



**Audit of Performance Based Funding and
Emerging Preeminent Metrics Data Integrity**

**Report No. 21/22-03
February 10, 2022**

FIU | Office of Internal Audit

Date: February 10, 2022

To: Elizabeth Bejar, Senior Vice President of Academic & Student Affairs
Hiselgis Perez, Associate Vice President of Office of Analysis and Information Management

From: Trevor L. Williams, Chief Audit Executive



Subject: Audit of Performance Based Funding and Emerging Preeminent Metrics Data Integrity, Report No. 21/22-03

Beginning in fiscal year 2013-14, the State University System of Florida Board of Governors (BOG) instituted a performance-based funding program predicated on 10 performance metrics used to evaluate Florida's public universities. For fiscal year 2020-2021, the Florida Legislature and Governor allocated \$560 million in performance-based awards, of which FIU ranked number one and received \$67.5 million. Furthermore, in 2020, the University achieved sufficient preeminent metrics to receive the designation of an emerging preeminent state research university by the authority of Florida Statute 1001.7065.

Pursuant to a request by the BOG and the mandate of Florida Statute 1001.706, we have completed an audit of the University's performance-based funding and emerging preeminent metrics. The primary objectives of our audit were to determine whether the processes established by the University ensure the completeness, accuracy, and timeliness of data submissions to the BOG that support the Performance Based Funding and Emerging Preeminent Metrics and to provide an objective basis of support for the University Board of Trustees Chair and President to sign the representations made in the *Performance Based Funding - Data Integrity Certification* that will be submitted to the Board of Trustees and filed with the BOG by March 3, 2022.

Our audit confirmed that FIU continues to have good process controls for maintaining and reporting performance metrics data. Overall, the system continues to function in a reliable manner, in all material respects. However, although having no adverse impact on the calculation of the metrics tested, we identified gaps that if appropriately addressed by management, will enhance the process. We offered four recommendations to address the issues identified during the audit. Management has agreed to implement all recommendations offered.

I also take this opportunity to express our appreciation for the cooperation and courtesies extended to us during this audit.

Attachment

C: FIU Board of Trustees

Kenneth A. Jessell, Interim University President

Aime Martinez, Interim Chief Financial Officer and Vice President for Finance and Administration

Javier I. Marques, Vice President and Chief of Staff, Office of the President

Carlos B. Castillo, General Counsel

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EXECUTIVE SUMMARY

Introduction

Beginning in fiscal year 2013-14, the State University System of Florida Board of Governors (BOG) instituted a performance based funding program predicated on 10 performance metrics used to evaluate Florida's public universities. For fiscal year 2021-2022, FIU ranked number one and received \$67.5 million of the \$560 million distributed by the Florida Legislature and Governor. Furthermore, in 2020, the University achieved sufficient preeminent metrics to receive the designation of an emerging preeminent state research university.

What We Did

As required by the BOG, we performed this audit to determine whether the processes established by the University ensure the completeness, accuracy, and timeliness of data submissions to the BOG that support the Performance Based Funding and Emerging Preeminent Metrics.

What We Concluded

In summary, we concluded that the University continues to have good process controls for maintaining and reporting performance metrics data. In our opinion, the system, in all material respects, continues to function in a reliable manner. Nevertheless, although having no adverse impact on the calculation of the metrics tested, we identified opportunities for process improvements. Specifically, information technology and general controls could be strengthened by the following actions:

- A review of access controls is done based on a specific list of employees instead of based on critical roles. Perform a review of access controls based on critical roles in PantherSoft.
- The BOG mapping document had not been reviewed since 2014 and several auditable fields were not enabled. Review the *PantherSoft to BOG Mapping of Elements* document to determine completeness and ensure all auditable fields are enabled.
- Upon termination or transfer, some former employees' access was not disabled or deactivated in the PAWS system. Create a formal process for disabling accounts once no longer required and routinely verify access.
- The *AIM-BOG Business Process Manual* does not contain guidance to staff related to preeminent metrics. Update the *Manual* to include policies and procedures related to preeminent metrics.

The reportable conditions found and the background giving rise to the foregoing recommendations are detailed in the Observations and Recommendations section beginning on page 10 of this report. We have also included the mitigation plans management has proposed in response to our observations and recommendations, along with their implementation dates and complexity ratings.

OBJECTIVES, SCOPE, AND METHODOLOGY

As directed by the State University System (SUS) of Florida Board of Governors and mandated by Florida Statutes, we have completed an audit of the data integrity and processes utilized in the University's Performance Based Funding (PBF or "Funding Metrics") and Emerging Preeminent Metrics. Our audit entailed an examination of data files submitted to the BOG between September 1, 2020, and August 31, 2021. The primary objectives of our audit were to:

- (a) Determine whether the processes established by the University ensure the completeness, accuracy, and timeliness of data submissions to the BOG that support the Performance Based Funding and Emerging Preeminent Metrics; and
- (b) Provide an objective basis of support for the University Board of Trustees Chair and President to sign the representations made in the *Data Integrity Certification*, which will be submitted to the Board of Trustees and filed with the BOG by BOG-approved extended due date of March 3, 2022.

Our audit was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* promulgated by The Institute of Internal Auditors and *IS Audit and Assurance Standards* issued by ISACA, and included an examination of the supporting records, systems, and processes and the performance of such other auditing procedures, as we considered necessary under the circumstances.

During the audit, we:

- Updated our understanding of the data flow process for all the relevant data files from the transactional level to their submission to the BOG;
- Performed an analysis of the *Annual AIM* [Office of Analysis and Information Management] *Review*. This review includes an assessment of audit logs, system access controls, and user privileges within PantherSoft and the State University Database System (SUDS);
- Confirmed change management controls for redefining and/or correcting data to meet the BOG's data definition standards during the submission and resubmission process;
- Interviewed key personnel, including AIM employees, functional unit leads, and those responsible for developing and maintaining the information systems;
- Reviewed BOG data definitions and methodology and meeting notes from the relevant groups within the BOG and FIU to identify changes to the BOG Funding Metrics;
- Observed current practices and processing techniques;
- Tested the latest data files for four of the 10 performance based funding metrics and three of the nine emerging preeminent metrics achieved and submitted to the BOG as of August 31, 2021.

