



MEMORANDUM

TO: Dr. Ralph Wilcox, Provost & Executive Vice President of Academic Affairs
Dr. Terry Chisolm, Vice Provost for Strategic Planning, Performance & Accountability

FROM: Debra S. Gula, CPA 
Executive Director

DATE: February 27, 2015

SUBJECT: 15-010 Performance Based Funding Data Integrity Audit

University Audit and Compliance performed an audit of the university's processes and internal controls which ensure the completeness, accuracy, and timeliness of data submissions to the Board of Governors (BOG), which are relied upon by the board in preparing the measures used in the performance-based funding process. This audit will also provide an objective basis of support for the President and Board of Trustees Chair to sign the representations included in the Performance-Based Funding Data Integrity Certification to be filed with the BOG by March 1, 2015. This project is part of the approved UAC 2014-15 Work Plan.

Measures One through Nine were based on data submitted through the State University Database System (SUDS) utilizing a state-wide data submission process for BOG files.

Measure Ten was based on data submitted to the National Science Foundation/National Institutes of Health through their annual Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS). This data is published annually by The National Center for Science and Engineering Statistics.

UAC's overall conclusion was that there was an adequate system of internal controls in place to meet our audit objectives, assuming corrective actions are taken timely to address the five medium-priority risks communicated separately in our management letter. As of the date of this report, all five issues have been resolved. Management's responses are included with the Management Letter.

None of the issues identified for management attention were found to have increased or decreased the achievement score of the USF System within the Board of Governors performance based funding model.

OVERALL CONCLUSION	
<input type="checkbox"/> Adequate System of Internal Control	Findings indicate that, as a whole, controls are adequate. Identified risks, if any, were low-priority requiring timely management attention within 90 days.
<input checked="" type="checkbox"/> Adequate System of Internal Control – with reservations	Medium-priority risks are present requiring urgent management attention within 60 days.
<input type="checkbox"/> Inadequate System of Internal Control	High-priority risks are present requiring immediate management attention within 30 days.

We received outstanding cooperation throughout this audit. Please contact us at 974-2705 if you have any questions.

cc: President Judy Genshaft, USF System
 Chair Hal Mullis, USF Board of Trustees
 John Long, Sr. VP, Business and Finance and Chief Operating Officer
 Dr. Charles Lockwood, Sr. VP, USF Health
 Dr. Paul Sanberg, Sr. VP, Research, Innovation & Economic Development
 Dr. Sophia Wisniewska, Regional Chancellor, USF St. Petersburg
 Dr. Sandra Stone, Regional Chancellor, USF Sarasota-Manatee
 Nick Trivunovich, Vice President, Business and Finance and CFO
 Sidney Fernandes, Vice President & CIO, Information Technology

SCOPE AND OBJECTIVES

Our audit focused on the processes and internal controls established by the University of South Florida System as of September 30, 2014, to ensure the completeness, accuracy, and timeliness of data submissions to the Board of Governors (BOG) which support the Performance-Based Funding (PBF) measures.

The primary objectives of our audit were to:

- Determine whether the processes and internal controls established by the university ensure the completeness, accuracy, and timeliness of data submissions to the BOG which support the PBF measures.
- Provide an objective basis of support for the President and Board of Trustees Chair to sign the representations included in the Performance-Based Funding - Data Integrity Certification which will be submitted to the Board of Trustees and filed with the BOG by March 1, 2015.

While a uniform work plan was not prescribed, the BOG requested that, at a minimum, our audit include a review of the following:

1. The appointment of the Data Administrator by the university president and that duties related to these responsibilities are incorporated into the Data Administrator's official position description.
2. The processes used by the Data Administrator to ensure the completeness, accuracy and timely submission of data to the Board of Governors.
3. Any available documentation including policies, procedures, desk manuals of appropriate staff and to assess their adequacy for ensuring data integrity for university data submissions to the Board of Governors.
4. System access controls and user privileges to evaluate if they are properly assigned and periodically reviewed to ensure only those authorized to make data changes do so.
5. Testing of data accuracy through tracing sampled items to source documents.
6. The veracity of the university Data Administrator's data submission statements that indicate, "I certify that this file/data represents the position of this University for the term being reported."
7. The consistency of data submissions with the data definitions and guidance provided by the Board of Governors through the Data Committee and communications from data workshops.
8. The university Data Administrator's data resubmissions to the Board of Governors with a view toward ensuring these resubmissions are both necessary and authorized. This review should also evaluate how to minimize the need for data resubmissions.

UAC followed its standard risk assessment, audit program, and reporting protocols, taking into account the eight minimum audit guidelines above.

PROCEDURES PERFORMED

We followed a disciplined, systematic approach using the *International Standards for the Professional Practice of Internal Auditing*. 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 and COBIT Control Frameworks were used to assess control structure effectiveness.

Testing of the control processes was performed on the most recent data file submissions as of September 30, 2014, unless a more recent submission was more representative of the control structure in place on September 30, 2014. Our testing focused on the tables and data elements in the files which are utilized by the BOG to compute the performance measure. The BOG provided specific mapping of data submissions to the PBF measures. (See [Appendix A](#).)

