023)	Administrative	Q1	100
Quarterly Audit Recommendations Follow-Up	Administrative	Q1 – Q4	300
Data Analysis Process Buildout	Administrative	Q1 – Q4	400
Staff Training Initiative	Administrative	Q1 – Q4	1,200
Audit, Compliance & Ethics Committee Meetings Preparation	Administrative	Q1 – Q4	400
Internal Audit Annual Quality Assurance Review	Administrative	Q4	200
Fiscal Year 2025 Audit Plan	Administrative	Q4	600

High Risk Areas Not Included in the FY2024 Audit Plan

The following areas were rated as high, elevated, or caution within TRS' ERM Stoplight Report but were not included in the FY2024 Audit Plan.

Area	Reason for Exclusion
Records and Information Management (RIM)	RIM was audited in FY2022. Internal Audit to perform follow-up review of RIM around 2026.

VI. External Audit Services Procured in Fiscal Year 2023

External Audit Services Procured in Fiscal Year 2023

External Audit Services Procured by TRS	Provided by	Report Date
Annual Comprehensive Financial Report (ACFR) – Fiscal Year 2022	State Auditor's Office	11/18/2022
TRS Investment Company (TRICOT) Financial Audit – Fiscal Year 2022	Crowe LLP	10/29/2022

VII. Reporting Suspected Fraud and Abuse

Reporting Suspected Fraud and Abuse

TRS has taken the following actions to implement the fraud detection and reporting requirements of Section 7.09 of the General Appropriations Act and Section 321.022 of the Texas Government Code:

- The TRS Fraud, Waste, and Abuse Policy establishes a fraud, waste, and abuse prevention awareness program that includes employee training and guidelines for reporting suspected fraud, waste, and abuse. Key elements of the policy include definitions, covered acts, reporting procedures of detected or suspected fraud, waste, or abuse, detection and investigation, awareness training, and corrective action.
- The TRS Internet site includes the contact number of the State Auditor's Office Hotline and a link to reporting instructions.
- Links are available on the TRS Intranet for both the State Auditor's Office Hotline and the TRS Internal Fraud and Ethics Hotline.
- Administration of the TRS Internal Fraud and Ethics Hotline is vested with the Chief Compliance Officer since fiscal year 2016.
- In compliance with the reporting requirement of fraud, waste, and abuse, TRS reports all instances of suspected fraud, waste, and abuse to SAO.

2023 YEAR IN REVIEW



INDEPENDENT • OBJECTIVE • ASSURANCE • CONSULTING

WHO WE ARE:

14 Auditors

3 Business Intelligence Analysts

1 Administrative Professional

WHAT WE BRING:

HIGHLY CREDENTIALLED PROFESSIONALS:

4
Certified Public
Accountants3
Certified
Information
Systems Auditors5
Certified
Internal
Auditors2
Certified
Fraud
Examiners1
Certified
Information
Systems Security
Professional1
Chartered
Financial
Analyst8
MBAs2
PhDs123
123 years total
audit experience81
81 years total data
analysis experience41
41 years total
IT experience46
46 years total
investment experience

DIVERSE BACKGROUNDS:

AUDIT EXPERIENCE



WITH
**BIG FOUR
AUDIT FIRMS**
&
**TEXAS STATE
GOVERNMENT**

DIVERSE PROBLEM
SOLVING SKILLS

INCLUDING:
• AUDIT
• ACCOUNTING
• TREASURY
• INVESTMENT
MANAGEMENT
• TRADING
• DATA ANALYSIS
• CYBER SECURITY
• INFORMATION
TECHNOLOGY

WORK EXPERIENCE



AUSTRALIA
THE UK
CHINA
INDIA
PAKISTAN
RUSSIA
USA

WHAT WE DID IN 2023:

ROBOTICS PROCESS AUTOMATION INITIATIVE



CREATED 3
ROBOTS FOR RE
DATA ANALYSIS



CREATED 38 ALGORITHMS
FOR HEALTH CARE CLAIMS
DATA ANALYSIS



11 TRS AUDITS



8 ADVISORY PROJECTS



580

HOURS of CONTINUING PROFESSIONAL
EDUCATION (CPE) COMPLETED

Q1

- Amanda Jenami, Syed Israr, Katie Linczer, Nathan Ward & Julie Toler attended ITCI's Emerging Issues in Investments and Derivatives conference in October.
- Teklehaimanot Derseh, Syed Israr, Amanda Jenami, Olga Jerman, Julie Toler & Nathan Ward attended & spoke at APPFA's fall conference in November.
- Stephen Randall, Falguni Sampat, & Lisa Wei attended APPFA's fall conference in November.
- Falguni Sampat continued to serve on the Outreach, Culture & Engagement (OCE) Council.

Q2

- Lisa Wei was awarded the CISA designation in December.
- Katie Linczer was awarded a Certificate of Achievement from the IIA for "Dedicated Contributions to Item Writing" in December.
- Syed Israr was awarded the Bushel of Fun award in January.
- Syed Israr, Katie Linczer & Julie Toler attended the 2023 TRS IMD Townhall in January.
- Nathan Ward spoke on a panel & attended the 2023 TRS IMD Townhall in January.
- Olga Jerman completed Machine Learning Leadership and Practice Course in February.

Q3

- Department hosted Internal Audit Awareness Week Open House.
- Olga Jerman and Teklehaimanot Derseh attended the NHCAA Schemes for Health Care Fraud Investigators & Analysts conference in May.
- Welcomed Jonathan O'Reilly as Business Intelligence Director in March.
- Jonathan O'Reilly joined the APPFA Best Practices Committee and leads the Data Analytics Subcommittee.
- Stephen Randall and Lisa Wei attended the DIR's Information Security Forum in April.

Q4

- Falguni Sampat was awarded the Bushel of Fun award in June.
- Welcomed Tammie Wells as Operations Audit Director, Cui Rye as Senior Internal Auditor & Rebecca Warnick as Audit Project Manager.
- Amanda Jenami, Katie Linczer, Stephen Randall & Julie Toler attended & spoke at APPFA's spring conference in June.
- Teklehaimanot Derseh completed the Post Graduate Program in Artificial Intelligence and Machine Learning – Business Applications in July.
- Katie Linczer was awarded the Golden Apple award for 2023 contributions.