



November 29, 2017

TO: The Board of Trustees of the University of Oregon

FR: Angela Wilhelms, Secretary

RE: Notice of Executive and Audit Committee Meeting

The Executive and Audit Committee of the Board of Trustees of the University of Oregon will hold a public meeting on the date and at the location set forth below. Subjects of the meeting will include: the quarterly audit report and institutional information technology.

The meeting will occur as follows:

Thursday, December 7, 2017 at 10:45 a.m.
Ford Alumni Center, Giustina Ballroom

The meeting will be webcast, with a link available at www.trustees.uoregon.edu/meetings.

The Ford Alumni Center is located at 1720 East 13th Avenue, Eugene, Oregon. If special accommodations are required, please contact Jennifer La Belle at (541) 346-3166 at least 72 hours in advance.

BOARD OF TRUSTEES

6227 University of Oregon, Eugene OR 97403-1266 | (541) 346-3166 | trustees.uoregon.edu | trustees@uoregon.edu

An equal-opportunity, affirmative-action institution committed to cultural diversity and compliance with the Americans with Disabilities Act



**Board of Trustees | Executive and Audit Committee
Public Meeting | December 7, 2017, 10:45 a.m.
Ford Alumni Center | Giustina Ballroom**

Convene

- Call to order, roll call
- Approval of September 2017 EAC minutes (Action)

1. Status of Information Technology at the UO: Jessie Minton, Chief Information Officer

2. Quarterly Audit Report: Trisha Burnett, Chief Auditor

Meeting Adjourns

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Agenda Item #1

Information Technology

Information Technology Foundational Priorities to Achieve *Excellence*

Strategic Vision

UO will strive to create a collaborative and secure IT environment that attracts and retains the best students, faculty and staff by providing a common foundation of anytime/anywhere technology access for all UO "citizens" and that focuses on strategically funding targeted technology capabilities to support its learning and research goals.

Priorities and Goals (three-year horizon)

Execute Transform IT <http://transformit.uoregon.edu>

Transform IT is the University of Oregon's program that will rationalize the use of information technology resources on campus to better support the University of Oregon's strategic academic and research missions. The university currently has in excess of 29 unique IT departments on campus, resulting in inefficient use of resources, fragmentation of work, and duplication of tools, processes, and services, as well as disparity among academic, research, and administrative units with regard to levels of service received.

Transform IT will increase the level of IT maturity while creating equity in core IT services provided. The program will also establish effective organizational structures and enhance current governance, and provide transparency for IT investments. The rationalization of services will also result in savings across the university that can be strategically reinvested.

Selection criteria:

- The enhancement of UO's IT infrastructure is identified in *Excellence*, the 2016-2021 strategic framework for the UO, as one of the university's four institutional priorities and foundational to the achievement of university goals
- Institutional budget constraints dictate that we can no longer afford duplicative services to campus at the expense of core infrastructure and technology needs
- The improvement of student access, retention, and success is dependent upon better use of data, and, by extension, campus applications containing data
- Enabling a more data-driven approach to assessment of teaching, student engagement, and overall campus environment is dependent upon this foundational effort

Success criteria:

- Rationalization of IT services across campus to ensure that those which are most cost effectively provided in a centralized approach are aligned in accordance with the IT Charter.
- Enhancement of current IT governance model to ensure that governance continually focuses on prioritizing, funding, and driving IT services valued by the campus community
- Mobilization of collaborative cross-campus constituencies to identify and address common goals

- Development of a process to ensure sustainably funded, secure, and robust underlying technology infrastructure, which is foundational to providing all other technology services
- Leveraging of rationalization savings to fund strategically targeted projects
- Attainment of consistent and strong executive support to ensure that the forthcoming IT Strategic Plan (described below) is supported and fully funded over the long-term

Develop an IT Strategic Plan for a rolling 5-year period

As UO continues to push forward to attain its strategic objectives as outlined in *Excellence*, including the execution of the Knight Campus for Acceleration of Scientific Impact, the Presidential Initiative in Data Science, and UO's Online Education initiative, information technology must have a defined strategy aligned with those objectives, designed to enable the achievement of our vision.

