FIU | Office of Internal Audit

FLORIDA INTERNATIONAL UNIVERSITY

**Audit of the College of Arts, Sciences
& Education Internal Controls**

**Report No. 2022/23-08
June 2, 2023**

FIU | Office of Internal Audit

Date: June 2, 2023

To: Michael Heithaus, Ph.D., Executive Dean, College of Arts, Sciences & Education

From: Trevor L. Williams, Chief Audit Executive

Subject: Audit of the College of Arts, Sciences & Education Internal Controls, Report No. 22/23-08

We have completed an audit of the College of Arts, Sciences & Education (CASE or "College") Internal Controls, which included procedures and practices relating to financial, operational, and information security controls over research-related activities. Specifically, we examined revenues, personnel administration, procurement of goods and services, travel, and asset management. We also reviewed the College's information security controls over sensitive or confidential data.

The College is composed of three schools that are home to the University's widest variety of academic and research programs. Its structure combines the School of Environment, Arts and Society, the School of Integrated Science and Humanity, and the School of Education and Human Development. For the 2021-2022 fiscal year, the College's sponsored research expenditures totaled $57.9 million.

Overall, our audit concluded that while the College has established internal controls for the areas in scope and has excelled in their management of some of these areas, internal controls over other areas, particularly pertaining to personnel administration, procurement of goods and services, travel expenditures, University credit cards purchases, attractive property, and information systems security could be strengthened. The audit resulted in nine recommendations, which management agreed to implement.

We want to take this opportunity to express our appreciation to you and your staff for the cooperation and courtesies extended to us during the audit.

Attachment

C: FIU Board of Trustees
Kenneth A. Jessell, University President
Elizabeth M. Béjar, Provost, Executive Vice President, and Chief Operating Officer
Aime Martinez, Interim Chief Financial Officer and Senior Vice President for Finance and Administration
Javier I. Marques, Vice President for Operations & Safety and Chief of Staff, Office of the President

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EXECUTIVE SUMMARY

Introduction

The College of Arts, Sciences & Education is composed of three schools that are home to the University's widest variety of academic and research programs. It is the largest of FIU's schools and colleges. With 19,326 active students served by 1,281 employees. Research expenditures amounted to $57.9 million in fiscal year 2021-2022 from 886 projects.

What We Did

We performed this audit to determine whether established controls pertaining to research-related revenues, personnel administration, procurement of goods and services, travel, asset management, and information systems security are adequate and effective, and adhere to applicable rules, policies, and procedures, as well as OMB Guidance.

What We Concluded

Our review of the College of Arts, Sciences & Education research-related internal controls pertaining to expenditures, asset management, and information systems security identified the following opportunities for improvement:

- We identified nine employees that due to system issues, did not certify their time and effort reports from 229 to 542 days after their original due dates. Measures are needed to ensure time and effort reports are approved in a timely manner.

- Our review of travel expenditures disclosed conditions related to one Travel Authorization approved after the commencement of the trip; inadequate documentation of expenditures totaling $1,080; and 10 Expense Reports totaling $25,602 submitted late. Measures to ensure the effective management of travel expenses are needed.

- We identified eight credit card transactions totaling $31,514 that did not comply with the University's *Departmental Card Guidelines and Procedures* or University Policy. Three transactions did not indicate the purpose for the purchase, two transactions did not complete the Higher Education Communication Vendor Assessment Tool questionnaire for third-party software purchases; and three transactions inappropriately included Florida sales tax. Management should implement measures to ensure the effective management of the department credit card.

- We reviewed the College's "attractive property" inventory and found it to be incomplete as one project excluded seven iPads from its attractive property list. Management should perform an inventory of all attractive property.

- We tested the controls over information systems security and found various security gaps that require the attention of management. We have recommended that they address these gaps to limit exposure to cyberthreats.

The reportable conditions found and the background giving rise to the foregoing recommendations are detailed in the Observations and Recommendations section beginning on page 9 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

Pursuant to the Office of Internal Audit (OIA) approved annual plan for the 2022-2023 fiscal year, we have completed an audit of the College of Arts, Sciences & Education (CASE or "College") operational, financial, and information technology controls. The primary objective of our audit was to determine whether internal control procedures and practices pertaining to research-related personnel administration, procurement of goods and services, travel, and asset management were: (1) adequate and effective; (2) in accordance with the grant requirements and *Office of Management and Budget Guidance for Grants and Agreements* ("OMB Guidance"); and (3) University policies and procedures. We also reviewed the College's information security controls over sensitive or confidential data.

Our audit period was July 1, 2021, through June 30, 2022. Additionally, we assessed current practices through March 2023.