In order to meet the BOG minimum audit guidelines, the following procedures were performed:

1. Reviewed the appointment of the Data Administrator by the President.
 - a. Reviewed job descriptions and interviewed the Data Administrator and Back-up Data Administrator to ensure the duties related to these responsibilities were incorporated into the Data Administrator's official position description and were consistent with BOG Regulation 3.007.
2. Reviewed the processes used by the Data Administrator, Sub-certifiers and Data Stewards to ensure the completeness, accuracy, and timely submission of data to the BOG. This review included:
 - a. Interviews with the Data Administrator, Back-up Data Administrator, Sub-certifier and primary Data Steward(s) assigned to the BOG submission.
 - b. A review of available documentation including policies and procedures, work instructions, functional specification documents, user manuals, and other training and guidance provided to Sub-certifiers and Data Stewards by USF.
 - c. A review of internal records, such as time management schedules and relevant correspondence with the BOG.
 - d. A review of the BOG file due dates, actual submission dates, and final acceptance.
 - e. A review of the process for timely and accurately addressing State University Database System (SUDS) data file error reports, including a review of the State University Database System (SUDS) Master File Submission Subsystem Basic User Guide.
3. Reviewed available documentation including policies, procedures, and desk manuals of appropriate staff and to assess their adequacy for ensuring data integrity for university data submissions to the BOG.
4. Reviewed system access controls and user privileges to evaluate if they are properly assigned and periodically reviewed to ensure only those authorized to make data changes can do so. The objective of this review was to ensure that access was appropriately limited to those with a business need and that appropriate password controls were in place. This included a review of access controls over:
 - a. The Application Manager solution used to automate the extraction of data from the primary systems of record (OASIS, DegreeWorks, GEMS, and FAST) and prepare the files for submission to the BOG.

- b. Server & databases used to store data submissions from the time they were extracted from the primary systems of record up until they were loaded into the SUDS.
 - c. The work load module of the Faculty Academic Information Reporting (FAIR) system, which is used to report instructional and research data contained in the IRD file.
 - d. The SUDS system which is used to load, validate, and submit data files to the BOG.
5. Performed detailed testing of BOG data to source system of records, as needed, to ensure data accuracy.
 - a. Tracing of sample transactions from the file to the system of record does not provide any additional assurance that the data is complete or accurate and was not performed for files created through the Application Manager process.
 - b. Compared postdoctoral appointments per GEMS to the postdoctoral appointments reported in the NSF GSS survey used for Measure Ten. Obtained confirmation from Moffitt Cancer Center of the affiliated postdoctoral appointments compensated by Moffitt.
 6. Reviewed the Executive review and Sub-certification process in place to ensure that the Data Administrator is able to certify with veracity that the BOG submission represented the position of the university for the term being reported.
 7. Reviewed procedures in place to ensure the consistency of data submissions with the data definitions and guidance provided by the BOG through the data committee and communications from data workshops. This review included:
 - a. A review of the BOG SUDS workshop proceedings for the June 2013 and June 2014 workshops.
 - b. Determining whether Sub-certifiers and/or Data Stewards attended the SUDS workshop and were provided adequate internal training to ensure data consistency.
 - c. For data elements used in the performance measures, verification that the most current data definitions are used as a basis for preparation of data to be submitted to the BOG by comparing the USF data definitions to the BOG data definitions.
 - d. Tests of change management controls in place over the Application Manager process to ensure that data derivations derived by the Application Manager jobs were consistent with the BOG data definitions.
 - e. Reviewed change management controls over the IRD files managed by the Office of Decision Support (ODS).
 8. Reviewed the Data Administrator's recent data resubmissions to the BOG to ensure these resubmissions were both necessary and authorized and evaluated how to minimize the need for data resubmissions.
 - a. The IRD File was resubmitted due to an error introduced during a Spring 2014 update to the process used to calculate Person-Years. As a result, UAC reviewed the IRD file processes in place used to generate the IRD file submission (including stored procedures) for reasonableness and consistency to BOG data definitions.

PRIOR UAC PROJECTS

UAC performed an internal review at the request of the Sr. Vice President and Chief Operating Officer to validate the 6-year graduation rate for full-time, first-time-in-college, degree-seeking students of the USF System for the 2006 and 2007 cohorts reported in 2011-2012 and 2012-2013. This review included detailed testing of the data elements used in this performance measure

contained in the Student Instructional File (SIF), Student Instructional File-Degree (SIFD), and Retention Cohort Change file. A report of our results was issued on April 3, 2014 (UAC 14-038).

All recommendations had been implemented as of the date of this report. None of the issues identified had a material impact on the performance measure.

BACKGROUND

USF SUB-CERTIFICATION/EXECUTIVE REVIEW PROCESS

- ✓ A formal Sub-certification and Executive Review process is in place to ensure that institutional data submitted to the BOG accurately reflects the data contained in the primary systems of record. Data Stewards, Sub-certifiers and Executive Reviewers who had operational and/or administrative responsibility for the institutional data are assigned key roles and responsibilities.