Selection Criteria:

- While *Excellence* is an aspirational strategic framework for the university, in order to be positioned to enable achievement of these goals, IT must have a strategy
- Today, we have competing needs against unevenly distributed resources, and unstable funding sources for core foundational infrastructure
- In an environment of limited resources and a multitude of demands, IT must be able to describe to campus how it is positioned to meet current demands, how funding priorities are established and defined, and how it is scaling for the future
- With the addition of compelling science drivers, it becomes more critical that we define an IT strategy to balance support for research, academics, and outreach, while enabling the campus to become a preeminent research institution

Success criteria:

- Development of a strategic plan for the next 5 years, and a deliberate reassessment and adjustment of the plan on an ongoing basis (every 2 years) to support changing institutional needs
- Define an infrastructure strategy, including technical approach, funding, replacement planning, and expansion to support UO's mission and future
- Define base levels of IT support for all UO faculty and staff, and a sustainable financial structure to support it on an ongoing basis
- Define an organizational security strategy to support research and academics, and enable attainment of federally funded grants in line with the university's strategic research goals

In collaboration with Oregon Health & Science University, Oregon State University, Portland State University, and the State of Oregon, implement a competitive data network for research and education in Oregon

Nationally, research networks are transmitting data and peering with other institutions at 100Gb capacities. Our statewide infrastructure, the Network for Education and Research in Oregon (NERO), which is run by UO, has fallen behind nationally. Oregon institutions can only get 10Gb connections in

the Willamette Valley and must share 10Gb connections with competing traffic statewide. The existing 100Gb connections to national and regional research networks in Portland and Eugene are unreachable due to NERO's current capability, and, as such, our Oregon institutions are not competitive with our peers at a research connectivity level. For the UO specifically, this has become an impediment to recruitment, and a barrier to advancing science.

Selection Criteria:

- Our west coast neighbors are moving far ahead of Oregon and are setting the pace globally in terms of research connectivity
- This issue represents more than our network connectivity; it represents our national presence in the research community
- We are not able to be a full partner in national data-intensive research projects (e.g., genomics, imaging, data science, earth sciences) due to data transit limitations
- Transoceanic data cables land at multiple points in Oregon, but largely pass through the state – no opportunity for traffic exchange or enhancement of our international academic partnerships due to inadequate infrastructure

Success criteria:

- Development and implementation of a high speed 100Gb research network core connected to Washington, California, and Idaho, and a statewide 10Gb network connecting government, education, libraries, and non-profit organizations
- Deep, long-term collaboration amongst Oregon universities and the State of Oregon Dept. of Administrative Services (DAS) and Dept. of Transportation (DOT) to leverage economies of scale
- Collectively get more bandwidth and footprint for similar annual cost on a per-institution basis
- Full participation in national data-intensive research projects such as those supported by the Pacific Research Platform (PRP) and NOAA N-Wave
- Statewide bandwidth for data-intensive research involving Big Data, the Internet of Things (IoT), and distributed field science
- Broader impact on research through community engagement, education, and economic development



Information Technology Board of Trustees Report

December 7, 2017

Presenter: Jessie Minton, Vice Provost and Chief Information Officer

Agenda

- Introductions
 - Leo Howell, Chief Information Security Officer
- Recap of commitments and update
- Current state of IT
- Foundational priorities for IT to enable UO to achieve *Excellence*

Progress to date

since March 4, 2016 Board of Trustees meeting

Information Technology Vision

UO will strive to create a collaborative and secure IT environment that attracts and retains the best students, faculty and staff by providing a common foundation of anytime/anywhere technology access for all UO 'citizens' and that focuses on strategically funding targeted technology capabilities to support its learning and research goals.

To achieve this vision, the University of Oregon must:

- Ensure that a collaborative IT Governance Model is deployed that continually focuses on prioritizing, funding and driving community-valued IT services
- Recognize that having a secure and robust underlying technology infrastructure is critical to providing all other technology services
- Identify cross-campus core IT services that are more cost effectively provided in a centralized approach and use the potential savings to fund strategically targeted projects
- Mobilize collaborative cross-campus constituencies to identify and address common goals
- Streamline our administrative processes and systems to provide more seamless and automated service to all campus stakeholders
- Have consistent and strong executive support to ensure that the IT Strategic Plan is supported
- Excite students and faculty to leverage technology to improve learning and research outcomes

Commitments and Progress

Work groups and charge as of March 2016:

Group	Charge
IT Governance	Develop an IT governance model that will select, prioritize, and provide oversight on major technology investments & policies
Leveraging Resources	Make recommendations for consolidation & integration of functions & services
Technology Investments	Develop recommendation for strategic investments with a funding range of \$2.75-\$4 million

