FLORIDA INTERNATIONAL UNIVERSITY

Office of Internal Audit

Audit of the Extreme Events Institute

Report No. 14/15-12

June 30, 2015

FLORIDA INTERNATIONAL UNIVERSITY

OFFICE OF INTERNAL AUDIT

Date: June 30, 2015

To: Andres Gil, Vice President for Research
Richard Olson, Director – Extreme Events Institute

From: Allen Vann, Audit Director

Subject: **Audit of the Extreme Events Institute, Report No. 14/15-12**

Pursuant to our approved annual plan, we have completed an audit of the Extreme Events Institute (Institute), primarily encompassing the International Hurricane Research Center (IHRC). The primary objective of our audit was to determine whether the Institute's established internal controls and operating procedures are adequate, effective, and ensure the proper administration of sponsored research grants and recharge centers.

The Institute's operations are funded mainly through numerous sponsored research projects. As of January 22, 2015, there were 15 active sponsored research accounts, with total awards of $12.5 million and expenditures-to-date totaling $11 million.

Overall, our audit disclosed that the Institute's established controls and procedures were generally adequate and effective to ensure the proper administration of grants and recharge centers. Nevertheless, there were opportunities to enhance internal controls, particularly in the areas of: recharge service facility revenue collection; grant expenditure monitoring/reconciliation; credit card controls; travel expenses; time and effort certification; and asset management. Management agreed to implement the 14 recommendations in this report.

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

Attachment

C: Albert Maury, Chair, FIU Board of Trustees
Sukrit Agrawal, Chair, BOT Finance and Audit Committee and Committee Members
Mark B. Rosenberg, University President
Kenneth Furton, Executive Vice President & Provost
Kenneth A. Jessell, Chief Financial Officer and Senior Vice President
Kristina Raattama, General Counsel
Javier I. Marques, Chief of Staff, Office of the President
Barbara Manzano, Assistant Vice Provost Planning & Finance

TABLE OF CONTENTS

OBJECTIVES, SCOPE, AND METHODOLOGY

Pursuant to our approved annual plan, we have completed an audit of the Extreme Events Institute (Institute or EEI), primarily encompassing the International Hurricane Research Center (IHRC or Center). The primary objective of our audit was to determine whether EEI's established internal controls and operating procedures are adequate, effective, and ensure the proper administration of sponsored research grants and recharge centers.

Our audit was conducted in accordance 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. We reviewed the Institute's sponsored research and recharge center activity for the period from July 1, 2013 through December 31, 2014. Audit fieldwork was conducted from February to April 2015.

We reviewed the Institute's sponsored project (post-award) and recharge center administration, examined time and effort reports, interviewed responsible personnel, and tested sampled grant expenditures to determine whether they were in compliance with the Office of Management and Budget (OMB) Circular A-21, Cost Principles for Educational Institutions,[1] University policies and procedures, applicable laws and regulations, and award requirements. Sample size and transactions selected for testing were determined on a judgmental basis.

As part of our audit, we reviewed internal and external audit reports issued during the last three years to determine whether there were any prior recommendations related to the scope and objectives of this audit and whether management had effectively addressed prior audit concerns. There were no prior audit recommendations related to the scope of this audit requiring follow-up.

[1] The change in OMB Circular A-21, requiring the use of the Uniform Guidance is effective December 26, 2014 and applies to funding awarded on or after this date. The current audit examines funding awarded prior to December 26, 2014.

BACKGROUND

The Extreme Events Institute (Institute or EEI) is the umbrella organization over several existing or planned Florida International University (FIU) centers. Currently, the International Hurricane Research Center (IHRC or Center) is the primary center, but the Institute also administers other grants such as the United States Agency for International Development (USAID) Disaster Risk Reduction (DRR).

The IHRC is a multi-disciplinary research and education organization focused on a single mission to reduce hurricane damage and loss of life through more effective mitigation. In 1996, the then Florida Board of Regents created the IHRC at FIU through a public-private partnership between the *We Will Rebuild Foundation* (an organization formed to spearhead the rebuilding of Miami-Dade County after Hurricane Andrew) and the University.