Sample sizes and elements selected for testing were determined on a judgmental basis applying a non-statistical sampling methodology.

Audit planning and fieldwork was conducted from August 2021 to January 2022. In fiscal year 2020-2021, we issued the report *Audit of Performance Based Funding and Emerging Preeminence Metrics Data Integrity*, (Report No. 20/21-06), and a separate management letter dated February 1, 2021. That audit management letter offered two recommendations requiring follow-up which management implemented, and our office verified during our audit.

BACKGROUND

The Florida Board of Governors has broad governance responsibilities affecting administrative and budgetary matters for Florida's 12 public universities. Beginning in fiscal year 2013-2014, the BOG instituted a performance-based funding program, which is predicated on 10 performance metrics used to evaluate the universities on a range of indicators, including graduation and retention rates, job placement, and access rate, among others. Two of the 10 performance metrics are "choice metrics"—one selected by the BOG and one selected by each university's Board of Trustees. These metrics were chosen after reviewing over 40 metrics identified in the Universities' Work Plans but are subject to change yearly. The 10 metrics pertaining to Florida International University are depicted in the following table.

FIU's Performance Based Funding Metrics			
1.	Percent of Bachelor's Graduates Enrolled or Employed (Earning \$25,000+) One Year After Graduation	6.	Bachelor's Degrees Awarded in Areas of Strategic Emphasis
2.	Median Wages of Bachelor's Graduates Employed Full-time One Year After Graduation	7.	University Access Rate (Percent of Undergraduates with a Pell-grant)
3.	Cost to the Student Net Tuition and Fees for Resident Undergraduates per 120 Credit Hours	8.	Graduate Degrees Awarded in Areas of Strategic Emphasis
4.	Four-Year FTIC (Full-time, First-Time-In-College) Graduation Rate	9a.	Two-Year Graduation Rate for Florida College System Associate in Arts Transfer Students
		9b.	Six-Year Graduation Rate for Students who are Awarded a Pell Grant in their First Year
5.	Academic Progress Rate (2 nd Year Retention with GPA above 2.0)	10.	Board of Trustees' Choice – Number of Post-Doctoral Appointees

In 2016, the Florida Legislature passed, and the Governor signed into law the Board of Governors' Performance-Based Funding Model, now codified into the Florida Statutes under Section 1001.66, *Florida College System Performance-Based Incentive*.

The BOG's model has four guiding principles:

1. Use metrics that align with the SUS Strategic Plan goals
2. Reward Excellence or Improvement
3. Have a few clear, simple metrics
4. Acknowledge the unique mission of the different institutions

The Performance Funding Program also has four key components:

1. Institutions are evaluated and receive a numeric score for either Excellence or Improvement relating to each metric.
2. Data is based on one-year data.
3. The benchmarks for Excellence were based on the Board of Governors' 2025 System Strategic Plan goals and analysis of relevant data trends, whereas the benchmarks for Improvement were decided after reviewing data trends for each metric.
4. The Florida Legislature and Governor determine the amount of new state funding and the proportional amount of institutional funding that would come from each university's recurring state-base appropriation.

The following table summarizes the performance funds allocated for the fiscal year 2021-2022 using the results of the performance metrics from fiscal year 2020-2021, wherein FIU ranked first and earned 97 points.

Florida Board of Governors Performance Funding Allocation, 2021-2022 ¹				
	Points*	Allocation of State Investment	Allocation of Institutional Investment	Total Performance Funding Allocation
FAMU	79	\$ 12,651,647	\$ 14,083,909	\$ 26,735,556
FAU	89	20,392,761	22,701,375	43,094,136
FGCU	82	11,469,477	12,767,908	24,237,385
FIU	97	31,947,249	35,563,918	67,511,167
FL Poly	83	4,295,463	4,781,742	9,077,205
FSU	88	41,028,117	45,672,810	86,700,927
NCF	64	3,643,257	4,055,701	7,698,958
UCF	87	32,898,338	36,622,678	69,521,016
UF	87	50,191,372	55,873,414	106,064,786
UNF	77	12,903,434	14,364,201	27,267,635
USF	94	34,549,019	38,460,229	73,009,248
UWF	83	9,029,866	10,052,115	19,081,981
Totals		\$ 265,000,000	\$ 295,000,000	\$ 560,000,000

*Institutions scoring 51 points or higher receive their full institutional funding restored.

Source: BOG

¹ The amount of state investment is appropriated by the Legislature and Governor. A prorated amount is deducted from each university's base recurring state appropriation (Institutional Investment) and is reallocated to each institution based on the results of the performance-based funding metrics (State Investment).

Pursuant to section 1001.706(5)(e), Florida Statutes:

Each university shall conduct an annual audit to verify that the data submitted pursuant to ss. 1001.7065 and 1001.92 complies with the data definitions established by the board and submit the audits to the Board of Governors Office of Inspector General as part of the annual certification process required by the Board of Governors.

In addition to the data integrity audit for the Performance Based Funding Model, universities designated as preeminent or emerging preeminent must conduct a similar audit for the data and metrics used for preeminence status consideration. The BOG permits this audit either to be included with or separate from the Performance Based Funding Data Integrity Audit.

In 2019, Florida International University achieved sufficient preeminent metrics to qualify for designation as an emerging preeminent state research university by the authority of Florida Statute 1001.7065. Emerging Preeminent status is achieved upon meeting six of the 12 metrics, while Preeminent status requires meeting 11 of the 12 metrics. The following table lists the 12 preeminent metrics and highlights in **bold type** the nine metrics the University met, specifically metrics 1, 3, 5, 6, 7, 8, 9, 10, and 11.