Governance – as of May 2017

Provost

Information Technology
Steering Committee

IT Directors Committee

Governance – Progress since May 2017

- Identified remaining challenges with current structure:
 - Members of campus may be surprised by IT policies
 - Stakeholders are resisting using IT solutions or are developing shadow IT projects and systems
 - IT organizations want more meaningful collaboration with campus and would like to increase transparency around decision making
 - Central and distributed IT units are purchasing and deploying duplicative IT technologies and services
 - IT organizations are unsure how to best allocate resources to meet stakeholder needs
 - IT needs to shift to be viewed as a strategic partner in achieving the institution's mission

August 2017 Governance Retreat

Goal: 2 days of focused, campus-wide engagement to recommend structure for IT governance that will be:

- Strategic
- Enable community input and decisions
- Enable management of IT assets
- Guide community utilization of IT assets
- Flexible

Outcome: Recommendation to the IT Steering Committee for enhanced structure that will provide:

- **Alignment of** IT decisions with institutional mission and stakeholder needs
- **Improved** communication among the IT community and between IT and the rest of the institution
- **Assurance of** stakeholder buy-in into policy decisions and IT budget and project priorities
- **Integration of** risk management into IT decision making

August 2017 Governance Retreat

Proposed Structure

Provost

IT Steering
Committee

Enterprise Applications,
Infrastructure & Architecture,
Information Security, Data
Governance, Research
Technology

Domain Sub-
Committees

Banner, Canvas, CRM, Data Centers,
Storage and Virtualization, Email
and Calendar, User Support, and...

Service Advisory
Boards

August 2017 Governance Retreat

Provost

Advisory scope:

- to Provost on new funding recommendations
- to CIO on allocation of existing funding sources for new strategic projects

IT Steering
Committee

Advisory scope:

- to CIO and/or ITSC for requests for new funding, new service additions
- to service owner on allocation of existing funding sources for existing service improvements up to \$100K

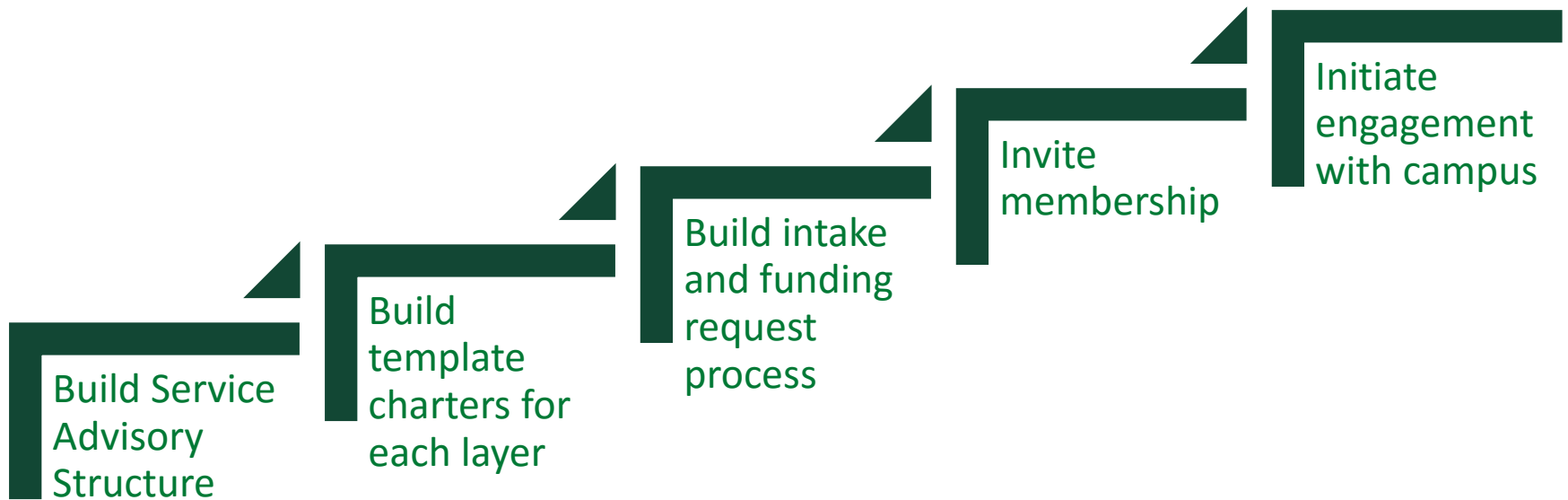
Domain Sub-
Committees

Advisory scope:

- to CIO and/or domain sub-committees on upgrades or funding requests for additional functionality or service offerings
- to service owner on prioritization and approval of modifications/work to be done within existing staff allocated to service

Service
Advisory
Boards

Governance – next steps



Timeline: goal for approval by existing IT Steering Committee and Provost in January 2018

Leveraging Resources – as of Nov 2017

Transform IT

July 2016

- Harvey Blustain report published with recommendations for consolidation

July 2016 – May 2017

- **Transform IT** project launched to campus
- IT Charter developed to describe role and scope of future responsibilities between Information Services and UO Libraries

May 2017

- Vice Provost and CIO on campus
- IT Charter approved

November 2017

- Hiring under way for project resources
- Project management methodology identified and implemented
- Campus communication strategy in place

Technology Investments – as of Nov 2017

March 2016	\$3.3m recurring investment identified for IT
\$2 million (\$300k recurring)	Infrastructure: Implemented campus core network redesign, moving from 2 core switches to 4 network core switches, enabling campus redundancy, and allowing for high speed (100Gb) zones to targets areas of campus, with remaining areas at 10Gb. Remaining redesign work in progress.
\$80,000 (\$50,000 recurring)	Security (two-factor authentication): Duo Two-Factor Authentication is live in production for access to high risk services. Planning under way for further roll out in partnership with Information Security Office.
\$17,000 recurring	Security (training): Securing the Human purchased and made available to campus. New Chief Information Security Officer charged with campus-wide security training program development in 2018 and beyond.
\$50,000 recurring	Security (security info/event management tool): ArcSight live in production as of spring 2017. Now using intelligence to determine security compliance issues within campus environment.

Technology Investments – as of Nov 2017

<p>\$548,000 (\$271k recurring)</p>	<p>Strategic Initiatives (workflow system): ECMS (DuckDocs) system live. Graduate employee hiring process improved automated as initial service live. Actively working on process migrations from legacy system and identifying new opportunities to automate.</p>
<p>\$75,000 recurring* *costs escalate with user count. Currently \$135k/yr.</p>	<p>Strategic Initiatives (IT Service Management): TeamDynamix (UO Service Portal) live in production in August 2017 to subset of campus IT departments. Remaining departments being migrated to tool in 2018-2019.</p>
<p>\$10,000 recurring</p>	<p>Strategic Initiatives (content delivery network): Research currently underway for appropriate product for campus.</p>
<p>\$15,000 recurring</p>	<p>Strategic Initiatives (web services and data integration): Selected and deployed API gateway service (Microsoft Azure). First API in production targeted by end of calendar 2017. Collaborative work with College of Arts and Sciences IT, and Student Life IT.</p>
<p>\$75,000 (\$4000 recurring)</p>	<p>Strategic Initiatives (Banner 9 migration): Completed initial assessment of local modifications. Upcoming vendor consultation for Registrar office process evaluation for modification reduction and new feature usage. Technical work to migrate base code and customizations under way. Completion end of calendar 2018. 18 of 33</p>

Technology Investments – moving forward

- Process now established to leverage governance structure to allocate annual \$2.285 million in funding from technology fee
 - Collaborative with UO Libraries
 - Engages campus through proposed governance structure
- Transform IT:
 - Process will establish total cost of ownership for IT services on campus, providing visibility into actual overall technology investment
 - Savings process established: funding available from rationalization of services will be allocated through governance process

Current state of IT

Collaboration and Engagement

- Engaging campus:
 - <http://transformit.uoregon.edu>
 - Quarterly town hall meetings on IT
 - Presentations to Senate, OA Council
 - Periodic retreats to focus on topics (i.e. governance)
 - Skip levels with IT staff
 - Regular engagement with Deans, IT Directors
- 100Gb statewide research and education network for Oregon
 - Partnership with Oregon State, Portland State, Oregon Health & Science University, and State of Oregon
 - Steve Huter, Director of Network Startup Resource Center, is advising

Partnership on Strategic Priorities

UO's strategic initiatives require deep IT partnership and a robust infrastructure:

- Knight Campus for Accelerating Scientific Impact
- Presidential Initiative in Data Science
- UO Online Education Initiative

Staffing & Key Recruitments

- Chief Information Security Officer search complete
 - Leo Howell begins December 11th
- Recruitment open for Chief Technology Officer
- Information Services restructure completed
 - Positioned well for Transform IT changes

Foundational Priorities

Setting UO up for *Excellence*

Transform IT

Transform IT is the University of Oregon's program that will rationalize the use of information technology resources on campus to better support the University of Oregon's strategic academic and research missions.