The audit was conducted in conformance with *the International Standards for the Professional Practice of Internal Auditing* and included tests of the accounting records and such other auditing procedures, as we considered necessary under the circumstances. Sample sizes and transactions selected for testing were determined on a judgmental basis applying a nonstatistical sampling methodology. Therefore, our test results are limited to our sample and might not be representative of the population from which the sample was selected. Audit planning and fieldwork was conducted from September 2022 to March 2023.

During the audit, we:
- Reviewed OMB Guidance, University policies and procedures and applicable Florida Statutes and State University System of Florida Board of Governors ("BOG") regulations;
- Obtained an understanding of the controls and processes over the College research activity;
- Examined accounting records and supporting documents;
- Conducted a walkthrough of the research facilities;
- Interviewed responsible personnel; and
- Tested selected transactions.

We limited the scope of our audit to sponsored research contracts and grants and excluded non-research funded operations, such as Auxiliary and Educational and General (E&G) funded operations. In addition, we excluded research revenue as most of the contracts and grants selected for testing were cost-reimbursable.

Additionally, we reviewed all internal and external audit reports issued during the last three years. We found that the Audit of Cybersecurity Prevention and Detection Controls-Ransomware, Report No. 22/23-05, issued on November 15, 2022, audited the College's Application Systems Technology Innovation Center (CASTIC), and resulted in eight recommendations. One recommendation has since been implemented, while the remaining seven are in the process of being implemented and due by September 2023.

BACKGROUND

The College of Arts, Sciences & Education is composed of three schools that are home to the University's widest variety of academic and research programs. From the natural and physical sciences to social sciences and education, it is the largest of FIU's schools and colleges. It offers bachelor's, master's, doctorates, and first professional degrees.

Among its three interdisciplinary schools, CASE has 13 academic departments, as listed below:

School of Environment, Arts and Society	School of Integrated Science and Humanity	School of Education and Human Development
• Biological Sciences • Earth and Environment • English • Liberal Studies Program	• Chemistry and Biochemistry • Mathermatics and Statistics • Philosophy • Physics • Psychology • Women's and Gender Studies	• Counseling, Recreation, and School Psychology • Educational Policy Studies • Teaching and Learning

CASE has 19 centers and institutes that are at the forefront of research and innovation and unite research across the University to apply their skills and expertise to issues that affect us all. The respective centers and institutes are listed below within the area of research/study:

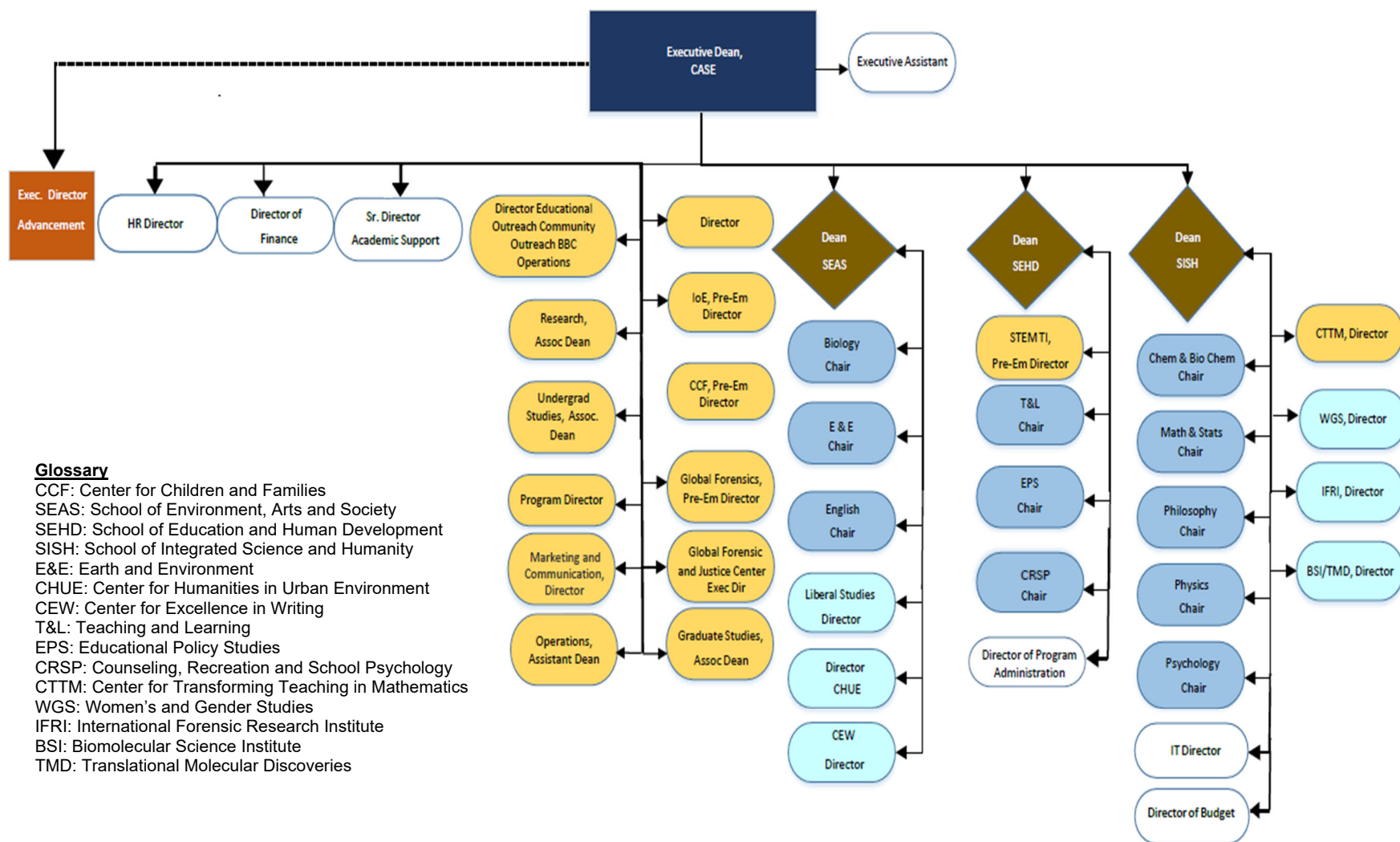| Arts and Culture	Education	Environment	Science & Health
• Center for the Humanities in an Urban Environment • Center for Women's and Gender Studies	• Center for Children and Families • Science, Technology, Engineering, and Mathematics (STEM) Transformational Insititue • Center for the Transformation of Teaching Mathematics (CTTM)	• CREST Center for Aquatic Chemistry and Environment • Florida Coastal Everglades Long-Term Ecological Research (LTER) • International Center for Tropical Botany • Medina Aquarius Program • Sea Level Solutions Center • Tropical Conservation Institute	• Biomolecular Sciences Institute • Center for Advanced Research in Forensic Science • Center for Children and Families • Global Forensic and Justice Center • International Forensic Research Institute • National Forensic Science Technology Center (NFSTC) • Stocker AstroScience Center • Translational Molecular Discoveries

The College's mission is to prepare students for a lifetime of success and to equip them to thrive and provide leadership in a rapidly changing world. As the heart of a public research University, CASE holds itself as a solution center, developing and deploying solutions to a diverse array of challenges through transformational research, innovation, and creative activities as well as meaningful engagement with partners, stakeholders, and decision makers worldwide.

The College had a total student enrollment for Spring 2023 of 19,326 students, comprised of 17,598 undergraduate and 1,728 graduate students.

Personnel

As of March 2023, the College had 598 faculty, 342 adjuncts, 269 administrative, and 72 staff members. A partial organizational chart is shown on the next page.

Executive Dean, CASE

Executive Assistant

Exec. Director Advancement

HR Director

Director of Finance

Sr. Director Academic Support

Director Educational Outreach Community Outreach BBC Operations

Research, Assoc Dean

Undergrad Studies, Assoc. Dean

Program Director

Marketing and Communication, Director

Operations, Assistant Dean

Director

IoE, Pre-Em Director

CCF, Pre-Em Director

Global Forensics, Pre-Em Director

Global Forensic and Justice Center Exec Dir

Graduate Studies, Assoc Dean

Dean SEAS

Biology Chair

E & E Chair

English Chair

Liberal Studies Director

Director CHUE

CEW Director

Dean SEHD

STEM TI, Pre-Em Director

T&L Chair

EPS Chair

CRSP Chair

Director of Program Administration

Dean SISH

Chem & Bio Chem Chair

Math & Stats Chair

Philosophy Chair

Physics Chair

Psychology Chair

IT Director

Director of Budget

CTTM, Director

WGS, Director

IFRI, Director

BSI/TMD, Director

Glossary
CCF: Center for Children and Families
SEAS: School of Environment, Arts and Society
SEHD: School of Education and Human Development
SISH: School of Integrated Science and Humanity
E&E: Earth and Environment
CHUE: Center for Humanities in Urban Environment
CEW: Center for Excellence in Writing
T&L: Teaching and Learning
EPS: Educational Policy Studies
CRSP: Counseling, Recreation and School Psychology
CTTM: Center for Transforming Teaching in Mathematics
WGS: Women's and Gender Studies
IFRI: International Forensic Research Institute
BSI: Biomolecular Science Institute
TMD: Translational Molecular Discoveries

Source: CASE Management

Financial Information

For the fiscal year 2021-2022, the College expended $57.9 million in research funds from 886 projects, as detailed in the following table.