FIU's Emerging Preeminent Metrics			
1.	Average GPA and SAT Score for Incoming Freshman in Fall Term	7.	Total Amount R&D Expenditures in Non-Health Sciences
2.	Public University National Ranking	8.	National Ranking in Research Expenditures
3.	Freshman Retention Rate (Full-Time, First-Time-In-College)	9.	Patents Awarded (over a 3-year period)
4.	Four-Year Graduation Rate (Full-Time, First-Time-In-College)	10.	Doctoral Degrees Awarded Annually
5.	National Academy Memberships	11.	Number of Post-Doctoral Appointees
6.	Total Annual Research Expenditures (Science & Engineering only)	12.	Endowment Size

Organization

AIM consists of the Office of Institutional Research (IR) and the Office of Retention & Graduation Success. One of the goals of AIM is to provide the University community with convenient and timely access to information needed for planning, data driven decision-making, and to respond to data requests from external parties. IR is currently responsible for:

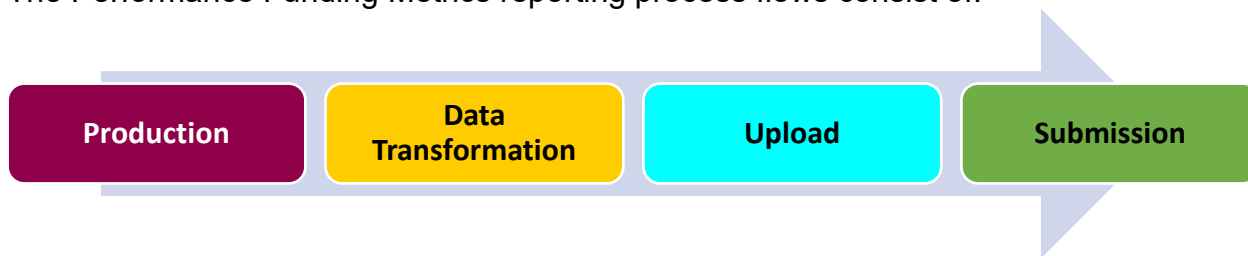
- Faculty Perception of Administrators, formerly Faculty Assessment of Administrator System
- Assisting with the online system used to credential faculty
- Academic Program Inventory
- Assignment of Classification of Instructional Program codes to courses and certificate programs

IR has been the official source of FIU's statistics, providing statistical information to support decision-making processes within all academic and administrative units at FIU, and preparing reports and files for submission to the BOG and other agencies. It is also responsible for data administration, enrollment planning, and strategic planning.

The Office of Retention & Graduation Success identifies barriers to student success and works to eliminate those barriers. This Office helps to carry out the Graduation Success Initiative, primarily by providing "Major Maps" and alerts for students and academic advisors, and information and analyses to departments and decision-makers.

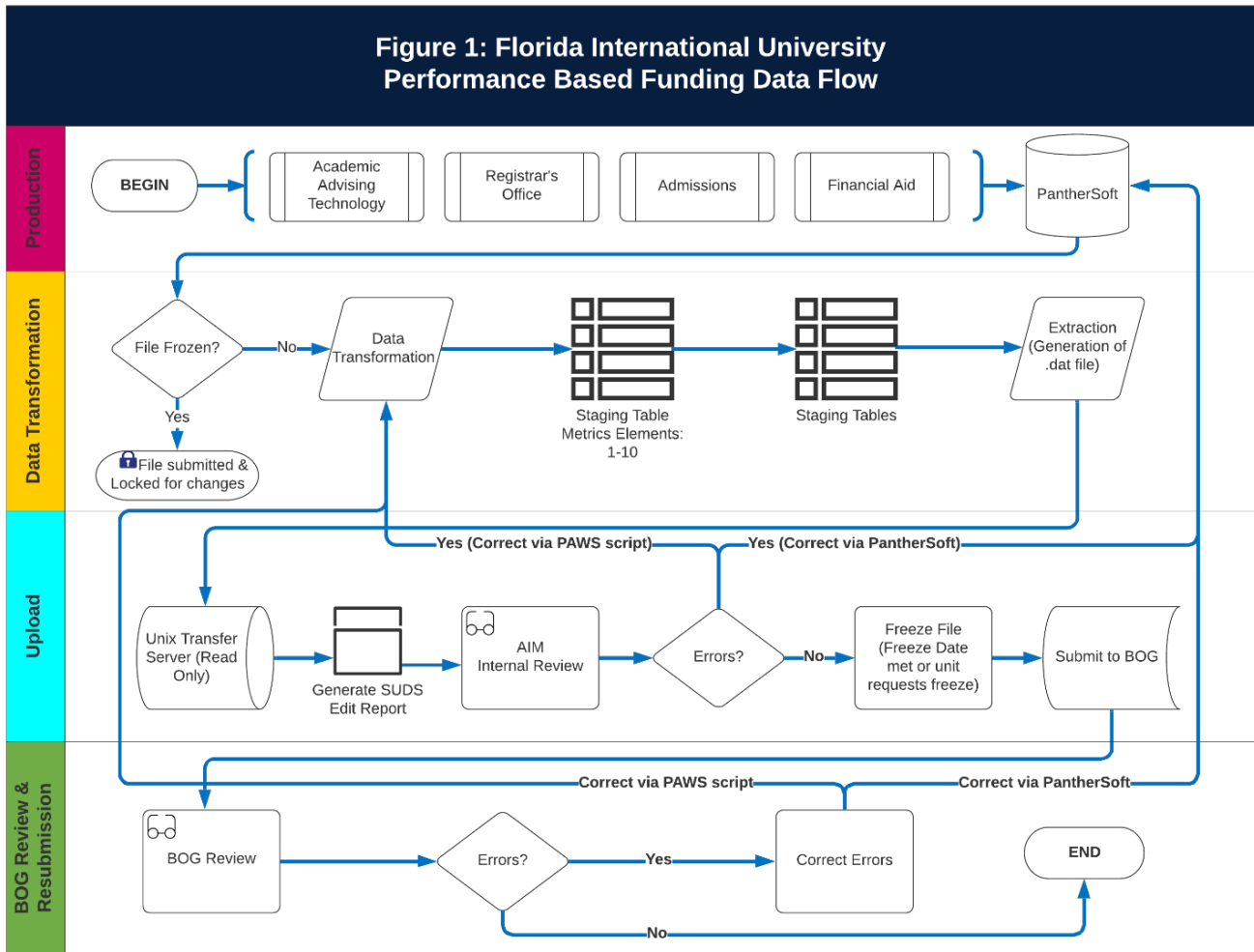
The Associate Vice President of AIM, who is also the University's Data Administrator, reports directly to the Provost and is responsible for gathering data from all applicable units, preparing the data to meet BOG data definitions and requirements, and submitting the data.