As a University entity, the IHRC conducts both basic and applied research. The IHRC research tries to answer fundamental questions in order to reduce the hurricane threat. The Center's current studies involve such areas as household mitigation and evacuation; storm hazard and vulnerability mapping, long-term community recovery; and economic loss modeling. Organizations such as the National Science Foundation (NSF), the Federal Emergency Management Agency (FEMA), the Florida Office of Insurance Regulation (OIR), and the Florida Division of Emergency Management (DEM) have supported these investigations. The IHRC also collaborates actively with the National Hurricane Center (NHC), co-located on the University's Modesto Maidique Campus.

The IHRC has developed three innovative research initiatives, The Wall of Wind (WoW), the Florida Public Hurricane Loss Model, and the Coastal and Estuarine Storm Tide (CEST) Model, whose success relies on input from and collaboration between several disciplines.

The EEI's operations are funded mainly through numerous sponsored research projects. As of January 22, 2015, we identified 15 active sponsored research accounts (14 of which belong to IHRC), with total awards of $12,557,816 and expenditures to date totaling $11,039,336.[2] The following table depicts the awards by sponsor type.

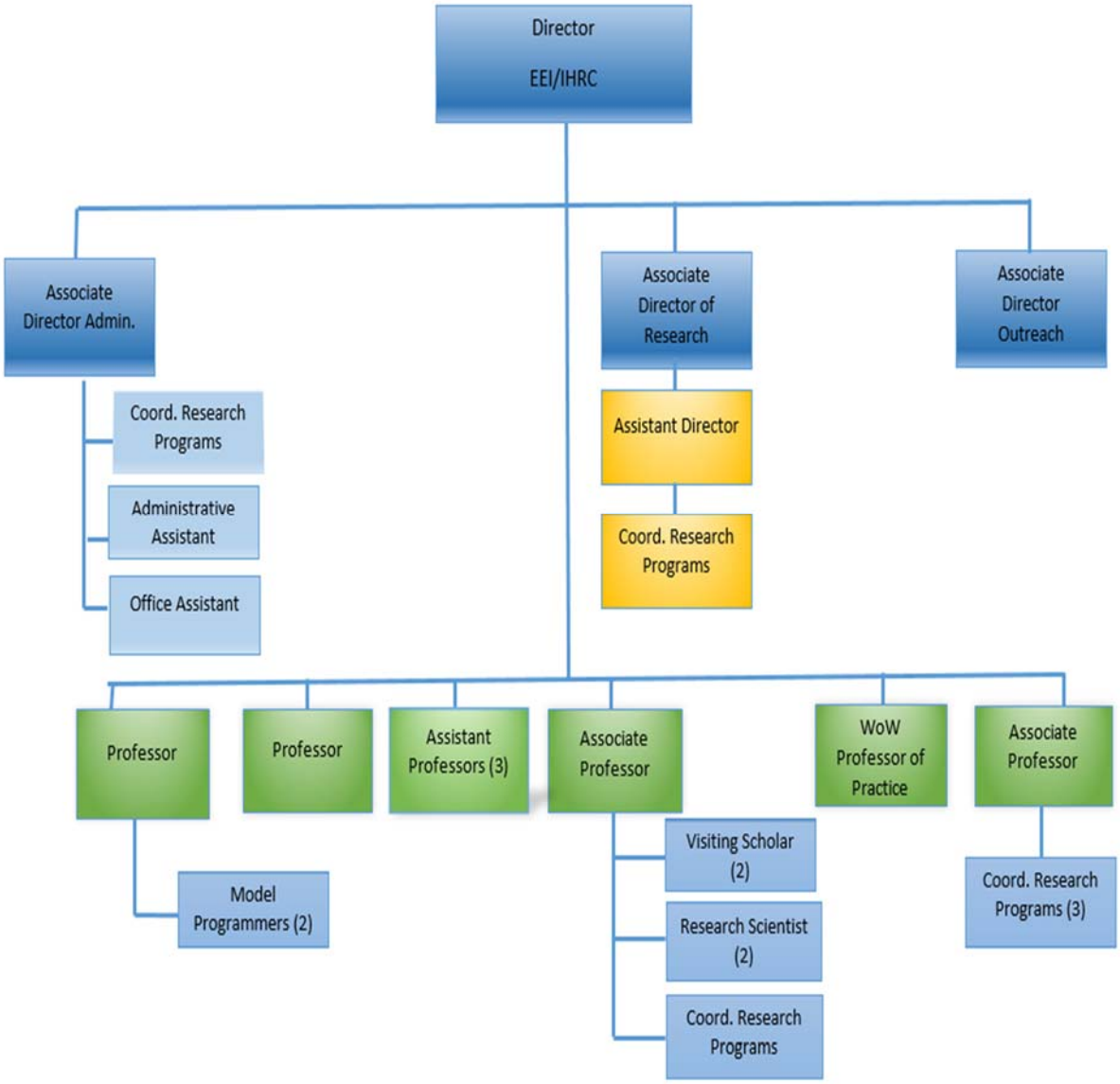
Sponsor Type	No. of Active Projects	Total Award Amount	Life-to-date Expenditures
Federal	6	$ 5,881,885	$ 5,607,604
State	5	$ 5,831,484	$ 4,698,068
Private	4	$ 844,447	$ 733,664
Total	**15**	**$12,557,816**	**$11,039,336**