KEY ROLES AND RESPONSIBILITIES

Key Role	Performed By	Appointed By	Responsibilities
Institutional Data Administrator (DA)	Director of Business System Reengineering (BSR)	President	Responsible for certifying and managing the submission of data to the Board of Governors (BOG). Appointed by the President.
Back-Up Data Administrator	Associate Director of BSR	President	Responsible for managing and supporting BOG state reporting activities. The activities include, but are not limited to, file generation, certification, and executive review meeting oversight, submission, and resubmission for mandatory reports of the BOG.
Executive Reviewer	Executive level administrator	Data Administrator with approval of Provost and Chief Operating Officer	Responsible for reviewing and approving the file submission prior to requesting that the Data Administrator submit the file to the BOG. Role is assigned based on the area of responsibility in relationship to the data source.
Sub-certifier	A senior-level employee, responsible for the institutional data contained in a submission.	Executive Reviewer	Oversees the definition, management, control, integrity, and maintenance of institutional data. Responsible for coordinating the data collection process, monitoring the data to ensure current processing procedures are effective, and certifying the data represents facts based on accurate data from programs and offices.
Data Steward¹	An employee, who has administrative and/or operational responsibility over institutional data.	Sub-certifier	Responsible for ensuring that the data has been collected systematically, entered accurately, and reviewed by Sub-certifier, controlling data definitions to ensure consistent definitions over the life of the data and resolving discrepancies in information. Collaborates with other offices and programs responsible for producing data and information impacting the submission.

¹An enterprise application may have teams of data stewards, each responsible for varying functions.

In 2008, USF put a formal review process in place for all BOG file submissions which is managed by Business Systems Reengineering (BSR). This process ensures that each submission has been assigned to at least one Sub-certifier who is responsible for the data contained in the submission and who must certify the data accurately reflects the data contained in the related primary system(s) of record. If a file has multiple systems of record, then multiple Sub-certifiers may be assigned to the file. Sub-certifiers are assisted by Data Stewards who have administrative and/or operational responsibility for the institutional data used in the submission. Data Stewards are responsible for ensuring that the data has been collected systematically, entered accurately, and monitored for referential integrity within the primary systems of record.

- ✓ **USF has developed several tools to assist the Sub-certifiers and Data Stewards in fulfilling these obligations:**
 - DocMart. The USF Documentation Mart (DocMart) portal is maintained as a central repository to manage and maintain detailed information regarding data elements for each BOG SUDS file called data derivations. In addition, data steward groups are set up in the DocMart to facilitate communication among the Data Stewards assigned to a BOG submission. Changes to data derivations are managed and approved through DocMart.
 - State Reporting Portal. The USF BOG State Reporting Portal houses important information and resource links for Data Stewards and Sub-certifiers and others involved with state reporting. User guides, policies and procedures, work activities documentation, and executive review documentation are located in the reporting portal.
 - HubMart. The BOG schema contains a series of tables and database views that are designed to exactly mirror the BOG's desired reporting formats. The HubMart is a view-only tool, created by Information Technology, to allow Data Stewards and Sub-certifiers read-only access to the BOG submission table content to assist with data validation. A BOG data request schedule for USF is also maintained in HubMart.

- ✓ **There are controls integrated within our operational processes to ensure the integrity of the data.**

Ensuring the validity of the data in the BOG submissions begins with ensuring the validity of data in the primary systems of record. Data Stewards are responsible for ensuring that the data has been collected systematically, entered accurately, and monitored for referential integrity within the various modules contained in the student information system (OASIS), human resources system (GEMS), and financial system (FAST). Data quality reports are generated throughout the year to identify data inconsistencies and correct errors as they are identified. As data from these systems are fed into the Faculty Academic Information Reporting system (FAIR), data completeness reconciliations are performed. Since these systems are paramount to the operation of the USF System, there are numerous individuals who review the data daily and would be in a position to identify and report discrepancies.

BOG SUBMISSIONS AND USF FILE GENERATION PROCESSES

Submission	System of Record	File Generation Process	Table	Measures Impacted	Term Reviewed
Operating Budget (OB)	FAST	Application Manager	Operating Budget	3	2013-2014 ¹
Hours to Degree (HTD)	OASIS, Degree Works	Application Manager	Hours to Degree	9	2013-2014 ¹
			Courses to Degree	9	2013-2014 ¹
Student Financial Aid (SFA)	OASIS	Application Manager	Financial Aid Awards	7	2013-2014 ¹
Student Instructional File - Degree (SIFD)	OASIS	Application Manager	Degrees Awarded	1, 2, 4, 6, 8	Spring 2014
Student Instructional File (SIF)	OASIS, GEMS	Application Manager	Person Demographics	1, 2	Spring 2014
			Enrollments	4, 5, 7	Spring 2014
Student Instructional File - Preliminary (SIFP)	OASIS, GEMS	Application Manager	Person Demographics	1, 2	Fall 2014
			Enrollments	4	Fall 2014
Expenditure Analysis (EA)	BOG ²	Application Manager	Expenditure Analysis Extract	3	2013-2014
Retention File (RET)	BOG ³	SQL Script	Retention Cohort Change	4	2012-2013
Instructional & Research Database (IRD)	FAIR	SQL Script	Workload Activities	3	2013-2014 ¹

¹Since these files were produced annually, UAC chose to use the October 2014 submissions, which were more representative of the control structure in place as of September 30, 2014.

