UNIVERSITY of SOUTH FLORIDA
Office of Internal Audit

25-020 Preeminence Data Integrity Audit

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Executive Summary

The University of South Florida (USF) Office of Internal Audit (IA) performed an audit of the processes and internal controls which ensure the completeness, accuracy, and timeliness of data submissions supporting the 13 Preeminence measures (metrics). These data submissions are relied upon by the Florida Board of Governors (BOG) in assessing USF's eligibility under Florida Statute 1001.7065 Preeminent state research universities program. This audit also provides an objective basis of support for the President and Board of Trustees (BOT) Chair to sign the representations included in the Data Integrity Certification to be filed with the BOG by March 1, 2025. This project is part of the Internal Audit 2024 - 2025 Work Plan. The focus of this audit was on the processes and internal controls established by USF as of September 30, 2024. Details are included in the scope and objectives section of this report.

Data supporting these metrics comes from a variety of sources including data submitted to the BOG via routine and ad hoc requests, financial data submitted by the USF Foundation regarding endowments, data reported to external entities, and data created and reported by independent entities external to USF's control. USF may assist the BOG's Office of Data Analytics (BOG-ODA) by gathering the data or confirming the data. For additional information on metrics and data sources included in this review see Exhibit A.

IA concluded that the processes and internal controls in place to ensure the completeness, accuracy, and timeliness of data submissions which support the Preeminence metrics offered significant assurance for metrics A-E and I-L and offered moderate assurance for metrics F-H and M due to enhancements needed related to data validation for the National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey. Despite the risk identified, there was no impact to the overall status of each Preeminence metric. Additionally, action plans to remediate the risk identified have been completed by management.

#	Risk Area	Risk Level	Target Date
1	Data Validation	Moderate	Complete

Overall Conclusion	Definition
Moderate Assurance	There are areas in the control framework or inconsistent application of controls putting the achievement of the organization's objectives at risk.

Details are included in the Risks and Action Plans section of this report.

Scope and Objectives

This audit focused on the processes and internal controls established by USF as of September 30, 2024, to ensure the completeness, accuracy, and timeliness of data submissions supporting the Preeminence metrics.

The primary audit objectives were to:

- Determine whether the processes and internal controls established by the University ensure the completeness, accuracy, and timeliness of data submissions which support the Preeminence metrics.
- Provide an objective basis for the President and BOT Chair to sign the representations included in the Data Integrity Certification, which will be submitted to the BOT and filed with the BOG by March 1, 2025.

The scope and objectives of the audit were set jointly and agreed to by the President, BOT Chair, the BOT Audit & Compliance Committee Chair, and the university's Chief Audit Executive.

In conducting the audit, IA followed a disciplined, systematic approach using the Global Internal Audit Standards. The information system components of the audit were performed in accordance with the ISACA (Information Systems Audit and Control Association) Standards and Guidelines. The COSO (Committee of Sponsoring Organizations of the Treadway Commission) and COBIT 2019 control frameworks were used to assess control structure effectiveness.

Procedures Performed

Although not required by the BOG, the following key objectives have been incorporated into the audit this year:

1. Evaluate key processes and controls used by the data owner to ensure the completeness, accuracy, and timeliness of data submission.
2. Validate all populations utilized and recalculate metrics using internal and external data sets, when available.
3. Verify data accuracy through sample testing of key files and data elements.
4. Review the processes followed by the Office of Decision Support (ODS) to ensure the completeness, accuracy, and timely submission of data supporting the metrics.
5. Confirm the consistency of data components and methodology with BOG's expectations for the implementation of Florida Statute (FS) 1001.7065 (Preeminent state research universities program).
6. Determine the overall risk of a data submission being inaccurate or incomplete.
7. Recommend corrective actions where weaknesses were identified.

In the initial year of the Preeminence Data Integrity audit, a comprehensive review of processes and controls was conducted, followed by a risk assessment. In each subsequent year, system process documentation was updated to reflect any material changes that took place; a new risk assessment was performed based on the updated system documentation and processes; and a new work plan was developed based on the updated risk assessment. Fraud-related risks, including the availability and appetite to manipulate data to produce more favorable results, were included as part of the risk assessment.

This year's audit also included:

1. Evaluating any changes to key processes used to ensure the completeness, accuracy, and timeliness of data submissions used in the metrics. This includes verifying new controls put in place to resolve deficiencies identified in the prior year's audit.