Table 1: CASE Research Expenditures July 1, 2021 - June 30, 2022		
	Amount	**Percentage**
Salaries and Benefits Expenditures:		
Salaries and Benefits	$30,689,482	53%
Faculty and Administrative Overload	31,095	-
Total Salaries and Benefits Expenditures	$30,720,577	53%
Other Operating Expenditures:		
Facilities and Administrative Expense	$ 9,876,987	17%
Subcontracts	2,991,332	5%
Recharge Center Expense Internal	2,029,546	4%
Professional and Consulting Services	1,945,756	3%
Computer Equipment under $5,000	1,210,167	2%
Travel	1,113,106	2%
Stipends	1,107,761	2%
Other Materials and Supplies	1,050,137	2%
Lab Supplies	897,965	2%
Tuition Payments	789,171	1%
Furniture and Equipment (F&E) $5,000 and over	681,313	1%
Miscellaneous	693,404	1%
Participant Payments	553,344	1%
Software License and Software Maintenance	384,989	1%
Rent of Buildings and Facilities	359,864	1%
Contractual Services	317,795	1%
Educational Supplies	314,325	1%
Other Professional Fees	278,113	-
Scholarships	218,950	-
F&E under $5,000	114,331	-
Repairs and Maintenance	114,266	-
Phone Equipment Rental	106,766	-
Transfers Out	74,983	-
Total Other Operating Expenditures	$27,224,371	47%
Total Research Expenditures	**$57,944,948**	**100%**

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

Areas Within the Scope of the Audit Tested Without Exception:

Controls Over Capital Assets

The University's Property Manual requires that Asset Management conduct a yearly inventory of the University's capital assets. Capital assets are tangible, movable, personal property of a non-consumable, non-expendable nature, with a value of $5,000 or more and which has a normal expected life of one year or more.

We selected 22 projects and obtained the list for research-related capital assets totaling $1,664,009 from Asset Management. We determined that all such assets were properly inventoried during the fiscal year ended June 30, 2022, without exception.

Procurement of Goods and Services

During our audit period, research non-payroll expenditures totaled $27.2 million[1] on 886 projects. We selected 22 projects (2%) totaling $3.9 million (14%) for testing.

From the 22 projects selected, we tested 25 transactions, totaling $1.9 million (7%) and found no exceptions. We determined that all procurement expenditures were appropriate, properly authorized and disbursed, adequately supported, properly recorded in the University's accounting records, and were in compliance with the contracts and grant requirements and OMB Guidance, as well as University policies & procedures.

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[1] From this total we excluded the following expenditure types: F&A (Facilities and Administrative), travel, and credit card transactions which totaled $14 million, thus leaving $13.2 million subject to testing.

1. Personnel Administration

During our audit period, research salaries and fringe benefits totaled $30.7 million. Our review of payroll expenditures focused on effort reporting certification, and our test results are summarized below.

Effort Reporting and Certification

Federal regulation requires that when an individual is compensated by or contributes time to a sponsored project, that the University confirms that the percentage allocated to each activity represents a reasonable estimate of the work performed on federal and federal flow-through contracts and grants (Effort Reporting). The University utilizes a web-based system, known as the Effort Certification Reporting Technology (ECRT) to certify individuals' overall effort on a semester basis.
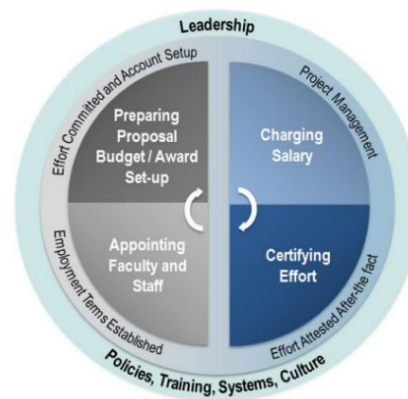
Source: FIU Research Effort Certification Training Guide
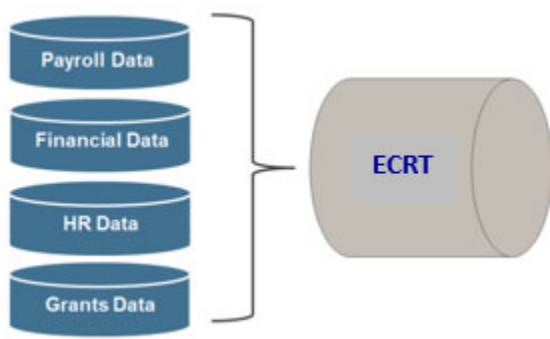
Source: FIU Research Effort Certification Training Guide