The Performance Funding Metrics reporting process flows consist of:



AIM and the Division of PantherSoft Technology work collaboratively to translate the production data, which is sent to staging tables, where dedicated developers perform data element calculations that are based on BOG guidelines and definitions. Once the calculations are completed, the data is formatted into text files and moved to an Upload folder. Users then log into SUDS and depending on their roles, they either upload, validate, or submit the data to the BOG. The PantherSoft Technology team assists with the entire consolidation and upload process.

The figure below illustrates how data is captured, analyzed, stored, and distributed to the BOG through SUDS and the information system controls in place.



OVERALL ASSESSMENT OF INTERNAL CONTROLS

Our overall assessment of internal controls is presented in the table below.

INTERNAL CONTROLS ASSESSMENT			
CRITERIA	SATISFACTORY	OPPORTUNITIES TO IMPROVE	INADEQUATE
Process Controls	X		
Policy & Procedures Compliance	X		
Effect	X		
Information Risk	X		
External Risk	X		
INTERNAL CONTROLS LEGEND			
CRITERIA	SATISFACTORY	OPPORTUNITIES TO IMPROVE	INADEQUATE
Process Controls: Activities established mainly through policies and procedures to ensure that risks are mitigated, and objectives are achieved.	Effective	Opportunities exist to improve effectiveness	Do not exist or are not reliable
Policy & Procedures Compliance: The degree of compliance with process controls – policies and procedures.	Non-compliance issues are minor	Non-compliance issues may be systematic	Non-compliance issues are pervasive, significant, or have severe consequences
Effect: The potential negative impact to the operations- financial, reputational, social, etc.	Not likely to impact operations or program outcomes	Impact on outcomes contained	Negative impact on outcomes
Information Risk: The risk that information upon which a business decision is made is inaccurate.	Information systems are reliable	Data systems are mostly accurate but need to be improved	Systems produce incomplete or inaccurate data which may cause inappropriate financial and operational decisions
External Risk: Risks arising from events outside of the organization's control; e.g., political, legal, social, cybersecurity, economic, environment, etc.	None or low	Potential for damage	Severe risk of damage

OBSERVATIONS AND RECOMMENDATIONS

The areas tested during the audit and our observations and recommendations are detailed below.

Areas Within the Scope of the Audit Tested Without Exception:

Data Accuracy Testing - Performance Based Funding Metrics

This is our eighth audit of the Performance Based Funding Metrics since it became effective in 2014. During our first-year audit, we performed data accuracy testing on all 10 metrics as requested by the BOG. In subsequent years' audits, since internal controls have always been deemed satisfactory, we have limited our data accuracy testing to specific metrics and followed up on any prior year recommendations. Our choice of metrics to audit was based on different factors: audit risk, changes to the metric, and the time elapsed since the metric was last audited. Prior to this audit, we have audited each of the 10 metrics at least twice, with metrics 4 through 10 three or more times. Depicted in the following table are the metrics audited by year.

AUDIT COVERAGE OF PBF METRICS			
Audit FY		Metrics Tested	Comment
1.	2014-15	1-10	First year; test of all metrics required by BOG
2.	2015-16	6, 7, 8, & 10	
3.	2016-17	1, 2, 4, & 5	
4.	2017-18	3 & 9	First year of the revised Metric 3
5.	2018-19	4 & 5	First year of the revised Metric 4
6.	2019-20	7 & 10	
7.	2020-21	6, 8, & 9	
8.	2021-22	4, 5, 9, & 10	First year of the revised Metrics 9 and 10

While there were no prior year audit findings stemming from our data accuracy testing, for this year's audit, we determined to test Metrics 4, 5, 9, and 10. Metrics 4 and 5 were last audited in 2018-19 and had increases in the improvement scores from the prior year, and Metrics 9 and 10 were newly implemented during the audit period.

The four PBF metrics tested were as follows:

- Metric 4 – Four-Year FTIC Graduation Rate
- Metric 5 – Academic Progress Rate (2nd Year Retention with GPA Above 2.0)
- Metric 9a – Two-Year Graduation Rate for Florida College System Associate in Arts Transfer Students
- Metric 9b – Six-Year Graduation Rate for Students who are Awarded a Pell Grant in their First Year
- Metric 10 – Board of Trustees' Choice – Number of Post-Doctoral Appointees

We identified the main data files and tables related to the calculations of the four PBF metrics under review, as follows:

- Student Instruction File (SIF), Enrollments Table
- Degrees Awarded File (SIFD), Degrees Awarded Table
- Retention File (RET), Retention Cohort Changes Table
- Student Financial Aid File (SFA), Financial Aid Awards Table

Management provided us with the in-scope data elements for each of the metrics subject to our audit testing (see Appendix I – In-scope BOG Data Elements on page 24).

We tested the accuracy of the data used for the four metrics by reviewing the corresponding data files, tables, and elements, and tracing them to the source data in PantherSoft. We limited our testing to the PantherSoft data as the objective of our testing was to validate that the data submitted was unabridged and identical to the data contained in PantherSoft, the University's system of record.

Metrics 4, 5, 9a, and 9b

The data for Metrics 4, 5 and 9 is generated by the BOG from the SIF, SIFD, RET, and SFA files submitted by the University. Additionally, the BOG also generates data from the SFA file for Metric 9.

Metric 4, Four-Year FTIC Graduation Rate, is based on the percentage of first-time-in-college (FTIC) students who started in the fall (or summer continuing to fall) term and were enrolled full-time in their first semester and had graduated from the same institution by the summer term of their fourth year. FTIC includes 'early admit' students who were admitted as a degree-seeking student prior to high school graduation. Students who were enrolled in advanced graduate programs during their 4th year were excluded.

Metric 5, Academic Progress Rate (2nd Year Retention with GPA Above 2.0), is based on the percentage of first-time-in-college (FTIC) students who started in the fall (or summer continuing to fall) term and were enrolled full-time in their first semester and were still enrolled in the same institution during the next Fall term with a grade point average (GPA) of at least 2.0 at the end of their first year (fall, spring, summer).

In November 2020, Metric 9 was changed from BOG Choice - Percent of Bachelor's Degrees without Excess Hours, into a two-part metric to the performance based funding model: 9a) Two-Year Graduation Rate for FCS Associate in Arts Transfer Students and 9b) Six-Year Graduation Rate for Students who are Awarded a Pell Grant in their First Year.