2. Validating the accuracy of the data submitted via external surveys: NACUBO (National Association of College and University Business Officers) Endowment Survey, National Science Foundation (NSF) Graduate Students and Postdoctorates in Science and Engineering (GSS) Survey, and the NSF Higher Education Research and Development (HERD) Survey.

3. Verifying data accuracy through sample testing of key files and data elements from the Admission (ADM) BOG files to OASIS (Online Access Student Information System), the system of record. The ADM file is not tested in the Performance Based Funding (PBF) audit, and the integrity of this file affects Preeminence Metric A (Average GPA/Average SAT Score).

Prior Audit Projects

In FY 2023-2024, an audit of the processes and internal controls established by the University to ensure the completeness, accuracy, and timeliness of data submissions supporting the 12 Preeminence metrics reported in the USF 2023 Accountability Plan (IA 24-020, issued February 2, 2024) was performed and two medium-priority risks were reported. The recommendations related to these issues have been reported by management as implemented.

To address the medium-priority risks identified in the 24-020 Preeminence Audit Report, USF Research & Innovation (USFRI) documented a NSF HERD Survey data review process. This data review process will be implemented by USFRI for the FY 2023-2024 NSF HERD Survey submission. Therefore, IA will verify the implementation of outstanding recommendations during the next audit period.

Conclusion

IA concluded that the processes and internal controls in place to ensure the completeness, accuracy, and timeliness of data submissions which support the Preeminence metrics offered significant assurance for metrics A-E and I-L and offered moderate assurance for metrics F-H and M due to enhancements needed related to data validation for the National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey. Despite the risk identified, there was no impact to the overall status of each Preeminence metric. Additionally, action plans to remediate the risk identified have been completed by management.

Background

Regulatory Requirements

In 2013, the Legislature and Governor approved Senate Bill 1076, (see SB 1076 K-20 Education) creating the Preeminent State Research Universities Program (see FS 1001.7065) and providing added resources and benefits to universities meeting preeminent status. Following the approval of Senate Bill 266 in 2023, there are now 13 academic and research excellence standards established for the preeminent state research universities program and each standard is to be reported annually in the Board of Governors Accountability Plan. FS 1001.7065 indicates that a state university meeting seven out of 13 standards is designated as an "emerging preeminent state research university" and a state university meeting 12 out of 13 standards as a "preeminent state research university."

On June 18, 2019, Senate Bill 190 was approved by the Legislature and Governor, requiring the BOG to define the data components and methodology used to implement FS 1001.7065 and requiring each university to conduct an annual audit to verify that the data submitted pursuant to FS 1001.7065 complies with the data definitions established by the board. The BOG most recently updated the Preeminent Metrics Methodology Document in October 2020.

Accountability Plan

FS 1001.706 Powers and duties of the Board of Governors requires the BOG to "develop an accountability plan for the State University System and each constituent university. The accountability plan must address institutional and system achievement of goals and objectives specified in the strategic plan adopted pursuant to paragraph (b) and must be submitted as part of its legislative budget request."

BOG Regulation 2.002 University Accountability Plans requires each university BOT to "prepare an accountability plan and submit updates on an annual basis for consideration by the Board of Governors. The accountability plan shall outline the university's top priorities, strategic directions, and specific actions for achieving those priorities, as well as progress toward previously approved institutional and System-wide goals."

The university's performance results related to the Preeminence metrics are reported to the BOG via the Accountability Plan, after review and approval by the USF BOT.

- The 2024 Accountability Plan was approved by the USF BOT on April 30, 2024.
- The BOG reviewed and approved the Accountability Plan on June 28, 2024.

Preeminence Data Sources

The data supporting Preeminence metrics comes from a variety of sources including:

- Data reported to external entities, which is managed in accordance with USF Policy 11-007 Data Submission to External Entities.
- Data submitted to the BOG via routine and ad hoc requests, which is managed by the USF Office of Data Administration & State Reporting.
- Financial data submitted by the USF Foundation (USFF) regarding endowments to the National Association of College and University Business Officers (NACUBO).
- Data that is created and reported by independent external entities outside of USF's control. USF may assist the BOG's Office of Data Analytics (BOG-ODA) by gathering the data or confirming the data, but USF has no ability to impact the data.