University Policy No. 2330.020, *Effort Reporting and Certification*, states: "an after-the-fact certification of effort is required of all individuals performing services on a sponsored project when all or a portion of their salary is charged to a sponsored project. Effort reports must be a reasonable estimate of the individual's time and effort during the period of performance certified. The effort report must be certified by his/her supervisor, the principal investigator (PI) for the grant or another FIU employee so long as the person certifying the effort has firsthand knowledge of the work performed by the employee whose effort is being certified." Additionally, FIU University Policy 2350.005(a), *Close-Out of Sponsored Projects*, which requires PIs to ensure "that all project expenditures are posted to PantherSoft during the project performance dates as set forth in the sponsor award document to ensure that the sponsor will pay for the charges. No new charges may be incurred to a Project ID after the project end date."

We obtained all research payroll expenditures incurred from July 1, 2021, through June 30, 2022, for the 22 selected projects totaling $9.4 million. We tested transactions totaling $1.3 million (14%) related to 30 employees (comprising 89 effort reports) and found the following exceptions involving nine employees (30%):

<u>Untimely Certification of Effort Report</u>

For nine employees (30%), effort reports were certified from 229 to 542 days after the original due date, as detailed below. These nine employees worked during the three terms in our audit period at various times.

Table 2: Effort Report Certification Details				
Effort Reporting Period of Performance	Employee Count	Approximate Due Date (60 days)	Date Certified Range	Days Late Range
Summer 2021 (May 12 - August 11, 2021)	6	October 10, 2021	February 24 - April 5, 2023	502-542
Fall 2021 (August 12 - December 24, 2021)	7	February 22, 2022	February 24 - April 5, 2023	367-407
Spring 2022 (December 25, 2021 - May 11, 2022)	6	July 10, 2022	February 24 - April 5, 2023	229-269

The delays were primarily due to the migration of the server-based ECRT system in September 2021 to the Huron cloud environment, which resulted in various unexpected issues. These issues caused the certification of employee effort reports for the work performed during our audit period to be placed on hold. Once the initial migration issues were resolved and the certification process resumed, the system encountered an issue with the email notifications.

ORED determined the data in the ECRT system was accurate and subsequently sent manual notifications, rather than system-generated notifications, advising certifiers of the revised deadline of March 10, 2023. From the nine employees mentioned above, we found that seven employees' time and effort reports were certified by the revised due date. However, we found the remaining two employees' reports were certified after the extended deadline.

Management expects to be back to their normal certification schedule for Spring 2023.

Certifying time and effort reports in a timely manner assists approvers in identifying potential issues with submitters' reported effort and ensures any required payroll transfers are effectuated sooner rather than later, especially important when projects are being closed-out.

Recommendation

The Office of Research & Economic Development should:	
1.1	Ensure time and effort reports are certified in a timely manner as specified on FIU Policy No.2330.020.

Management Response/Action Plan

1.1 Outside of the isolated migration of the effort reporting system to the cloud structure situation noted in the audit report, ORED has ensured time and effort cards are certified in a timely manner on a historical basis. With the completion of the migration of the new effort reporting system to the cloud, ORED is on track for certifications to be conducted in a timely manner for Spring 2023 certifications, which are due on July 10, 2023.

Implementation date: August 1, 2023

Complexity rating: 1 - Routine

2. Travel Expenditures

We obtained all research travel related expenditures totaling $290,081 incurred during the audit period for the 22 selected projects. We sampled 25 expense reports totaling $75,363 (26%). Among 12 (48%) of the expense reports, we found the following exceptions:

- The University's *Travel and Other Expenses Manual* ("Travel Manual") states, "An approved Travel Authorization is a traveler's permission to incur expenses and travel on behalf of the Florida International University. The authorization must include all travel expenses that are known or can be projected before the trip."

  We found one Travel Authorization for expenses totaling $5,683, where the Travel Authorization was approved after the commencement of the trip. The trip began on March 3, 2022, while the Travel Authorization was approved on March 7, 2022.

- The University's Travel Manual states, "receipts must document the transaction information. Accurate and detailed records of purchases allow the FIU Travel Department, FIU, State and Federal auditors to verify and audit the purchases for compliance with University, State and Federal policy, statutes, rules, and regulations. All receipts/invoices must contain the following information: vendor name and address, transaction date, description of the transaction, unit costs for items purchased, itemized items, total amount paid and proof of payment." Further, OMB Guidance §200.403, *Factors Affecting Allowability Of Costs*, requires costs be adequately documented.