[2] Source: FIU Division of Research One-line report as of January 22, 2015.

The IHRC also operated one recharge center as an auxiliary account during the audit period which generated $411,508 in revenues and incurred $303,916 in expenditures (excluding depreciation expense), and was also subjected to our audit testing. However, additional expenditures in the amount of $1,545,639 funded through state Educational and General (E&G) fund, and other Miscellaneous and auxiliary accounts were not subject to audit testing.

Personnel

As of May 2015, EEI/IHRC had 14 researchers/faculty and 5 administrative staff members. The Institute collaborates with faculty from various colleges on specific sponsored projects. The Institute's organizational chart, including faculty working collaboratively on sponsored projects displayed in green, is shown below.



FINDINGS AND RECOMMENDATIONS

Overall, our audit disclosed that the Institute's established controls and procedures were generally adequate and effective to ensure the proper administration of grants and recharge centers. Nevertheless, there were areas where internal controls need strengthening, particularly in the areas of: recharge service facility revenue collection; grant expenditure monitoring/reconciliation; credit card controls; travel expenses; time and effort certification; and asset management.

Our overall evaluation of internal controls is summarized in the table below.

INTERNAL CONTROLS RATING			
CRITERIA	**SATISFACTORY**	**FAIR**	**INADEQUATE**
Process Controls		**x**	
Policy & Procedures Compliance		**x**	
Effect		**x**	
Information Risk	**X**		
External Risk		**x**	
INTERNAL CONTROLS LEGEND			
CRITERIA	**SATISFACTORY**	**FAIR**	**INADEQUATE**
Process Controls	**Effective**	**Opportunities exist to improve effectiveness**	**Do not exist or are not reliable**
Policy & Procedures Compliance	**Non-compliance issues are minor**	**Some instances of non-compliance may be evident**	**Non-compliance issues are pervasive, significant, or have severe consequences**
Effect	**Not likely to impact operations or program outcomes**	**Impact on outcomes contained**	**Negative impact on outcomes**
Information Risk	**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	**None or low**	**Moderate**	**High**

The areas where internal controls need improvement, as identified in our audit, are detailed below.

1. Recharge Service Facility Operation

A Recharge Service Facility is a self-supporting operating unit within the University that: exists principally to provide research related goods or services to University faculty, staff, or students at no more than actual cost (break-even); bills sponsored programs for such goods or services; has operating costs that are funded by charges to the customers receiving the goods or services; and may have revenues between $10,000 and $1 million annually. The facility charges all internal customers equally for goods or services at a rate that is calculated to recover costs over a fixed period of time.

The IHRC operated one recharge service facility, the Wall of Wind, during the audit period. The Wall of Wind facility is capable of performing controlled testing in flows that replicate hurricane winds up to Category 5 and accompanied by wind-driven rain. The facility is used by both internal and external clients.

The recharge facility ended the audit period with a surplus of $107,592, on revenues of $411,508 and expenditures of $303,916 (excluding depreciation expense).