- Currently 29+ unique IT departments on campus
 - Inefficient use of resources
 - Fragmentation of work
 - Duplication of tools, processes, and services
 - Disparity among levels of service received for academic, research, and administrative units
- Transform IT will:
 - Rationalize the use of IT resources on campus and increase the level of IT maturity
 - Create equity in core IT services provided
 - Establish effective organizational structures and provide transparency for IT investments
 - Provide savings across the university that can be strategically reinvested

Transform IT

2018

- Complete IT service inventory for campus including customers served, scope of service, staffing required to provide the service, and cost
- Alignment of duplicative services on campus by “like” offering

2019 - 2020

- Decision on service migration to IS, Libraries, or remain in place as generally aligned with IT Charter
- Service by service migration projects to enterprise offerings as appropriate

Ongoing

- Leveraging campus governance to ensure duplicative services and shadow IT do not proliferate in future
- Engage campus to ensure feedback, service alignment with strategy
- IT remains a strategic asset to enable *Excellence*

Oregon Fiber Partnership

Collaboration with Oregon Health & Science University, Oregon State University, Portland State University, and the State of Oregon, implement a competitive data network for research and education in Oregon:

- Nationally, research networks are transmitting data and peering with other institutions at 100Gb capacities
- Our statewide infrastructure, the Network for Education and Research in Oregon (NERO), has fallen behind nationally
- Oregon institutions can only get 10Gb connections in the Willamette Valley and must share 10Gb connections with competing traffic statewide
- The existing 100Gb connections to national and regional research networks in Portland and Eugene are unreachable due to NERO's current capability, and, as such, our Oregon institutions are not competitive with our peers at a research connectivity level
- For the UO, with the addition of the Knight Campus for Accelerating Scientific Impact, the Presidential Initiative in Data Science, and our High Performance Computing facility, this has become an impediment to recruitment, and a barrier to advancing science

Oregon Fiber Partnership

Year 1 Implementation

- 100Gb in Willamette valley and initial coastal communities

Year 2 Implementation

- Connect Department of Administrative Services and Network for Research and Education in Oregon statewide sites

Year 3 Implementation

- Connect remaining statewide sites

IT Strategic Plan

As UO continues to push forward to attain its strategic objectives as outlined in *Excellence*, information technology must have a defined strategy aligned with those objectives, designed to enable the achievement of our vision.

- In order to be positioned to enable achievement of goals in *Excellence*, IT must have a forward looking strategy
- Today, we have competing needs against unevenly distributed resources, and unstable funding sources for core foundational infrastructure
- In an environment of limited resources and a multitude of demands, IT must be able to describe to campus how it is positioned to meet current demands, how funding priorities are established and defined, and how it is scaling for the future
- With the addition of the IT dependent strategic priorities it becomes more critical that we define an IT strategy to balance support for research, academics, and outreach, while enabling the campus to become a preeminent research institution

IT Strategic Plan

Goals by end of calendar year 2018:

- **Develop a strategic plan** for the next 5 years, and a deliberate reassessment and adjustment of the plan on an ongoing basis (every 2 years) to support changing institutional needs
- **Define an infrastructure strategy**, including technical approach, funding, replacement planning, and expansion to support UO's mission and future
- **Define base levels of IT support** for all UO faculty and staff, and a sustainable financial structure to support it on an ongoing basis
- **Define an organizational security strategy** to support research and academics, and enable attainment of federally funded grants in line with the university's strategic research goals

Questions?

Agenda Item #2

Quarterly Audit Report

Audit report added as a supplemental item on

December 7, 2017



UNIVERSITY OF OREGON

Office of Internal Audit Quarterly Report

December 2017

*Report to the Board of Trustees of the University of Oregon
Executive and Audit Committee*

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SUMMARY

The Office of Internal Audit (“Internal Audit”) provides a quarterly report to assist the President and the Executive and Audit Committee with their oversight responsibilities for Internal Audit.

Internal Audit will ensure the administrative goals for the year are met, while completing projects from the approved audit plan. The previous quarter has been very productive. Campus outreach for consulting projects has increased, demonstrating management’s view of Internal Audit as a partner in process improvement. While these additional consulting efforts have affected progress on assurance projects in process since last quarter, the overall audit plan is still on track. Internal Audit is working on five assurance projects, as well as four consulting projects, at various stages of completion.