  We found one expense report where the expenditure was not adequately documented, and thus, is questionable. An employee incurred a total of $980 in lodging expenses and $100 in transportation expenses. However, the employee created the receipts used for the reimbursement as instructed by management. College management informed us that when the researcher travels into a rural area with no printer, internet, and no invoice is provided by the merchant, then the employee brings a receipt book to get the merchant to sign the receipt verifying payment. However, we found the support provided to the approver lacking, as there was no explanation of the circumstances requiring the traveler to have to create their own receipt. The receipt itself, although purportedly signed on the "BY" line by the merchant, does not provide for the information required by the Travel Manual, e.g., the name or address of the vendor, as shown in Image 1 and 2 on the next page.

Image 1: Hotel Receipt

Image 2: Transportation Receipt

- The University's Travel Manual states, "the expense report must be submitted within ten (10) business days after the completion of the trip or incurrence of the expense." We found 10 instances totaling $25,602 where the expense reports were submitted late.

    o Nine expense reports totaling $24,323 were submitted between 11 and 77 business days after the completion of the trip.

    o One expense report totaling $1,279 for a graduate assistant employee was not submitted, although the trip was completed on July 29, 2022. The employee had a travel airline expense to a conference in Alaska, but according to management, the employee did not have any out-of-pocket expenses. Notwithstanding, the Travel Manual requires the completion of an expense report within 10 business days after the completion of the trip.

Recommendation

The College of Arts, Sciences & Education should:	
2.1	Develop and implement internal procedures to ensure compliance with FIU's travel authorization and expense reporting requirements, as well as OMB Guidance to adequately document support for costs incurred on sponsored research projects.

Management Response/Action Plan

2.1 Will conduct meetings with personnel who handle travel for CASE, to reinforce knowledge and importance of adherence to FIU Travel Policies and Guidelines. To include: TA's must be submitted and approved prior to commencement of the trip; ER's must submitted within ten business days after completion of trip or incurrence of expense; ensure travelers properly document transaction information (receipts). Additionally, will send recurrent communications throughout the year to all CASE units, as a reminder of FIU Travel Policies and Guidelines.

Implementation date: August 21, 2023

Complexity rating: 1 – Routine

3. University Credit Cards

We identified a total of $316,620 in research-related credit card transactions during the audit period for the 22 selected projects. We sampled 25 transactions totaling $68,078 (22%). We found eight transactions totaling $31,514 did not comply with the University's *Departmental Card Guidelines and Procedures or* University Policy, as detailed below:

- A CASE Accounting Specialist approved three transactions totaling $7,290 for multiple jackets, tee shirts, and bus passes. According to the University's *Departmental Card Guidelines and Procedures*, "if the receipt does not clearly indicate the purpose for the purchase, then documentation should be attached to state the reason for the purchase."

  We found that the support provided for these transactions did not provide the approver with sufficient documentation, such as the reason for the purchase. After obtaining the proper support, we determined that all were proper. Notwithstanding, we believe the department should provide better documentation as to the reason for each purchase, especially in circumstances when the approver does not have the grant knowledge, as was the case here with the Accounting Specialist.

- Two transactions supported by the same invoice totaling $6,450 with a vendor where a web application software was purchased without the completion of the Higher Education Communication Vendor Assessment Tool (HECVAT) questionnaire.

  FIU Policy 1930.005 *Applications Software Sources: Purchasing, License and Use*, states "that when software is purchased through a third-party, the department/user must provide the Division of Information Technology with a completed HECVAT questionnaire." The HECVAT questionnaire is to be completed by vendors as part of the procurement process. The questionnaire submitted by the vendor is to be reviewed by Information Security Analysts to ensure acceptance and compliance with FIU's policies and state and federal laws and regulations.

  In addition, these purchases were made with a departmental card. According to the University's *Departmental Card Guidelines and Procedures,* "The departmental card can be used to purchase software with per unit cost of $1,000 or less under the following conditions: The software is not available for purchase through Panther Tech, the software is not being purchased from a foreign vendor, the software is not installed on the network, and the procedure is followed for "click through" agreements." We found that one of the software licenses within the $6,450 invoice was for $5,166. Therefore, this purchase should not have been made with a departmental card.

- Three transactions totaling $17,774 in which Florida sales tax amounting to $1,163 was paid. According to the University's *Departmental Card Guidelines and Procedures,* all transactions made within the State of Florida or shipped to the University directly are exempt from the State of Florida Sales and Use tax.

Management explained that the employee made the purchase inclusive of sales tax without realizing it.