Federal regulation OMB Circular A-21(J)(47)(b) requires that the cost of the goods and services, when material, be charged directly to applicable awards based on the actual usage of goods and services, and on the basis of a schedule of rates that does not discriminate against federally-sponsored activities of the institution.

We observed that the IHRC had established billing rates for internal and external customers based on costs incurred in providing the services. The rates charged to internal customers was lower than the rates charged to external customers, as the rates for the external customers included overhead. We determined that both internal and external customers were charged the appropriate rate.

We reviewed service agreements and payments for 12 external and 6 internal customers by the Wall of Wind and found the following:

- The service agreement requires all customers to pay 50% of the cost of the test at the time the agreement is signed. For 8 of the 12 external service agreements, the 50% deposit, totaling $98,602, was either collected late, 14 to 175 business days after the service agreement date, or not collected until the test was completed and report was issued. Also, final payment for 6 of the 12 service agreements, totaling $35,703, with the external customers was received 26 to 194 business days after the test date. Delay in billing and receiving payment at agreed-upon intervals puts a financial burden on the research facility and may put the facility at the risk of not collecting the full agreement amount after the report is issued.

- For 1 of the 12 external service agreements, we observed that the final payment in the amount of $4,480 was not billed after the test report was issued by the recharge facility. The test report was issued on 4/8/2015, and as of 4/20/2015 no billing for final payment had been sent to the customer. Not billing and collecting payments in a timely manner may result in funds not being collected and delays the use of funds by the recharge facility.

- Smart billing (internal billing) for all 6 internal customers was not processed in a timely manner. For 4 of the 6 service agreements' smart billing, totaling $122,952, was done on 6/4/2014 while the service agreements were signed on 1/28/2014. For the other 2, smart billing, totaling $68,123, was done 13 and 15 business days after the testing was completed. Smart billing should have been processed for 50% of the service agreement amount after the signing of the service agreement, and 50% after the test was completed and report was provided to the client. Delay in billing project accounts may result in the client receiving the service, but the client's research project ending prior to being billed, and thus, not being able to collect.

- The IHRC did not maintain a log fully documenting the receipt of checks. The University's Cash Collection procedures states that in the absence of pre-numbered receipts, all payment instruments received must be recorded in a check log, which will include the check date, check number, amount and payer. At the time of our audit a check in the amount of $24,992 was being held by the Associate Director of Administration and Planning. The check was dated 2/7/2015 and as of 4/23/2015 it had not been deposited or restrictively endorsed. The Associate Director informed us that she was waiting for the test results to be issued to the client prior to depositing the check. We found that the test results report had been issued to the client on 4/8/2015. Holding a check for an extended period of time and not endorsing it as soon as it is received exposes the University to possible misplacement/loss of the check and the possibility of the check not being honored by the payee.

The documentation maintained by the IHRC relating to the Wall of Wind services was incomplete and inconsistent. The folder containing documentation of the Wall of Wind services provided did not include all the service agreements and related documents. Also, the log documenting services provided did not include all the services provided by the Wall of Wind and did not include the service agreement date, testing date, and test report issuance date. This information is necessary for billing and tracking payment status. The Associate Director attributed this issue to the unexpected resignation of an accountant and said they will update the log and bill and receive payments timely.

Recommendations

EEI/IHRC should:	
1.1	Ensure payment from both internal and external customers is collected as stated in the service agreement.
1.2	Maintain complete documentation of services provided by the Recharge Facility for each service agreement.
1.3	Establish a process to document receipt of checks, restrictively endorse all checks as soon as they are received and forward checks to the Office of Research and Economic Development (ORED) for deposit in a timely manner.

Management Response/Action Plan:

1.1 EEI will consult with ORED to review collection procedures and revise service agreements to allow different billing options based on type of clients while minimizing risk of not collecting full amount due. Collection procedures will be followed on all service agreements.

Implementation date: August 2015

1.2 EEI will develop a flowchart and filing naming convention to ensure that all documents are properly filed. All EEI and IHRC administrative staff will be trained on this new internal system.

Implementation date: July 2015

1.3 EEI will update the current log to include all missing fields highlighted during the audit review and all future deposits will be logged appropriately and follow Univeristy procedures. Appropriate staff will be trained on these procedures.