²The Budget Extract file is generated by the BOG annually based on data in the OB and IRD files. USF generates the Expenditure Analysis file based on the BOG Budget Extract file.

³The Retention file is generated by the BOG annually from the SIF, SIFP, and SIFD. USF generates the Retention Cohort Change file based on the BOG Retention file. The 2012-2013 file generated in January 2014 was the latest available file.

FILE GENERATION PROCESSES

Application Manager Process

USF utilizes an automated process, Application Manager, to extract data files from the original system of record and to reformat and redefine data to meet the BOG data definition standards. This process was initiated in 2008 in order to provide a consistent and secure method for generating the BOG submission files.

- ✓ **The Application Manager jobs can be launched by authorized Data Stewards; however, individuals responsible for the collection and validation of the data have no ability to**

modify the Application Manager jobs or data files created by the Application Manager processes.

BOG File Creation

Each BOG file submission has two Application Manager jobs associated with it:

- Hub Load Job. The Hub Load job is used to extract data from the original system of record based on the BOG file submission table requirements. A historic file of all data extracted is maintained in Hub tables stored in the Data Warehouse under the Doc schema. Access to these tables is restricted and is read-only. Data quality reports are generated by the Application Manager jobs which are automatically emailed to the data steward groups defined in the DocMart. These reports mimic many of the SUDS BOG edit checks and are used to clean data prior to the data being loaded into SUDS. **All corrections are made to the original system(s) of record and the Hub Load job is rerun until the file is free of material errors.**
- BOG-OUT Job. The BOG_OUT job populates BOG target tables in the Data Warehouse under the BOG schema from the Hub tables. Access to these tables is restricted. The BOG_OUT job also produces statistical reports used to verify that the record counts for the Hub table and BOG table match. This report also provides Run IDs needed during the SUDS file upload process. The BOG_OUT job also extracts the data from the BOG schema and saves the data in a read-only flat file on a server maintained by IT. The file is then transferred by the Application Manager job to the transfer server for upload by BSR via the SUDS portal. **Individuals with access to these files cannot modify them.**

The source system of record and the data file loaded to the BOG SUDS portal will always match the original systems of record on the date and time the file is created.

There are two areas where Application Manager jobs can impact data integrity:

- Required data derivations occur within the Application Manager jobs. These data derivations include (1) general reformatting of the original source data to meet BOG data consistency standards among state institutions, (2) populating static fields, which include data such as reporting institution, reporting term, and data source, and (3) creating a limited number of calculated fields. Data derivations are only changed at the request of the BOG Information Resource Management (IRM). There has been only one derivation change directly impacting the performance measures since 2010. At the request of the BOG, there were new values added to Type of Student to distinguish between post-bachelors and non-degree seeking students in the SIF and SIFP files (Elements 01068-Type of Student at Date of Entry and 01413-Type of Student at Time of Most Recent Admission).
 - Application Manager jobs are also used to filter out any excluded populations per the BOG reporting requirements. For example, individuals receiving their second bachelor's degree are excluded from the Hours to Degree (HTD) file.
- ✓ **Any changes to the data derivations, data elements, or table layouts in the Application Manager jobs are tightly controlled by BSR and Information Technology utilizing a formal change management process**

This process includes the development of business system requirement documentation which includes documentation to demonstrate that the change is consistent with the BOG data definitions, approval of the User Service Request (USR) by Sub-certifiers, and user acceptance testing by Data Stewards. Sub-certifiers must approve the Application Manager job changes prior to implementation.

As a result, we chose to focus our testing on the IT controls designed to ensure that changes to the Application Manager jobs are approved via the standard USF change management process and that access to BOG submission-related data at rest or in transit was appropriately controlled. We also reviewed the functional specification documents associated with these Application Manager jobs and compared the data derivations used by the performance measures to the BOG Data Dictionary to ensure that they were consistent.

BOG File Upload and Verification Process

Once all data integrity steps are performed and the file has been loaded into the SUDS portal, additional edit reports are run to ensure the file will pass the BOG IRM data validity checks.

- ✓ **Only BSR and IT server administrators have access to the transfer server. Only BSR staff can upload a file from the transfer server to SUDS, edit submissions, generate available reports, or generate reports with re-editing.**

BSR logs onto the transfer server using Windows Remote Desktop and opens an internet browser which is locked down to only access the SUDS portal. BSR uploads BOG_OUT job files into SUDS through the SUDS portal, then notifies the Data Steward and Sub-certifier that the file has been uploaded and that edits have been requested.