Metric 9a, Two-Year Graduation Rate for Florida College System (FCS) Associate in Arts Transfer Students, The transfer cohort is defined as undergraduates entering in fall term (or summer continuing to fall) from the Florida College System with an Associate in Arts (AA) degree. The rate is the percentage of the initial cohort that has either graduated from the same institution by the summer term of their second academic year. Full-time students are used in the calculation. Students who were flagged as enrolled in advanced graduate programs that would not earn a bachelor's degree were not excluded.

Metric 9b, Six-Year Graduation Rate for Students who are Awarded a Pell Grant in their First Year, This metric is based on the percentage of students who started in the fall (or summer continuing to Fall) term and were enrolled full-time in their first semester and who received a Pell Grant during their first year and who graduated from the same institution by the summer term of their sixth year. Students who were flagged as enrolled in advanced graduate programs that would not earn a bachelor's degree were excluded.

To verify that the data in the SIF file submitted to the BOG was accurate, we judgmentally selected a sample of 40 students from the summer 2020 Enrollment Table (20 of the students were selected based on the students' FTIC status and the remainder were selected at random) and verified that the data submitted to the BOG agrees to the data found in the students' records in the PantherSoft System. We verified the nine elements relevant to Metrics 4, 5, and 9 and found no exceptions.

Likewise, to verify the data submitted in the SIFD file, we judgmentally selected a sample of 30 students for testing from the summer 2020 Degrees Awarded Table. We verified without exception the information related to the one element related to Metrics 4, 5, and 9. As evidenced by the supporting documentation, all students had received their degree in summer 2020, as reported in the summer 2020 SIFD file.

To verify the data submitted in the RET file, we judgmentally selected a sample of 30 students from the Annual 2020-2021 Retention Cohort Changes Table. We reviewed the supporting documentation related to the four relevant elements and verified that the data provided to the BOG agreed to the data in PantherSoft. No exceptions were found.

In addition to the files noted above, Metric 9 uses the SFA file in the metric's methodology. To verify that the data submitted in the SFA file is accurate, we selected a sample of 30 students from the 2019-2020 Financial Aid Award Table and verified that the data provided to the BOG was the same as the data contained in PantherSoft. We verified the data in the relevant three elements and agreed it to the information in PantherSoft and found no exceptions.

Conclusion

Our testing of the SIF, SIFD, RET, and SFA files found no differences between the information submitted to the BOG and the data contained in the PantherSoft system as it relates to the elements that are relevant to Metrics 4, 5, and 9.

Metric 10 – Board of Trustees’ Choice - Number of Post-Doctoral Appointees

The data for Metric 10 is the number of post-doctoral appointees awarded annually.

Metric 10, Number of Post-Doctoral Appointees, this data is based on National Science Foundation/National Institutes of Health Survey of Graduate Students and Post-doctorates in Science and Engineering.

We performed a review of the list of post-doctoral appointees for fall 2019 during our review of emerging preeminent metrics on page 15 and found no exceptions.

Conclusion

Our testing of the post-doctoral appointees found the data reported to be accurate and consistent between the information submitted to the BOG and the data in PantherSoft.

Data Accuracy Testing - Emerging Preeminent Metrics

In 2021, the University achieved nine of the 12 Preeminence metrics, earning it Emerging Preeminent designation. We selected three of the nine metrics met for testing as follows:

- Metric 3 – Freshman Retention Rate
- Metric 6 – Total Annual Research Expenditures
- Metric 11 – Number of Post-Doctoral Appointees

In October 2020, the BOG issued the *Preeminent Metrics Methodology Document*, which we used in our testing.

We tested the accuracy of the data used for the three metrics by obtaining the respective University files and reviewing them against the data provided to the respective organizations associated with each metric, that is, the National Science Foundation (NSF) and National Academy of Sciences, Engineering, and Medicine. In addition, where applicable, we agreed the information to the data in PantherSoft.

Metric 3 – Freshman Retention Rate

Freshman Retention Rate (full-time, FTIC) cohorts are based on first-year undergraduate students who enter the institution in the fall term (or summer term and continue into the fall term). Percent retained is based on those who are enrolled during the second fall term.

The BOG calculated the University had a retention rate of 91%. To test the accuracy of the rate, we identified the six SUDS elements related to the preeminent metric. Our testing found no exceptions.

Metric 6 – Total Annual Research Expenditures

Total annual Science & Engineering research expenditures, including federal research expenditures, of \$200 million or more.

Once a year, the Office of Data & Analytics (ODA) staff analyzes each institution's response to the National Science Foundation's annual Higher Education Research and Development survey that is submitted to the BOG office via the Data Request System. ODA staff calculate the total expenditures for science and engineering disciplines by summing the total federal and non-federal expenditures and then subtracting all federal and non-federal expenditures for non-science and engineering disciplines. The results of ODA's research are reviewed and approved by Institutional Data Administrators before being included in the Accountability Plans.

To test the accuracy of the data related to research expenditures for science and engineering, we reconciled the research expenditures data received from ODA to the data reported by the NSF, without exception. The NSF website reported research expenditures totaling \$210 million. We further grouped the data by cost center and tested all expenditures, totaling \$16,339,075, from 25 cost centers selected, to ensure the expenditure were: (1) related to research, (2) related to the science or engineering

disciplines, and (3) in agreement with the amount reported in PantherSoft Financials. The results of our testing found no exceptions.

Metric 11 - Number of Post-Doctoral Appointees

Two hundred or more post-doctoral appointees annually.

Once a year, the Office of Data & Analytics staff reviews the NSF summary reports for each institution's response to the National Science Foundation/National Institutes of Health annual Survey of Graduate Students and Post-Doctorates in Science and Engineering. The NSF summary reports rank institutions by the total number of post-doctoral appointees in science, engineering, and health fields. For this preeminent metric, rank does not matter, only the total post-doctoral count is relevant. The results of the ODA's research are reviewed and approved by Institutional Data Administrators before being included in the Accountability Plans.