Implementation date: Immediately

2. Financial Management Controls

In order to ensure that grant expenses incurred by Principal Investigators (PIs) and researchers are properly accounted for and recorded in the University's financial records (project ledgers), the Institute's administrative office staff is assigned to review costs charged and reconcile the project ledgers on a monthly basis. We were informed by the EEI staff that the project ledgers were reviewed once a month or quarterly. We were not able to verify the reconciliation performed as the reviews were not documented and there was no set time table to perform the reconciliation.

University Policy No. 2350.010, *Cost and Payroll Transfers on Sponsored Projects,* states that "the PI should monitor the ledgers for his/her sponsored project(s) at least on a monthly basis to ensure the proper posting of expenditures and the timely discovery of an error". Upon discussion with the Institute's Associate Director for Administration and Planning, she agreed to document the reconciliation and establish a schedule when the reconciliations will be performed.

Recommendation

EEI/IHRC should:	
2.1	Review and document grant expenses monthly to ensure costs charged are in compliance with grant and University requirements and reconcile with project ledgers.

Management Response/Action Plan

2.1 Project reconciliations will be documented and dated on a monthly basis within 30 days of monthly closing.

Implementation date: July 2015

3. Payments to Consultants and Other Expenses Controls

During the audit period, the Institute's contractual service expense including payments to consultants and subcontractors was $1,272,499. We reviewed 24 transactions, totaling $294,718, to determine compliance with University purchasing procedures and to assess if the expenditures were allowable and in compliance with grant requirements, and whether the consultant agreement was signed by authorized personnel. Our review and discussion with the Institute's Associate Director indicated that the EEI's controls over consultant payments were adequate.

We observed that consulting agreements and subcontracts reviewed were approved by the Office of Research and Economic Development, as required. Also, all expenditures tested were appropriate, allowable and in accordance with grant requirements and University purchasing procedures, except for a payment to a consultant totaling $34,426 which was not fully supported. The consultant agreement required the consultant to submit details of costs incurred such as salary and fringe benefits, equipment, and travel costs. The consultant submitted an invoice for the total amount without any other document to support the amount billed. This was a cost-reimbursable agreement, therefore, the cost should have been reviewed and approved with the proper supporting documentation.

Recommendation

EEI/IHRC should:	
3.1	In the future, ensure documents supporting consultant's invoice is obtained and reviewed prior to approval of invoice for payment.

Management Response/Action Plan:

3.1 Consultant invoices will be reviewed to ensure backup documentation corresponds to the requirements stated in the service agreement prior to submission for payment.

Implementation date: July 2015

4. Credit Card Controls

As of January 2015, the Institute had two active purchasing cardholders and one credit card approver. There were also two cardholders whose cards were cancelled, but nonetheless made credit card purchases prior to the cancellation during the audit period.

During the period from July 1, 2013 through November 30, 2014, $187,638 in credit card purchases were made. We reviewed the Institute's credit card approval process and reviewed 38 credit card transactions totaling $21,089. We were pleased to find that the Institute maintained supporting documentation of credit card purchases for each cardholder and that receipts were signed by the cardholder, while the approver for the two active purchasing cardholders, the Associate Director for Outreach, had sufficient authority to challenge the cardholder in the event of inappropriate purchases or lack of adequate documentation.

Our other observations follow:

- One of the cardholders provided her card to staff members that were responsible for making travel arrangements for the Institute. University Departmental Card Guidelines and Procedures prohibits the sharing of credit cards and states that the only person allowed to use the credit card is the cardholder. Sharing credit cards exposes the credit card to improper use and limits accountability in case of misuse.

- A review of four payments, totaling $1,058, for the purchase of food was not supported with the list of meeting attendees. A list of meeting attendants is required to support the number of meals purchased.

Recommendations

EEI/IHRC should:	
4.1	Ensure credit cards are not shared and are used only by cardholders.
4.2	Maintain a list of meal participants to support the number of meals purchased.