USF Roles and Responsibilities for External Data Requests

In order to ensure the integrity of the data submitted to external agencies outside of the BOG process, USF promulgated USF Policy 11-007 which communicates to USF "the roles and responsibilities for responding to requests from External Entities that involve provision of institutional data." The policy applies to all units/offices across USF and provides guidelines for processing data requests by external entities. External data requests not exempted from this policy, "must go through USF's Office of Decision Support (ODS) which has established procedures for processing those requests details of which may be accessed on the ODS Data Request site."

According to USF Policy 11-007, institutional data is defined as "all data elements created, maintained, received, or transmitted as a result of business, educational or research activities of a USF unit or office." External data requests include, but are not limited to, "publications by external entities (NSF, CUPA, ACT, etc.), ranking publications – international and domestic (U.S. News and World Report, Times Higher Education, etc.), surveys administered by or on behalf of external entities (NSSE, THE-WSJ, Princeton Review, etc.), other external reports available to the general public, and mandated reports (IPEDS, etc.)."

ODS Validation Process

There are three surveys used as data sources for the Preeminence metrics: The National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey, the NSF/National Institutes of Health (NIH) Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS), and the National Association of College and University Business Officers (NACUBO) Commonfund Study of Endowments Survey. Due to the financial nature of the NACUBO survey, this survey follows the BOG ad hoc review process.

The remaining two external survey results reviewed by ODS (NSF HERD and GSS) are used in five metrics: Annual Research Expenditures (Metric F), Annual Research Expenditures in

Diversified Nonmedical Sciences (Metric G), Broad Disciplines Ranked in Top 100 for Research Expenditures (Metric H), Post-Doctoral Appointees (Metric K), and Total STEM-related Research Expenditures (Metric M).

BOG Submission Validation Process

Specifically excluded from USF Policy 11-007 are requests from the BOG including official information requests, routine annual requests, and ad hoc special requests, which are managed by ODS. The Institutional Data Administrator manages the ODS process.

ODS is responsible for certifying and managing the submission of data to the BOG on behalf of USF pursuant to BOG Regulation 3.007. ODS serves as a liaison between the BOG-ODA and USF regarding requests for information and coordinates the efforts of academic and administrative resources to ensure timely and accurate reporting. ODS has established roles and responsibilities for those involved in maintaining institutional data, preparing required files for submission to the BOG, and validating the files are accurate and consistent with BOG data definitions. Each data submission is assigned to a primary executive reviewer who is responsible for the review and approval of the institutional data submission prior to the official submission to the BOG.

The process used to create standard BOG submissions, submitted via the State University Data System (SUDS), is audited each year by the Office of Internal Audit (IA).

The following BOG SUDS file submissions are utilized by the BOG to calculate or validate Preeminence metrics:

- Admission file (ADM) used to compute Average GPA & Average SAT (Metric A).
- Student Instruction files (SIF/SIFP) used to generate the First Time in College (FTIC) cohort used in Metrics A, C (Retention Rate), and D (4-yr Graduation Rate) and to calculate metrics.
- SIF Degrees Awarded file (SIFD) used to compute Number of Doctoral Degrees Awarded Annually (Metric J) and 4-yr Graduation Rate (Metric D).

BOG Ad hoc Report Process

The USFF is responsible for calculating and reporting data for the NACUBO Commonfund Study of Endowments which is used for Metric L (Endowments >= $500 Million). USFF utilizes the NACUBO definition of endowments to complete the survey. Once compiled, the endowment team reviews the data, and the data is approved by the Senior Vice President for Legal Affairs and General Counsel, Chief Strategy Officer. The endowment team includes the Vice President/CFO and two additional USFF team members (Assistant Vice President of Investments and USFF Accounting Manager). The NACUBO reporting is also subject to the ODS ad hoc data executive review process.

All BOG ad hoc reports are assigned to a sub-certifier who has been given the responsibility to oversee the definition, management, control, integrity, and maintenance of institutional

data. A formal executive review meeting may be held, or an executive review is performed via email in which institutional data is reviewed and approved prior to submission to the BOG. Upon approval by the executive review team, the data is provided to ODS for inclusion in the Accountability Plan.

Process Used to Validate Metrics Using External Sources

The results of three of the Preeminence metrics are based on data maintained by external sources including: Public University National Ranking (Metric B), National Academy Memberships (Metric E), and Utility Patents Awarded (Metric I).