To test the accuracy of the data related to post-doctoral appointees, we obtained the listing of post-doctoral appointees for fall 2019, totaling 260. From the listing, we selected 20 appointees to determine if the post-doctoral appointee worked in the science, engineering, or health fields; had received their doctorate degree within the last five to seven years; had only a limited appointment, generally no more than five to seven years; and the data agreed with the information obtained from the PantherSoft Human Resources database for fall 2019. We found no exceptions.

Conclusion

Our testing of the Emerging Preeminent metrics found the data reported to be accurate and consistent with the definitions and methodology as outlined in the BOG's *Preeminent Metrics Methodology Document*.

Data File Submissions and Resubmissions

Data File Submissions

To ensure the timely submission of data, AIM used the due date schedule provided by the BOG in SUDS to keep track of the files due for submission and their due dates. AIM also maintains a schedule for each of the files to be submitted, which includes meeting dates with the functional unit leads, file freeze date, file due date, and actions (deliverables) for each date on the schedule. We used data received directly from the BOG Office in addition to data provided by AIM to review the timeliness of actual submittals.

The following table reflects the original due dates and original submission dates of all relevant Performance Based Funding Metrics files during the audit period. All files were submitted by the BOG due date:

	File	Period	Original Due Date	Original Submission Date
ADM	Admissions	Summer 2020	09/11/20	09/11/20
SIF	Student Instruction	Summer 2020	09/25/20	09/25/20
SIFD	Degrees Awarded	Summer 2020	10/02/20	10/01/20
ADM	Admissions	Fall 2020	10/12/20	10/12/20
SFA	Student Financial Aid	Annual 2020	10/16/20	10/14/20
SIFP	Student Instruction Preliminary	Fall 2020	10/19/20	10/19/20
EA	Expenditure Analysis	Annual 2020	11/02/20	10/30/20
HTD	Hours to Degree	Annual 2020	11/13/20	11/13/20
SIF	Student Instruction	Fall 2020	01/15/21	01/15/21
SIFD	Degrees Awarded	Fall 2020	01/25/21	01/25/21
RET	Retention*	Annual 2020	01/29/21	01/28/21
ADM	Admissions	Spring 2021	03/01/21	03/01/21
SIF	Student Instruction	Spring 2021	06/11/21	06/11/21
SIFD	Degrees Awarded	Spring 2021	06/25/21	06/25/21

* The indicated file was subsequently resubmitted and is reviewed below.

Data File Resubmissions

To determine the frequency of the resubmissions, we reviewed a list provided by the BOG staff for all files submitted pertaining to the 10 PBF metrics. The University submitted 14 files with due dates between September 1, 2020, and August 31, 2021, of which one file required resubmission.

In the one instance observed, the BOG staff requested the resubmission of the RET File by reopening the SUDS system for resubmission. Furthermore, resubmissions decreased from five to one since the last audit issued in fiscal year 2020/2021.

The Data Administrator has acknowledged that although their goal is to prevent any resubmissions, they are needed in cases where inconsistencies in data are detected by either University or BOG staff after the file has been submitted. According to the Data Administrator, a common reason for not detecting an error before submission is that some inconsistencies only arise when the data is cross validated among multiple files, which can only be accomplished by the BOG.

Conclusion

Our review disclosed that the process used by the Data Administrator provides reasonable assurance that complete, accurate, and timely submissions occurred. The only resubmission required was due to an error on the BOG's part. We noted no reportable material weaknesses or significant control deficiencies related to data file submissions or resubmissions.

Review of University Initiatives

We obtained the following list of the University initiatives that are meant to bring the University's operations and practices in line with SUS Strategic Plan goals to determine if any initiatives were made to purposely inflate performance goals.

- Implemented Educational and General revenue reallocation model
- Implemented faculty reallocation model for academic units
- Provided greater access to on-demand analytics relevant to the metrics
- Implemented student level graduation benchmarking
- Implemented student attendance and midterm progress monitoring and outreach
- Integration of career and academic advising
- Strategic enrollment planning via Noel Levitz
- Created an Office of Scholarships and Academic Program Partners to support all colleges in their efforts to apply foundation scholarship funds to student success and enrollment goals
- Expanded merit scholarship opportunities and initiated two new scholarships – “Jumpstart FIU” and “Panther Achievement Award”
- Implemented centralized coordination and local deployment for student recruitment efforts
- Established centralized retention, graduation, and student success outreach
- Implemented graduation and retention predictive models
- Working with EduNav and FIU's Business Intelligence team to replicate what Ad Astra was not able to produce regarding course scheduling optimization.

Conclusion

Our review disclosed that none of the initiatives provided appear to have been made for the purposes of artificially inflating performance goals.

Areas Within the Scope of the Audit Tested With Exception:

1. Data Systems Design and Controls

Selected Access Controls Review

AIM performed an annual review, in collaboration with the functional areas and the PantherSoft Security Team to assess functional unit personnel access to critical data. The annual review included examination of user privileges within the SUDS and PantherSoft applications and examination of audit log files and production data. The objectives of the annual review are to:

- evaluate user accounts to ensure onboarded and offboarded SUDS users have an associated PAWS² ticket and the existing users' access match their current job description;
- reduce access privileges to the PantherSoft production environment to appropriately mitigate least privilege and segregation of duties risks; and
- examine log reporting for all metric data files, where appropriate, to ensure the integrity of the data submitted to the BOG.

We obtained updated copies of the *AIM-BOG Business Process Manual* and *Annual AIM Review*. We interviewed key personnel and performed sample testing in our analysis and determined that the review performed was adequate and ensured proper controls.

a) SUDS Onboarding and Offboarding

A user's supervisor or functional unit lead is responsible for notifying the security manager when an employee no longer requires SUDS access. This is done through the creation of a PAWS ticket. Also, during the annual user access review, AIM investigates changes in employment status, and if appropriate, the AIM Data Analyst initiates PAWS tickets to add, change, or remove users with access to SUDS.

b) PantherSoft Access Control

AIM performs a review of PantherSoft least privilege and segregation of duties on an annual basis. AIM uses a list of users with write access to PantherSoft and checks on write access to fields that are subsequently used for data submitted to the BOG. The list of users was gathered in 2017 and has been carried over for all annual reviews. The list currently consists of 71 users and is updated periodically, though the methodology used to update the list is ineffective. As a result, if a user account with existing access was omitted from the list, that user access would not be included in the annual review. AIM mentioned that as a compensating control, a PantherSoft query runs daily to notify AIM of any changes to the Human

² Ticketing system used to submit access requests.