Recommendations

The College of Arts, Sciences & Education should implement a plan of action to ensure that:

3.1	*University Departmental Card Guidelines and Procedures* requiring that a receipt or other supporting documentation that clearly describes the purpose of the purchase is provided for each purchase are adhered to.
3.2	The HECVAT questionnaire for software purchases is submitted by the vendor and reviewed as part of the procurement process as required by FIU Policy 1930.005.
3.3	Cardholders and approvers are acutely aware of allowable purchases found under the *University Departmental Card Guidelines and Procedures* and enforce adherence to said guidelines and procedures.
3.4	State of Florida sales tax is properly excluded from purchases (or refunded when paid) pursuant to the University's *Departmental Card Guidelines and Procedures*.

Management Response/Action Plan

3.1 Will send annual communication, at the beginning of the fiscal year, to CASE cardholders, reconcilers, and approvers, to emphasize that receipts and/or supporting documentation must clearly describe the purpose of the purchase. Will remind reconcilers/approvers, that this information must be included in the description field in PantherSoft.

Implementation date: July 3, 2023

Complexity rating: 1 - Routine

3.2 As part of the annual communication to cardholders, reconcilers, and approvers referenced above (3.1), they will also be reminded about FIU Policy 1930.005 and subsequent requirement of HECVAT questionnaire when purchasing software or application solutions.

Implementation date: July 3, 2023

Complexity rating: 1 - Routine

3.3 As part of the annual communication to cardholders, reconcilers, and approvers referenced above (3.1), they will also be emphatically reminded about adherence to Guidelines and Procedures, stressing allowable and non-allowable purchases. To this end, a copy of the *University Departmental Card Guidelines & Procedures* will be provided, highlighting "allowable" and "non- allowable" purchases section.

Implementation date: July 3, 2023

Complexity rating: 1 - Routine

3.4 As part of the annual communication to cardholders, reconcilers, and approvers referenced above (3.1), we will reinforce the tax exemption. They will be reminded to request refund or notate on the receipt in the case where a vendor refuses to acknowledge and exempt the sales tax.

Implementation date: July 3, 2023

Complexity rating: 1 - Routine

4. Controls Over Attractive Property

To test the completeness of the recordkeeping for attractive property, we verified the list of attractive property maintained for three projects[2] and found that for one of these projects, the inventory was incomplete – seven new iPads were not inventoried. Upon inquiry, management updated the attractive property list for the seven iPads.

The University's *Property Control Manual* defines attractive property as "University property costing less than $5,000 but which are particularly vulnerable to theft and misuse." Departments have discretion with determining the "attractiveness" of the property in the context of their environment, but factors to consider include the security of the property location, the size and portability of the item, and its potential resale value if stolen. These items should be marked as University property and catalogued by the user department.

Recommendation

	The College of Arts, Sciences & Education should:
4.1	Ensure all attractive property items are accounted for by grant administrators in their attractive property list, prior to updating the Snipe-IT software.

Management Response/Action Plan

4.1 CASE will define attractive assets as high-value items that are particularly susceptible to loss or theft. These may include but are not limited to electronic equipment, specialized tools, portable devices, and any other assets deemed valuable and attractive to potential unauthorized individuals. Grant administrators will be required to account for all attractive property items in their attractive property list before updating the Snipe-IT software, ensuring comprehensive tracking and management of these assets to mitigate the risk of loss or theft.

Implementation date: August 24, 2023

Complexity rating: 2 - Moderate

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[2] The College tracks its attractive property through CASTIC; however, it is currently in the process of updating Snipe-IT, a web-based software asset management system, to include all attractive property items. (See Observation No. 5, page 19.) Nonetheless, each grant administrator individually maintains their own attractive property list.

5. Information Systems Security

Information systems security is among the top priorities of the University. To safeguard the University's sensitive research data, all devices used to access or store sensitive data should be securely configured by implementing controls such as ensuring malicious code protections are applied, local administrator accounts are restricted, devices are up to date, and assets are appropriately inventoried where possible.

To test whether the devices provided to the grant administrators were securely configured, we selected 15 endpoint[3] devices (nine laptops and desktops and six iPads) from three projects sampled. Our observations are presented in the following sections.

Threat and Data Loss Prevention

The University provides McAfee antivirus along with CylanceProtect to detect and prevent the execution of malicious software on computers. In addition, the McAfee suite offers a Data Loss Prevention (DLP) solution to monitor for potential exfiltration attempts of sensitive data. We identified three of seven (43%) computers that either did not have McAfee antivirus, CylanceProtect, or DLP installed. The remaining two laptops could not be turned on to obtain the data due to corrupted operating systems (OS) and will undergo troubleshooting by an IT Administrator to determine if a software or hardware issue exists. Installing threat prevention and data loss prevention tools on the devices reduces the risk of sensitive data becoming corrupted or stolen.