Any underlying errors identified during that process which cannot be explained must also be corrected at the primary system of record, and the same Application Manager process is used to regenerate the file for upload to SUDS. No changes can be made to SUDS file loads via the SUDS portal. Once all errors are corrected or explained and the Data Steward and Sub-certifier are ready to request approval to submit the file to the BOG, the Executive Review process is initiated.

Prior to holding an Executive Review meeting, the Data Steward and Sub-certifier must prepare and approve an Executive Review form. The Executive Review form is designed to provide information regarding the file's purpose, explainable errors, historical trends, recent submission issues, as well as assurance that the data has validity. Data Stewards and Sub-certifiers are expected to provide a summary of the key data elements, including a comparison of data for at least three to five previous reporting periods. The Sub-certifier(s) and Data Steward(s) present the results to the Executive Reviewer and the Data Administrator or Backup Data Administrator at an Executive Review Committee meeting. **The file will not be submitted to BOG by the Data Administrator until the meeting is held and the Executive Reviewer(s) approve the file.**

ODS File Creation and Upload Process

Most of the BOG submission files for Measures One through Nine are generated by the Application Manager process. However, the Office of Decision Support (ODS) generates two BOG submission files utilizing a different process: the Retention Cohort Change File (RET) and the Instructional & Research Database file (IRD).

Retention Cohort Change File

The retention file is generated by the BOG IRM and is downloaded by BSR to a secure folder in the BOG reporting portal. The Data Steward uploads the retention files into the data warehouse (BOG schema) using the “file upload feature” in the HubMart application. An Application Manager job is used to convert social security numbers to U-Numbers. The data is then extracted (without SSN) by the Data Steward and placed on an ODS server maintained by USF IT.

ODS maintains a student information database on its own server which has historically been used to validate the retention file provided by the BOG. This was needed since the data warehouse (BOG schema) only contains data from Fall 2008 forward. The 2013-2014 retention file was based on a 2007 cohort generated from the Student Instructional File (SIF) in Summer 2007 and the Student Instructional Preliminary File (SIFP) submitted in Fall 2007. The 2007 files were maintained by ODS. ODS used SQL scripts to identify students who were reflected in the original cohort, but who needed to be removed based on the BOG criteria. The Application Manager is used (BOG_OUT) to convert U-Number back to social security number and submit the Retention Cohort Change File.

The Retention Cohort Change file process was reviewed and tested in detail in UAC Project 14-038. (See Prior UAC Projects.) As a result, only follow-up procedures were performed.

Instructional & Research Database (IRD) File

The IRD file is produced from data in the Faculty Academic Information Reporting (FAIR) system workload activity module managed by ODS. Three ODS employees had access to FAIR as an administrator, two of which served as IRD Data Stewards.

USF faculty and instructional staff report their instructional and research efforts directly into the FAIR workload activity module, which has been prepopulated with course information from OASIS, the student information system. FAIR also has been prepopulated with salary and benefits paid by funding source per GEMS, the human resources system, and research activities per FAST, the financial system. Faculty complete the activity report at the end of each semester by entering the percent of effort attributed to each course (FTE) and funding source. Instruction-related activities, sponsored activities, and non-instructional activities are also reported in FAIR. The faculty members total reported FTE must match their appointed FTE in GEMS. Faculty and other instructional personnel complete the activity report at the end of each semester and can only impact their own individual records. There are currently 29 FAIR liaisons assigned within the academic units to assist with monitoring the data for completeness and accuracy. Generally, only one person per department has this access as designated by the chair or director, and access is limited to the records controlled by that department or organizational unit. The FAIR liaisons must certify the accuracy of this data annually.

The FAIR system computes “person-years” from the data input by faculty and instructional personnel. Person-years is computed based on the number of months in the reporting period times the FTE reported for the activity divided by 52.2 weeks in a year. For example, a faculty member who taught a three credit hour course in the Fall term (.25 FTE) would have “person years” associated with that class of .09339 (.25 x 19.5/52.2).

The IRD files are generated based on views of data extracted from the FAIR workload activity module. SQL scripts are used to reformat and filter data to meet the BOG data definitions. The scripts were created by ODS staff and were approved by a Data Steward prior to being placed in production.

While the file includes both undergraduate and graduate instructional efforts, only undergraduate efforts are used in the performance measure. In addition, while the file granularity is at the employee, program activity, department, funding source, and discipline level, the data is aggregated during the calculation of the performance measure.

The created files are stored on the ODS server, which is also used by the FAIR system. Only ODS staff and IT administrators have access to this server. The IRD Data Steward uploads the IRD files to the SUDS portal directly from the ODS server. Once uploaded, the IRD file follows the same data verification and review processes as files using the standard Application Manager process.

Measure Ten – Number of Postdoctoral Appointees

The BOG developed a ten-metric Performance Funding Model of which one metric is chosen by the University Board of Trustees. The list of metrics from which the Board of Trustees can select is associated with the Accountability Reports submitted annually by each SUS institution. At the October 23, 2013, Board meeting, the Number of Post-Doctoral Appointees was selected as the chosen metric. This metric was held to be representative of resources focused on the university’s research mission and is generally representative of the maturity of that mission. The source of the data is the annual NSF/NIH GSS Survey.