Resources (HR) status of an employee with access to the PantherSoft fields. However, the query is configured to search for changes in HR status of the same 71 users and would fail to identify any other users. The failure to obtain a full population of users with write access to the PantherSoft fields used for data for BOG submission could lead to an ineffective review process allowing users to have access to data which could impact the integrity of data submitted to the BOG. To ensure all relevant employees are captured, the PantherSoft Security Team recommends that AIM identifies the most critical fields in PantherSoft Campus Solutions related to the data submitted to BOG. The Security Team would then be able to identify all relevant roles and a query could be performed to gather those users at any given point in time.

c) PantherSoft Audit Logs

Audit log capabilities in the PantherSoft production environment, as appropriate, increases the effectiveness of detection controls to help the data administrator mitigate the risks of least privilege access, lack of segregation of duties, and unauthorized activities.

Our testing confirmed that the PantherSoft Security Team has developed queries that allow functional unit leads and AIM to identify actions that have been taken on relevant fields included in the *PantherSoft to BOG Mapping of Elements* document. Any field that has the audit flag enabled will be captured in a log. The audit logs are separate tables in PantherSoft that cannot be modified. Any actions taken by a user on an audited field (e.g., logging into the system) is recorded. The actions taken by a user can be reviewed by either the functional unit or the AIM team. Thus, the functional units are responsible for the integrity of data entered in PantherSoft. Similarly, the PantherSoft Security Team is responsible for ensuring the integrity of the audit logs.

A review of the *PantherSoft to BOG Mapping of Elements* document for metrics 4, 5, and 9 was performed and 27 unique PantherSoft fields were identified. Of the 27 fields, nine fields are currently being audited, while five additional fields that could potentially be audited were not. The remaining 13 fields cannot be audited due to performance issues.

In addition, we found the document containing the *PantherSoft to BOG Mapping of Elements* was last updated in 2014. It is important to keep the mapping updated to ensure that if any new PantherSoft fields are added, they are accounted for in AIM's review and all auditable fields are enabled.

Change Management Controls

To understand the process for ensuring complete and accurate submissions, we reviewed controls in place for changes to the code used to generate BOG files. We observed that PantherSoft has change management controls in place for the modification of code used to generate files submitted to the BOG. A BOG module within a PantherSoft owned system called PAWS allows PantherSoft Developers, Acceptance Testers, and PantherSoft Database Administrators to collaborate to

conduct development, testing, and approval functions in the TESTING and STAGING environments prior to the migration of code to the PRODUCTION environment.

We obtained all three PAWS Change Requests for changes to the code for any fields related to metrics 4, 5, and 9 during the audit period. We reviewed the supporting documentation for the changes made and found management has an effective change management process in place to manage the modification of code used to generate BOG metric files.

In addition, we reviewed PAWS Access Controls. Of the list of 43 users with access to the PAWS BOG module, 34 employees had access to perform acceptance testing, which allows them to validate the changes made by the programmers. Of those 34 employees, 10 were no longer employed by the University and an additional 15 were found to no longer need access. The accounts were subsequently removed by the PantherSoft Database Administration Team. Management informed us that the departments must contact the PantherSoft Database Administration Team to notify them when user account must be terminated. We also learned that PAWS leverages FIU's single sign-on user authentication scheme, which allows employees to use their FIU credentials to login to the system. Even if PantherSoft is not contacted regarding a terminated employee, the user accounts could not access PAWS as most functions of the FIU accounts are disabled by the University upon employee termination. However, this may not apply to employees that transfer across departments as their FIU accounts would remain active, allowing them to retain access to PAWS.

The remaining 9 of the 43 users had technical roles including approver, developer, and database administrator privileges. Those employees were confirmed to be active employees with appropriate access.

Recommendations

The Office of Analysis and Information Management should:	
1.1	Perform a review of access controls based on critical roles in PantherSoft Campus Solutions.
1.2	Update the <i>PantherSoft to BOG Mapping of Elements</i> document to determine completeness, collaborate with the PantherSoft Security Team to reevaluate which of the identified fields can be audited, and ensure all auditable fields are enabled.
The PantherSoft Database Administration Team should:	
1.3	Create a formal process for disabling accounts no longer requiring access to the PAWS BOG module and routinely verify access.

Management Response/Action Plan

- 1.1 AIM has agreed to perform the following steps:
1. Review PS fields required for BOG elements.
 2. Update list of elements to be tracked.
 3. Generate list of users with edit access to those elements.
 4. Run query from above list of users to determine their PS role.
 5. Cross reference the list with PS HR to determine whether their job function requires them to access these fields.
 6. Review access privileges and remove or reduce privileges as needed.

Implementation date: 3

Complexity rating: August 1, 2022

- 1.2 AIM has agreed to perform the following steps:
1. Review PS fields required for BOG elements.
 2. Update list of elements to track in PS.
 3. Determine which of the fields have audit capabilities.
 4. Enable audit for all fields that can be audited without causing performance issues.
 5. Review access privileges and remove or reduce as needed.

Implementation date: 3

Complexity rating: September 1, 2022

- 1.3 The PantherSoft Team (PS Team) will:
1. Automate the removal of access from PAWS for any employee/user that is terminated and/or transfers to a different department (requires integration from with HR system)
 2. Attempt to secure the PAWS BOG module by only those users that need it (may require development)
 3. Generate a yearly report with all users associated with PAWS BOG module and provide to PS development lead and AIM functional lead (will require development of process and report)

Implementation date: 3

Complexity rating: September 1, 2022

2. Preeminent Metrics Methodology

During the review of Preeminent Metric 11, Number of Post-doctoral Appointees, we noted that the criteria used to define post-doctorates were not defined. The BOG's guidelines state that universities should use their definition of post-doctorate as this varies by institution. Although there is a process in place, it has not been formally documented.

AIM maintains the *AIM-BOG Business Process Manual*, which details the department's internal policies and procedures, including the processes for generating the files submitted to the BOG to be used in the calculation of the performance-based metrics. Our review disclosed that the Manual does not include policies and procedures pertaining to preeminent metrics and those responsible for gathering the information used in calculating these metrics.