The tablets in the areas were not included in this testing as the McAfee and Cylance solutions the University offers are not applicable for tablets. Although university-wide mobile device management policies or guidelines have not been established, the University does offer JAMF as a mobile device management solution that can be leveraged to manage and securely configure tablets. Currently, the researchers have their own processes for configuring mobile devices. On one grant, to avoid the potential sharing of data between users of their iPads, the grant administrator established an iCloud account for each of the 69 devices she manages, which led to 69 sets of credentials that needed to be tracked into a spreadsheet in plaintext (not encrypted). Leveraging JAMF should allow the areas to manage their mobile devices via a central account and eliminate the need to create and store separate credentials, in addition to enforcing policies to restrict the sharing of data between devices.

Least Privilege Access

Local administrative accounts are consistently targeted by attackers in an attempt to compromise systems. In addition, users with elevated privileges may have the authority to inadvertently download and install potentially malicious software. Of the seven devices tested for local administrative accounts, six had at least one user with local administrative account privileges. Removing local administrative accounts reduces the risk of systems being compromised by attackers or users installing malicious software.

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[3] An endpoint is any device that is physically an end point on a network. Laptops, desktops, mobile phones, tablets, servers, and virtual environments can all be considered endpoints.

This was a recommendation in the *Audit of Cybersecurity Prevention and Detection Controls - Ransomware*, Report No. 22/23-05, which management is currently working on the implementation of the recommendations, therefore no recommendation will be provided herein.

Updated Operating Systems

We obtained the relevant end-of-life details for the Windows, MacOS, and iOS operating systems to determine if the operating systems observed for the devices selected were kept up to date and were currently supported versions. We found one of the 13 devices tested to have an out-of-date operating system. The device had the High Sierra operating system, which reached end-of-life in December 2020. Keeping devices' operating systems up to date will ensure that known vulnerabilities are patched, which will reduce the risk of a bad actor compromising sensitive data via exploitation of the vulnerabilities.

This was also a recommendation in the *Audit of Cybersecurity Prevention and Detection Controls - Ransomware*, Report No. 22/23-05, which management is currently working on the implementation of the recommendations, therefore no recommendation will be provided herein.

Asset Management Processes

We tested the device inventories managed by the grant administrator along with the Snipe-IT asset management system managed by the CASTIC group to ensure that the appropriate fields were captured (i.e., Serial Number, Manufacturer, Model Name, Model Number, MAC Address, Operating System, Domain, Hostname, Location, and Owner) in accordance with ISACA standards. We found that 10 of the 15 devices tested were missing from the Snipe-IT asset management system. When checking the local inventories kept by the grant administrators along with Snipe-IT for completeness, 13 of the 15 devices were missing relevant data fields such as hostnames and serial numbers. Keeping a strong asset management process ensures that devices can be easily identified, especially if a device becomes compromised.

Recommendations

The College of Arts, Sciences & Education should:	
5.1	Ensure that grant administrators work with their designated IT Administrator to manage mobile devices via JAMF.
5.2	Ensure that all devices are entered into the Snipe-IT asset management system with all the appropriate fields.

Management Response/Action Plan

5.1   CASE grant administrators will be required to engage with their designated IT Administrator (CASTIC) who will oversee the configuration, enrollment, and ongoing management of Mac devices using the JAMF platform. Devices that are not on JAMF will be onboarded. Future devices will be onboarded as well per the College policy.
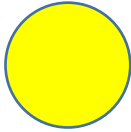
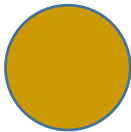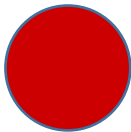**Implementation date:** August 24, 2023

Complexity rating: 2 - Moderate

5.2   To enable grant administrators to add their own assets to the inventory, CASE will provide access and training for the Snipe-IT access management system. Grant administrators will receive the necessary permissions and guidance to enter their devices into the system, ensuring that all appropriate fields are completed accurately. College policy will be updated to reflect that all attractive assets should be added to Snipe-IT asset management system.

Implementation date: August 24, 2023

Complexity rating: 2 - Moderate

Legend: Estimated Time of Completion		Legend: Complexity of Corrective Action	
(light green circle)	Estimated completion date of less than 30 days.	**1**	**Routine:** Corrective action is believed to be uncomplicated, requiring modest adjustment to a process or practice.
(yellow circle)	Estimated completion date between 30 to 90 days.	**2**	**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.
(blue circle)	Estimated completion date between 91 to 180 days.	**3**	**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.
(dark yellow/gold circle)	Estimated completion date between 181 to 360 days.		
(red circle)	Estimated completion date of more than 360 days.	**4**	**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 II – OIA CONTACT AND STAFF ACKNOWLEDGMENT:

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Contributors to the report:	
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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.