Survey Background

The Graduate Students and Postdoctorates in Science and Engineering (GSS) survey is an annual census of all U.S. academic institutions granting research-based master’s degrees or doctorates in science, engineering, and selected health (SEH) fields as of Fall of the survey year. The survey, sponsored by the National Science Foundation and the National Institutes of Health, collects the total number of graduate students, postdoctoral appointees, and doctorate-level non-faculty researchers by demographic and other characteristics, such as source of financial support.

Data is collected separately for each SEH unit (academic departments, programs, research centers, or health care facilities) within an institution. In addition, Morsani College of Medicine’s SEH units are reported in a separate survey than other SEH disciplines. A web survey is the primary mode of data submission. Respondents report aggregate counts on graduate students, postdocs, and doctorate-holding non-faculty researchers in each eligible unit, as of the Fall term of the academic year.

Our audit was based on the most recent survey results published in May, 2014. The survey is completed in the spring of each year based on data from the previous Fall term. Survey results are not published until the following spring. As a result, the results published in May, 2014, were from Fall 2012 data. The submittal of the Fall 2012 data occurred prior to these results becoming a performance measure.

Definition of a Postdoctoral Appointment

The GSS survey instructs respondents to utilize their institutional definition when reporting postdoctoral appointments.

The Office of Postdoctoral Affairs (OPA) publishes an annual Postdoctoral Scholar Handbook which contains a uniform definition of a postdoctoral scholar. The 2012-2013 handbook in place at the time the Fall 2012 data was compiled states:

“A postdoctoral scholar is an individual holding a doctoral degree who is engaged in a temporary period of mentored research and/or scholarly training for the purpose of acquiring the professional skills needed to pursue a career path of his or her choosing. Postdoctoral appointees can pursue basic clinical or translational projects so long as their primary effort is devoted toward their own scholarship. Postdocs are essential to the scholarly mission of the mentor and host institution, and thus are expected to have the freedom to publish the results of their scholarship.”

In Fall 2012, USF utilized three postdoctoral job codes (9180, 9194, and 9195) in GEMS with a benefit-earning salary plan (08) and an uncompensated salary plan (98) to permit tracking of visiting scholars and other externally funded postdoctoral appointments. Postdoctoral research appointments are limited to three to five years.

USF Reporting Structure

USF has two separate reporting units, one for the Morsani College of Medicine and one for all other Tampa campus units. The Office of Postdoctoral Affairs serves as the institutional coordinator for the USF System. SEH units are given the choice to either complete the survey using the web application or to submit a written copy of the survey to the Office of Postdoctoral Affairs who enters the data on their behalf. The individual responders from each SEH unit were responsible for the completeness and accuracy of the data they submitted in the survey.

USF Morsani College of Medicine has an affiliation with the Moffitt Cancer Center in which Moffitt ranked faculty are concurrently appointed in non-compensated positions at USF. The postdoctoral scholars appointed by Moffitt are often mentored by these dual appointed faculty. As a result, Moffitt assisted with the reporting of postdoctorates appointed by Moffitt but affiliated with the USF Morsani College of Medicine.

Data Verification

OPA generated GEMS reports of all employees paid from postdoctoral job codes (9180, 9194, and 9195) to determine if the respondents failed to report individuals appointed to these codes.

Omissions are reported by OPA as survey coordinator. OPA also follows up with respondents to ensure they accurately reflect all postdoctoral appointees in non-postdoctoral job codes when they are aware of these appointments.

APPENDIX A

PERFORMANCE MEASURES DATA SOURCES

Measure	Description	University Provided Data Source	Data Used/Created by the BOG
One	Percent of bachelor's graduates employed full-time in Florida or continuing their education in the U.S. one year after graduation	BOG submission: SIFP, SIF, SIFD	National Student Clearing house, Florida Education and Training Placement Information Program
Two	Median wages of bachelor's graduates employed full-time in Florida one year after graduation	BOG submission: SIFP, SIF, SIFD	Unemployment Insurance wage data
Three	Average cost per bachelor's degree	BOG submission: OB, IRD, EA	BOG created Budget Extract file
Four	Six year FTIC graduation rate	BOG submission: SIF, SIFP, SIFD, Retention Cohort Change File	BOG created Retention file
Five	Academic progress rate	BOG submission: SIF	
Six	Bachelor's degrees awarded within programs of strategic emphasis (includes STEM)	BOG submission: SIFD	
Seven	University access rate	BOG submission: SFA, SIF	
Eight	Graduate degrees awarded within programs of strategic emphasis	BOG submission: SIFD	
Nine	Percent of bachelor's degrees without excess hours	BOG submission: HTD	
Ten	Number of postdoctoral appointments in science and engineering	NSF/NIH survey data completion	NSF/NIH Survey of Graduate Students and Postdoctorates in Science and Engineering



MEMORANDUM

TO: Dr. Ralph Wilcox, Provost & Executive Vice President of Academic Affairs
Dr. Terry Chisolm, Vice Provost for Strategic Planning, Performance & Accountability

FROM: Debra S. Gula, CPA 
Executive Director

DATE: February 27, 2015

SUBJECT: 15-010 Management Letter – Performance Based Funding Data Integrity Audit

University Audit and Compliance performed an audit of the university's processes and internal controls which ensure the completeness, accuracy, and timeliness of data submissions to the Board of Governors (BOG), which are relied upon by the board in preparing the measures used in the performance based funding process.