A manual provides direction to new personnel, is a ready reference source for all employees, clarifies roles and responsibilities, and helps assure consistent application of management's expectations. Updating the manual would serve as a valuable guide in cases of employee substitution and/or turnover.

Recommendation

The Office of Analysis and Information Management should:
2.1 Update the <i>AIM-BOG Business Process Manual</i> to include policies and procedures related to preeminent metrics.

Management Response/Action Plan

- 2.1 AIM has agreed to perform the following steps:
1. Review the documentation for all 12 Preeminence metrics.
 2. Update the process manual with relevant best practices for these metrics.

Implementation date: 3

Complexity rating: August 1, 2022



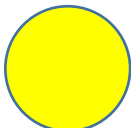



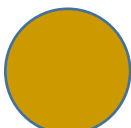
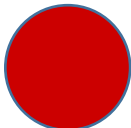

APPENDIX I – IN-SCOPE BOG DATA ELEMENTS

No.	Metric	Definition	Submission/Table/Element Information	Relevant Submission
4	Four-Year FTIC Graduation Rate	This metric is based on the percentage of first-time-in-college (FTIC) students who started in the fall (or summer continuing to fall) term and were enrolled full-time in their first semester and had graduated from the same institution by the summer term of their fourth year. FTIC includes 'early admit' students who were admitted as a degree-seeking student prior to high school graduation. Students who were enrolled in advanced graduate programs during their 4th year were excluded.	Submission: SIFD Table: Degrees Awarded Elements: 02001 – Reporting Time Frame	Summer 2020 Fall 2020 Spring 2021
			Submission: SIF Table: Enrollments Elements: 01063 – Current Term Course Load 01060 – Student Classification Level 01112 – Degree Highest Held 01107 – Fee Classification Kind 01420 – Date of Most Recent Admission 01413 – Type of Student at Time of Most Recent Admission 01411 – Institution Granting Highest Degree	Summer 2020 Fall 2020 Spring 2021
			Submission: RET Table: Retention Cohort Changes Elements: 01429 – Cohort Type 01433 – Full-Time/Part-Time Indicator 01437 – Student Right to Know (SRK) Flag 01442 – Cohort Adjustment Flag	Annual 2020-2021
5	Academic Progress Rate 2nd Year Retention with GPA Above 2.0	This metric is based on the percentage of first-time-in-college (FTIC) students who started in the fall (or summer continuing to fall) term and were enrolled full-time in their first semester and were still enrolled in the same institution during the next fall term with a grade point average (GPA) of at least 2.0 at the end of their first year (fall, spring, summer).	Same as No. 4 above. Additionally includes the following: Submission: SIF Table: Enrollments Elements: 01085 – Institutional Hours for GPA 01086 – Total Institutional Grade Points	Summer 2020 Fall 2020 Spring 2021 Annual 2020-2021
9a.	Two-Year Graduation Rate for FCS Associate in Arts Transfer Students	This transfer cohort is defined as undergraduates entering in fall term (or summer continuing to fall) from the Florida College System with an Associate in Arts (AA) degree. The rate is the percentage of the initial cohort that has either graduated from the same institution by the summer term of their second academic year. Full-time students are used in the calculation. Students who were flagged as enrolled in advanced graduate programs that would not earn a bachelor's degree were not excluded.	Same as No. 4 above. Beginning Fiscal Year 2021-2022	Summer 2020 Fall 2020 Spring 2021 Annual 2020-2021

No.	Metric	Definition	Submission/Table/Element Information	Relevant Submission
9b.	Six-Year Graduation Rate for Students who are Awarded a Pell Grant in their First Year	This metric is based on the percentage of students who started in the fall (or summer continuing to fall) term and were enrolled full-time in their first semester and who received a Pell Grant during their first year and who graduated from the same institution by the summer term of their sixth year. Students who were flagged as enrolled in advanced graduate programs that would not earn a bachelor's degree were excluded.	Same as No. 4 above. Additionally includes the following: Submission: SFA Table: Financial Aid Awards Elements: 01045 – Reporting Institution 02040 – Award Payment Term 01253 – Financial Aid Award Program Identifier Beginning Fiscal Year 2021-2022	Summer 2019 Fall 2019 Spring 2020 Annual 2020-2021 Annual 2019-2020 Annual 2020- 2021
10	Number of Post-Doctoral Appointees	The number of post-doctoral appointees awarded annually. This data is based on National Science Foundation/National Institutes of Health Survey of Graduate Students and post-doctorates in Science and Engineering.	Survey of Graduate Students and post-doctorates in Science and Engineering (Not a BOG file Submission)	Fall 2020

Definition Source: State University Database System (SUDS).

APPENDIX II – COMPLEXITY RATINGS LEGEND

Legend: Estimated Time of Completion		Legend: Complexity of Corrective Action	
	Estimated completion date of less than 30 days.		Routine: Corrective action is believed to be uncomplicated, requiring modest adjustment to a process or practice.
	Estimated completion date between 30 to 90 days.		Moderate: Corrective action is believed to be more than routine. Actions involved are more than normal and might involve the development of policies and procedures.
	Estimated completion date between 91 to 180 days.		Complex: Corrective action is believed to be intricate. The solution might require an involved, complicated, and interconnected process stretching across multiple units and/or functions; may necessitate building new infrastructures or materially modifying existing ones.
	Estimated completion date between 181 to 360 days.		
	Estimated completion date of more than 360 days.		Exceptional: Corrective action is believed to be complex, as well as having extraordinary budgetary and operational challenges.

*The first rating symbol reflects the initial assessment based on the implementation date reported by Management, while the second rating symbol reflects the current assessment based on existing conditions and auditor's judgment.

APPENDIX III – OIA CONTACT AND STAFF ACKNOWLEDGMENT:

OIA contact:

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Contributors to the report:

In addition to the contact named above, the following staff contributed to this audit in the designated roles:

Stephanie Price (auditor in-charge);
Henley Louis-Pierre (IT auditor in-charge);
Vivian Gonzalez (supervisor and reviewer); and
Manuel Sanchez (independent reviewer).

Definition of Internal Auditing

Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.