Management Response/Action Plan:

4.1 Associate Director will cancel her travel card and assign the task to a subordinate.

Implementation date: September 2015

4.2 Participant list will be submitted as backup documentation for any food purchase.

Implementation date: Immediately

5. Travel Authorization and Expenses

Travel expenses for the audit period totaled $233,490. We reviewed the Institute's travel authorization and expense approval process, and reviewed 26 transactions totaling $24,167. In accordance with State law and University policy governing travel, Travel Authorizations were properly obtained prior to incurring travel expenditure. We also noted that the Office of Research and Economic Development approved Travel Authorizations, as secondary approver, for all grant related travel expense. Our other observations follow:

- The cost of three round-trip airline tickets from Tallahassee to Miami did not appear to be reasonable: $908, $623, and $856 for non-refundable, economy class tickets.

- A Travel Authorization in the amount of $28,449 issued to a Principal Investigator on behalf of non-employees attending a meeting did not include the list of the approved travelers. We reviewed two transactions totaling $2,780 and determined that the Travel Authorization issued to a Principal Investigator did not document the approved travelers. Without such documentation, improper travel expenditure could be incurred for unrelated/unapproved individuals.

- A business class airline ticket was purchased for the Miami to Canada leg of a business trip for a non-employee without prior approval of the CFO, as required. The total cost of the ticket was $1,423. We were informed that at the time the ticket was purchased the cost of the business class ticket was lower than the economy ticket, however, the Institute did not document the price comparison. The University's Travel & Other Expenses Manual requires all airfare upgrades to business and first class to be approved by the CFO prior to purchasing airline tickets.

  The travel agent stated that the cost of the business class ticket was lower than the economy ticket, however, no supporting document was provided. Regardless, prior approval is still required even if the cost of business/first class ticket is lower than an economy ticket. The Institute obtained the CFO's approval after the fact and only when the expense reimbursement was rejected by the Controller's Office.

Recommendations

EEI/IHRC should:	
5.1	Ensure that airline ticket purchase is the most economical.
5.2	Ensure that all Travel Authorizations issued on behalf of non-employee documents the travelers.

5.3	Obtain prior approval form the CFO for business and first class airfare prior to purchase.

Management Response/Action Plan:

5.1 EEI will work closely with Travel Leaders and researchers to obtain the most economical tickets. A memo will be circulated to researchers apprising them of our new internal policy. A justification will be included within the TA and Expense Report if the most economical ticket cannot be obtained.

Implementation date: Immediately

5.2 The adminitrative staff will be retrained to ensure that all Travel Authorizations issued on behalf of non-employees document the travelers. All documentation will be cross-checked before a TA is approved and backup documents are filed.

Implementation date: Immediately

5.3 Prior approval from the CFO will be obtained for business class and first class airfare even if these fares are more economical.

Implementation date: Immediately

6. Time and Effort Reporting and Certification

The University is obligated to maintain a payroll distribution system that results in a reasonable allocation of salaries and wages charged to sponsored agreements. To comply with the Federal requirements the University established Policy No. 2350.020, *Effort Reporting and Certification*, which requires maintaining after-the-fact activity records for payroll distribution purposes.

To streamline the effort reporting process the University's Office of Research and Economic Development has implemented the Effort Certification and Reporting Technology system (ECRT). Accordingly, employee effort reports are prepared subsequent to each semester (fall, spring and summer). For each employee, total effort must equal 100%, which accounts for all sponsored and/or institutional activities. Each departmental effort coordinator has 30 days after receiving the effort reports from DOR to review their employees' effort for accuracy, and then each employee receiving his or her effort report has an additional 30 days to review and certify[3] that the percentage listed on the report accurately reflected the work they performed during the reported period.

Salaries and benefits for the audit period totaled $3,624,586, representing approximately 56% of the Institute's total expenditures for the same period. To test for compliance with applicable University policies and procedures and Federal regulations, the employees whose salaries and benefits were charged to three selected grants were reviewed against their effort reports for summer and fall 2014.

The results of our review are as follows:

- Effort reports were properly certified by either the employee or the Principal Investigators (PI) who had first-hand knowledge of the actual work performed.

- 6 out of the 14 effort reports reviewed (43%) were certified between 2 to 152 days late.

- The total effort expended by each employee was 100%, as required.