If there are any questions regarding the content of this report, I am available for discussion. Thank you for your work and your continued support of Internal Audit.

PROJECTS

ASSURANCE

Accounts Payable Practices and Controls

Internal Audit began this project in late January. The objective is to evaluate the internal control structure of the central function. Initial planning phase has been completed and appropriate procedures have been identified. This project is currently in the reporting stage awaiting management’s responses. *Estimated completion: December 8, 2017*

Cash Handling

Internal Audit began this project in late February, but the project was put on hold to engage in consulting projects requested by management. The objective is to evaluate the internal control structure of the processes used by the campus, as established by the Business Affairs Office (BAO). This project is currently in the fieldwork phase. *Estimated completion: January 15, 2018*

Nonretaliation Policies

Internal Audit began this project in August. The objective is to evaluate the compliance and effectiveness of current University policies regarding retaliatory behavior. This project is currently in the fieldwork phase. *Estimated completion: January 15, 2018*

Electronic Proposal Clearance System (E-PCS)

Internal Audit, in collaboration with Baker Tilly, began this project in August. The objective is to perform an audit of general controls over the system used to manage and track grant data. This project is currently in the reporting phase, as Internal Audit and Baker Tilly have prepared a draft report for review and response by management. *Estimated completion: December 31, 2017*

Research Cybersecurity Compliance

Internal Audit, in collaboration with Baker Tilly, began this project in August. This project was identified after the audit plan for fiscal year 2018 (“FY18”) was approved in June. The objective is to perform a review of grants with specific cybersecurity requirements to ensure compliance. This project is currently in the fieldwork phase, as Internal Audit and Baker Tilly are testing a sample of awards. *Estimated completion: December 31, 2017*

CONSULTING

Internal Audit is working on five consulting projects for different units on campus that are at various stages of completion, and has finalized two. While these projects take time away from planned assurance projects, they serve three very important purposes, 1) to improve efficiencies and effectiveness in a proactive manner, 2) to reinforce Internal Audit’s purpose to be a valuable partner, and 3) to provide Internal Audit with more insight regarding campus risks. Areas addressed include physical security, internal controls, process improvement and identification of efficiencies. Once finalized, reports are issued summarizing the results.

ONGOING PROJECTS

Consulting: The FY18 audit plan included time for consulting activities. This is an area that Internal Audit has emphasized and pursued heavily in recent months. As opportunities arise Internal Audit offers this service and it has been well received by the University community. Internal Audit continues to offer training on internal controls, risk, and fraud awareness and recently presented at the Financial Stewardship Institute. Additionally, Internal Audit has developed a training series on the COSO Internal Control Framework that will begin in January. Internal Audit offers facilitated internal control self-assessments as a service for the campus, as well as continues campus outreach and presentations to reach new audiences and introduce new concepts.

External Audit Coordination: Internal Audit is charged with coordinating and providing oversight for other control and monitoring functions, including external audit. Moss Adams, LLP is the external firm responsible for the university’s financial statement audit, single audit, and NCAA agreed upon procedures. During the past quarter, Internal Audit met with Moss Adams to continue information sharing as the audits for FY17 (financial statement and federal compliance) and agreed-upon procedures were finalized. These statements were issued on October 27, 2017.

FOLLOW-UP PROJECTS

Internal Audit will be performing follow-up work on completed projects to ensure any audit findings and action plans are implemented. No follow-up projects were initiated in this quarter. Internal Audit has developed a methodology for tracking and reporting on follow-up projects.

HOTLINE SUMMARY

Internal Audit has received the following requests for investigative services during the current fiscal year. Of these, two have been completed, three are in progress, and two were referred to other units.

Reporting Sources for FY18 Investigative Services	
Campus Direct to Internal Audit	2
3rd Party Hotline	5
Grand Total	7

It is common for a university our size to have an active hotline. Peer institution benchmarking indicates the activity is comparable. However, in order to ensure the campus community remains aware of this reporting mechanism, Internal Audit continues marketing and outreach efforts.

ADMINISTRATIVE

To provide a foundation for the direction of the office, Internal Audit created a strategic plan. Through this process, the mission was updated, and a vision and specific goals were incorporated. Administrative items, such as outreach on campus and involvement in national organizations, were included as goals and specific action items to achieve these goals were included within the plan. An implementation schedule was developed to ensure the strategic plan was achieved. At this time, all action items are on schedule.