UAC's overall conclusion was that there was an adequate system of internal controls in place to meet our audit objectives, assuming corrective actions are taken timely to address the five medium-priority risks appearing in this Management Letter. As UAC audit reports are focused only on high-priority risks, these medium-priority risks were not addressed in our audit report. None of the issues identified for management attention were found to have increased or decreased the achievement score of the USF System within the Board of Governors performance based funding model.

As of the date of this report, all five issues have been resolved. Management's responses are included with this Management Letter.

Within ten business days, please provide your actions taken and actual implementation dates within the Team Central Follow-Up System.

Please contact us at 974-2705 if you have any questions.

cc: President Judy Genshaft, USF System
Chair Hal Mullis, USF Board of Trustees
John Long, Sr. VP, Business and Finance and Chief Operating Officer
Dr. Charles Lockwood, Sr. VP, USF Health
Dr. Paul Sanberg, Sr. VP, Research, Innovation & Economic Development
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MEDIUM PRIORITY RISKS	RESOLVED
<p>1. Data Administrator responsibilities were not incorporated into the official job description.</p> <p>At USF, the Business Systems Reengineering (BSR) Director is the Data Administrator. The job description included the BSR Director’s overall responsibility for the BOG submissions but did not describe the Data Administrator’s duties and responsibilities.</p> <p>A formal delegation of authority letter had been signed by the President assigning the duties and responsibilities to the Data Administrator on February 22, 2010.</p> <p>USF’s BOG State Reporting Manual establishes the roles and responsibilities of those involved in the BOG submission process. This manual adequately described the Data Administrator’s roles and responsibilities.</p> <p>Recommendation: Ensure Data Administrator duties and responsibilities are accurately reflected in the official job description.</p> <p>Management Attention Required: <input type="checkbox"/> Immediate <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> Timely</p> <p>Resources/Effort Required: <input type="checkbox"/> Significant <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Minimal</p> <p>Management’s Response: The BSR Director’s official job description was updated on December 23, 2014, to reflect the Director’s responsibility as the institutional data administrator and included the duties and responsibilities required by BOG Regulation 3.007.</p>	<p>Yes</p>
<p>2. Password standards were not consistent with ISSP-003.</p> <p>UAC reviewed access to all servers and databases used to store or transmit data from the point the data left the system of record to the time the data was submitted to the BOG through the SUDS portal. Our review determined those with access had a valid business need.</p> <p>UAC identified three instances where some of the password parameters were not consistent with ISSP-003, Active Directory Settings, which is the university password standard that is applicable to all USF systems.</p> <p>Recommendation: Ensure password management standards are consistent with ISSP-003.</p> <p>Management Attention Required: <input type="checkbox"/> Immediate <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> Timely</p>	<p>Yes</p>

MEDIUM PRIORITY RISKS	RESOLVED
<p>Resources/Effort Required: <input type="checkbox"/> Significant <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Minimal</p> <p>Management's Response: During audit field work, all password parameters were brought into compliance with ISSP-003.</p>	
<p>3. All servers were not in full compliance with ISSP-006.</p> <p>Some BOG submissions contained restricted data; therefore, the servers are subject to ISSP-006, Securing Restricted Computers.</p> <p>Access to a server's staging folder containing BOG submission data was not sufficiently limited; however, only an automated job could modify the files. While data integrity is not compromised, the confidentiality of the data is at risk. BSR staff and IT server administrators could access this staging folder.</p> <p>A server used to transfer BOG submissions was running Windows XP. Microsoft discontinued support and security updates for Windows XP on April 8, 2014. As a result, updates had not been installed since May 25, 2014. In addition, the anti-virus client and definitions had not been updated since July, 2014.</p> <p>Recommendation: Ensure all servers are properly secured in accordance with ISSP-006.</p> <p>Management Attention Required: <input type="checkbox"/> Immediate <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> Timely</p> <p>Resources/Effort Required: <input type="checkbox"/> Significant <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Minimal</p> <p>Management's Response: BOG submission data is no longer stored in the staging folder, and the transfer server has now been replaced.</p>	Yes
<p>4. The IRD file, used by the BOG to create the EA Extract, was resubmitted due to an error in the calculation of Person-Years.</p> <p>The BOG uses the Instructional & Research Database (IRD) and Operating Budget (OB) files to create the Expenditure Analysis (EA) file. The IRD annual 2013-2014 file was submitted on October 7, 2014, but had to be resubmitted on October 24, 2014, due to an error in the calculation of the person-years field that was not identified prior to the initial submission.</p> <p>The Faculty Academics Information Reporting (FAIR) system calculates the person-years field based on appointed Full-Time Equivalent (FTE) and the</p>	Yes