University rankings are tracked by ODS on an on-going basis. Annually, the BOG provides identified rankings which are reviewed by ODS who validates the rankings on the external entities' websites. USF does not submit data to the BOG for Metric E or I, the BOG obtains the number of faculty members who are members of a National Academy by reviewing public data without the assistance of USF and obtains the number of patents directly from the United States Patent and Trademark Office (uspto.gov). ODS and the Office of Research & Innovation validate the BOG's counts.

Higher Education Research & Development (HERD) Portal

USF Research & Innovation (USFRI) uses a SQL database (research portal) to compile data used to generate USF's NSF HERD Survey submission. Data from USF systems of record is exported to MS Excel files then uploaded into the research portal. Additionally, each Direct Support Organizations (DSO) logs into the research portal to complete a survey form and provide supporting workpapers. The data files from the various inputs are compiled within the research portal to populate the NSF HERD Survey questions that include data from all USF campuses, One USF. The final NSF HERD Survey reporting is reconciled to the data files and reviewed by USFRI and then by ODS in accordance with USF Policy 11-007 prior to submission to the NSF. The NSF HERD Survey submission process contains data validation edits that identify variances and inconsistencies between questions and require explanations for any large year-to-year variances.

Risks and Action Plans

1. Moderate Risk: Data Validation

Data validation ensures the accuracy and quality of data. Data validation controls are performed to identify data errors, incomplete or missing data and unreasonable data items. Ensuring that the data is accurate and complete helps maintain its integrity. This is particularly important when data is collected from multiple sources and systems as is the case in the compilation of the National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey.

USF Research & Innovation (USFRI) uses a SQL database (research portal) to store and compile data for the NSF HERD Survey. Data from various USF systems of record are exported to MS Excel files and adjustments needed to correct or normalize the data, including the removal of duplicate expenditures, are made to the MS Excel files prior to upload into the research portal.

For the first time, payroll related expenditures related to the Florida High Tech Corridor (FL HTC) research funding were included in the fiscal year (FY) 2023 NSF HERD Survey. In order to ensure the data did not contain duplicate expenditures the payroll expenditures identified for inclusion into HERD were then compared to institutional research expenditures, research related start-up costs and cost sharing already included in separate HERD component reports. The result of the duplicates review was reported in a Power BI report. The Power BI report identified $259,948 in duplicate expenses related to institutional research. When USFRI exported the report from Power BI, they downloaded an incomplete report which only contained 18 of 105 rows. As a result, $181,865 in duplicate expenses were not removed from the MS Excel file prior to uploading the FL HTC data into the research portal.

Strong data validity controls require check figures (i.e., control totals) to be utilized to validate the completeness of data extracted from the Power BI Reports. No check figures were used by USFRI to ensure the data was complete and there was no independent review of the data download to ensure data integrity was maintained. In addition, since this was a new data source, USFRI had not established a formal process for ensuring the data was accurate and complete.

As a result of the prior year IA review (IA 24-020, issued February 2, 2024), USFRI added a data review process to the USFRI's HERD Survey Data Collection Methodology document. This data review process did not define necessary data validation checks such as a comparison of record counts and reconciliation between source systems and exported data.

Inadequate data validation processes pose a risk that errors and inconsistencies in the data are not identified and corrected timely, leading to inaccurate NSF HERD Survey reporting.

Action Plans	Activity Owner	Target Date
USF Research & Innovation (USFRI) has introduced an enhanced reconciliation data validation control to ensure that the total dollar amounts in the Power BI report align with those in the exported Excel file. The methodology instructions for the Higher Education Research and Development (HERD) Survey preparation have been updated to reflect this enhancement. This additional reconciliation data validation control was applied during the preparation of the FY 2024 HERD Survey.	Dena-Rose Wilson, Director of IREA	Completed
To strengthen its data governance framework, USFRI will identify and document additional data validation standards (e.g. control totals, check figures) expected for compiling the HERD Survey.	Dena-Rose Wilson, Director of IREA	Completed

Distribution

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cc	Dena-Rose Wilson	Director, Institutional Research Effectiveness & Assessment (IREA)