- Our review of 1,191 time entry transactions for 8 exempt and non-exempt employees on sponsored projects indicated that the Human Resources (HR) payroll administrator approved 134 entries (11%).[4] HR approves payroll entries when timesheets are not approved by the supervisor/time approver by the time approval deadline. As the hourly time entries serve as the effort certification for non-exempt employees they should be approved by a supervisor who has first-

[3] Only the employee, PI, or other responsible official who has first-hand knowledge of the actual work performed should certify the effort report (electronic signature).

[4] It should be noted that this is a comparably low exception rate from those reported in other recent internal audits of University departments and business units.

hand knowledge of the work performed by the employee on the sponsored project, not by HR.

- We compared payroll charged to the three grants reviewed and the effort report certified or time entries approved and concluded that all efforts charged to the grant were certified.

Recommendations

EEI/IHRC should:	
6.1	Work with PIs to ensure timely certification of efforts.
6.2	Ensure that time entries charged to sponsored projects by non-exempt employees are approved by a supervisor who has first-hand knowledge of the work performed by the employee.

Management Response/Action Plan:

6.1 The EEI administrative staff will send reminder emails to PIs to ensure timely certifications of effort.

Implementation date: Immediately

6.2 The EEI administrative staff will work with all supervisors to ensure they approve the time entries charged to sponsored projects by non-exempt employees by established deadlines.

Implementation date: Immediately

7. Asset Management

During the audit we noted that the Institute did not maintain a comprehensive record of attractive property. The Institute kept a log of computers and printers, however, the log did not include all attractive property such as televisions, monitors, and printers in individual offices. In addition, the log was not updated to account for surplused and transferred attractive property. Also, four laptops listed in the computer and printer log kept by the IT Manager could not be located. The IT Manager informed us that the laptops were surplused, however, there was no record supporting them being surplused. Neither Asset Management nor University Technology Services had any record supporting the laptops being surplused. The lack of accountability over attractive or sensitive property increases the likelihood of waste, fraud and abuse.

The University's Property Control Policy 1130.010 *Property Control* defines Attractive/Sensitive property as "… tangible personal property that costs less than $5,000 and can be characterized as 'walk away' items". The Policy further describes these items as prone to theft because they are either not secured, are easily portable, contain new technology and/or they are adaptable for personal use. The Policy offers such items as audio visual equipment, televisions, projectors, communication equipment, cellular phones, data processing equipment, laptops, computer peripherals, scanners, cameras, and lab equipment as examples. In evaluating attractiveness in the context of their own environment the factors they are asked to consider include the security of the property location, the size and portability of the item, and its potential resale value if stolen. The University Property Control Manual requires attractive items to be marked as University property and catalogued by the user department. Special property tags are available upon request from Asset Management.

Recommendation

EEI/IHRC should:	
7.1	Ensure that attractive property is properly accounted for.

Management Response/Action Plan:

7.1 The EEI administrative staff will develop a flow chart outlining procedures for the purchase of attractive property, placing the property in the internal log, and monitoring the equipment to ensure that it has not been misplaced or stolen.

Implementation date: July 2015

8. Operations Manual

During the audit we noted that the Institute did not have an operations manual addressing various areas of the Institute's administration. A comprehensive operations manual provides direction to new personnel, is a ready reference source for all employees, provides clarifications of responsibilities, helps assure consistent applications of management's expectations, and would help the Institute highlight the major areas of the its operations while providing day-to-day guidance to the PIs and staff, including a scheduled account review (reconciliation) plan.

University Auxiliary Enterprises Operating Guidelines states that every auxiliary must have written policies and procedures which guide the day-to-day operations of the activity, documents the rate development methodology or other noted information about the activity and directs its business processes. Although the recharge facility follows Recharge Facility guidelines established by the Office of Research and Economic Development, the IHRC operated other auxiliary activities such as conference and seminars.

Recommendation

EEI/IHRC should:	
8.1	Establish Operations Manual addressing the operations of the Institute.

Management Response/Action Plan:

8.1 The EEI will continue to collect operational manuals from other collaborating FIU Departments, such as Purchasing and the Office of Sponsored Research and Economic Development. Additional supplemental documents will be created and stored on the shared administrative drive highlighting the EEI internal process and best practices.

Implementation date: December 2015