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<p>budgeted weeks of activity for each term. Person-years is a BOG-defined data element required for SUDS reporting.</p> <p>During a 2014 FAIR application update, coding errors caused the person-years to be calculated based on an individual's <u>most recent</u> personnel appointment record, rather than summing <u>all</u> relevant records. This resulted in understated person-years which was used in the BOG IRD submission.</p> <p>The IRD submission uploaded to the BOG SUDS portal passed the edit checks since the SUDS edit checks on person-years focused on overstatement. Person-years must not be greater than one for any given record, and the sum of all person years for an employee must not exceed 1.04.</p> <p>The Executive Review process requires Data Stewards and Sub-certifiers to provide a summary of key data elements which compares the elements to the previous three to five reporting periods. The IRD file Executive Review Data Summary included SCH taught by faculty, % of FTE devoted to teaching, and the number of activities per term, but did not include historic comparisons of person-years. As a result, the error was not identified in the Executive Review process.</p> <p>The error was identified while the EA file Data Steward(s) were comparing that file to historic data including person-years. On October 20, 2014, the Data Administrator then requested that the IRD file be resubmitted to correct the error. This did not delay the submission of the EA file which was submitted on October 28, 2014.</p> <p>Recommendations:</p> <ol style="list-style-type: none"> 1. Ensure the IRD Executive Review process includes historical comparisons of all data being used in the performance metrics. 2. Complete the transition of the IRD file generation into the more consistent and secure Application Manager process prior to the next annual submission in October 2015. <p>Management Attention Required: <input type="checkbox"/> Immediate <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> Timely</p> <p>Resources/Effort Required: <input checked="" type="checkbox"/> Significant <input type="checkbox"/> Moderate <input type="checkbox"/> Minimal</p> <p>Management's Response: 1. The Data Administrator now requires all data elements being used in the performance metrics model to be included in the historic comparison component of the Executive Review process.</p>	

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<p>2. Code to create the IRD file has been moved from FAIR to Application Manager and will be subject to the same IT source control, change management processes, and workflows as the rest of the BOG data submissions. All documentation to support the new process has been completed.</p>	
<p>5. Monitoring and oversight procedures over the GSS survey responses need to be enhanced to ensure consistent reporting among departments and comparability of results year over year.</p> <p>USF has chosen the total number of postdoctoral appointees as Performance Measure Ten and uses the Graduate Students and Postdoctorates in Science and Engineering (GSS) survey as the data source.</p> <p>The annual GSS survey, sponsored by the National Science Foundation and the National Institutes of Health, collects the total number of graduate students, postdoctoral appointees, and doctorate-level non faculty researchers in science, engineering, and selected health (SEH) fields.</p> <p>GSS survey instructions advise entities to use their institutional definition of postdoctoral appointees as the basis for their reporting. The USF System's definition of a postdoctoral scholar is published each year in the Postdoctoral Scholar Handbook published by the Office of Postdoctoral Affairs.</p> <p>The Office of Postdoctoral Affairs (OPA) coordinates the GSS survey responses. NSF publishes a list of academic disciplines to be included in the survey, and OPA identifies an individual in each SEH department or center who will be responsible for responding to the survey. The respondent can either enter aggregated data into a web portal or provide a paper copy of the survey to OPA who enters the data on their behalf. All supporting documentation is retained at the unit.</p> <p>The SEH units included postdoctoral scholars in the traditional GEMS postdoctoral job codes (9180, 9194, and 9195) as well as many other non-postdoctoral job codes. In addition, not all SEH units used the traditional postdoctoral job codes to appoint externally compensated postdoctoral scholars using a non-compensated salary administration plan.</p> <p>UAC asked each of the SEH respondents to provide a listing of the postdoctoral appointees they included in the survey. During our testing, UAC was able to validate 96% of the reported postdoctoral appointees. Differences</p>	<p>Yes</p>

MEDIUM PRIORITY RISKS	RESOLVED
<p>were attributed to accidental duplication among departments, data retention issues, and a lack of detailed guidance.</p> <p>Recommendation: Develop and distribute a written procedure that will enhance oversight and monitoring of the GSS survey responses including, but not limited to, the following:</p> <ul style="list-style-type: none"> a. Providing enhanced guidance to survey respondents to ensure consistent reporting, b. Establishing a centralized repository to ensure retention of supporting documentation, and c. Performing a detailed, centralized review of survey responses and postdoctoral appointments to ensure they are consistent with USF standards and guidelines. <p>Management Attention Required: <input type="checkbox"/> Immediate <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> Timely</p> <p>Resources/Effort Required: <input type="checkbox"/> Significant <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Minimal</p> <p>Management’s Response: New procedure has been written and approved. Survey responses supporting Measure Ten were brought into USF’s Sub-certification and Executive Review process already in place for other performance measures in February 2015.</p>	