Exhibit A – Preeminence Data Sources

Metric	Metric Description	Responsible Unit	Source	Data Used/Created by the BOG
A	Average GPA and SAT score for incoming freshman in Fall semester	BOG-ODA	BOG Submission File	The BOG-ODA performs concordance of SAT scores and calculates averages based on the Admission (ADM) file tables provided by USF.
B	Top-50 ranking in national public university rankings	ODS	External websites	List of acceptable organizations maintained by the BOG. USF's performance for listed organizations is prepared by the BOG. ODS validates using external websites.
C	Freshman retention rate (Full-time, FTIC)	ODS	BOG Submission Files	Data based on the BOG Retention File (RET) prepared from the Student Instruction Files (SIF, SIFP). BOG computes the FTIC Cohort and the retention rate.
D	Four-year graduation rate (Full-time, FTIC)	ODS	BOG Submission File	Data based on the BOG files SIF, SIFP used to calculate the FTIC cohort and Student Instruction File-Degrees Awarded file (SIFD). BOG computes graduation rates based on BOG files (SIF, SIFP, and SIFD).
E	National Academy memberships	BOG-ODA	Official membership directories	Calculated by the BOG but validated by USFRI using external websites. A list of acceptable organizations is maintained by the BOG.
F	Total annual research expenditures, including federal research expenditures	USFRI	NSF HERD Survey	Survey utilizes GEMS, FAST, and FAIR data, and R&D activities reported by DSO's.
G	Total annual research expenditures in diversified nonmedical sciences	USFRI	NSF HERD Survey	Same as Metric F.
H	Top-100 national ranking in research expenditures in at least five STEM disciplines	USFRI	NSF HERD Survey	Same as Metric F, except USFRI utilizes department ID number to associate R&D activities with a discipline.
I	Patents awarded over three-year period	BOG-ODA	USPTO website	As reported by USPTO for the most recent three years.
J	Doctoral degrees awarded annually	BOG-ODA	BOG Submission File	BOG computes and ODS validates based on SIFD.
K	Number of postdoctoral appointees awarded annually	OPA	NSF GSS Survey	Survey utilizes GEMS, FAST, and FAIR data.
L	Endowment size	USFF	NACUBO-Commonfund Study of Endowments	USFF financial records in Blackbaud Financial Edge NXT and external investment statements.
M [1]	Total annual STEM-related research expenditures, including federal research expenditures	USFRI	NSF HERD Survey	Same as Metric F.

[1] Following the approval of Senate Bill 266 in 2023, there are now 13 academic and research excellence standards established for the preeminent state research universities program and each standard is to be reported annually in the Board of Governors Accountability Plan.

Exhibit B – Key Terms

Term	Description
Blackbaud Financial Edge NXT	Financial accounting system used by USF Foundation and USF Research Foundation
BOG-ODA	Florida Board of Governors' Office of Data Analytics
FAIR	Faculty Academic Information Reporting System used to obtain department funded research efforts
FAST	Financial Accounting System used by USF to manage contracts and grant activities
FL HTC	Florida High Tech Corridor, not-for-profit organization partnered with USF
FTIC	First-time in College as defined by IPEDS and the BOG
GEMS	Global Management Employment System used by USF to manage human resource and payroll activities
IAE	Institute of Applied Engineering, direct support organization of USF
NACUBO	National Association of College and University Business Officers NACUBO-Commonfund Study of Endowments
NSF GSS	National Science Foundation/National Institutes of Health Survey of Graduate Students and Postdoctorates in Science and Engineering
NSF HERD	National Science Foundation Higher Education Research and Development Survey
ODS	Office of Decision Support in the Office of the Provost
OPA	Office of Post-Doctoral Affairs in the Office of Graduate Studies
USFRI	USF Research & Innovation
PBF	Performance Based Funding
USFF	USF Foundation, direct support organization of USF
USFRF	USF Research Foundation, direct support organization of USF
USPTO	United States Patent & Trademark Office
R&D	Research & Development expenditures as defined by the HERD Survey
STEM	Science, Technology, Engineering and Mathematics

Appendix A – Risk and Overall Conclusion Legend

Risk	Definition
Minor	Insignificant or incidental negative impact
Moderate	Notable negative impact
Major	Significant negative impact
Severe	Substantial, pervasive, or long-lasting negative impact

Overall Conclusion	Definition
Significant Assurance	There is a generally sound control framework designed to meet the organization's objectives, or controls are generally being applied consistently.
Moderate Assurance	There are areas in the control framework or inconsistent application of controls putting the achievement of the organization's objectives at risk.
Limited Assurance	There are weaknesses in the design or inconsistent application of the control framework that require urgent management attention to achieve the organization's objectives.
Weak Assurance	There are considerable weaknesses in the design or inconsistent application of the control framework that will result in, or already has resulted in, failure to achieve the organization's objectives. Immediate management attention is required.