UNIVERSITY OF OREGON

September 1, 2016

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, an amendment to the Internal Audit Charter, and an update on university IT and computing priorities.

The meeting will occur as follows:

Thursday, September 8, 2016 at 1:15 pm
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 Amanda Hatch at (541) 346-3013 at least 72 hours in advance.

UNIVERSITY OF OREGON

Board of Trustees of the University of Oregon
Executive and Audit Committee
Public Meeting
1:15 pm – September 8, 2016
Ford Alumni Center, Giustina Ballroom

Convene

- Call to order, roll call
- Approval of June 2016 EAC minutes (Action)

1. **Quarterly Audit Report and Amendment to Internal Audit Charter (Action)**: Trisha Burnett, Chief Auditor

2. **University IT and Computing Priorities Update**: Scott Coltrane, Senior Vice President and Provost; Chris Krabiel, Interim CIO; Adriene Lim, Dean of Libraries

Meeting Adjourns

Agenda Item #1

Quarterly Audit Report &
Amendment to Internal Audit Charter

Note: The quarterly audit report will be provided at the meeting.

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Internal Audit Charter

Summary of Proposed Action

In September 2014, the Board approved an Internal Audit Charter (Charter), the guiding document for the Office of Internal Audit (OIA). The original Charter indicates that the OIA will use standards set forth in both the "Red Book" and the "Yellow Book," two sets of professional auditing standards. The Red Book is the International Professional Practices Framework (from the Institute of Internal Auditors or IIA) and the Yellow Book is the Generally Accepted Government Auditing Standards.

Including both "books" in the Charter at the OIA's inception was an unnecessary complication. The difference in auditing standards between the two are minimal, centered primarily on the definition and documentation of independence, professional education, and peer review requirements. An analysis of peer institutions (in and out of Oregon) and other government entities in Oregon shows that nearly all of these organizations use only the Red Book as their official standard.

The Yellow Book discourages advisory work, referring to it as 'nonaudit services.' Extensive evaluations and documentation are required to overcome the assumption that advisory services impair an auditor's independence. The Red Book recognizes advisory services within the definition of internal auditing. Mandatory adherence to the IIA's Code of Ethics incorporates expectations of independence/objectivity.

With regard to peer review requirements, the difference between the two is a five year timeline (Red) versus a three year timeline (Yellow). Nothing precludes the Board from asking for a more frequent or interim review. With regard to professional development courses, staff in the OIA conduct rigorous professional development and education, meeting all requirements for certification and engaging in other opportunities such as conferences, regional networks, and best practice reviews. There is no reason to believe that following Red Book standards in these areas would be a detriment to the UO, the OIA, or OIA staff.

Proposed changes are slight and appear in red as strikethrough text (deletions) and underlined text (addition) in Exhibit A of the resolution.

Executive and Audit Committee
Board of Trustees of the University of Oregon

Resolution: Amendments to the Internal Audit Charter

Whereas, the University of Oregon is governed by and the business and affairs of the University are ultimately managed by the Board of Trustees;

Whereas, the University of Oregon takes seriously the responsibility to manage, invest and spend resources;

Whereas, the University has created an Office of Internal Audit to provide independent, objective evaluations and advisory services that add to the accountability of the UO;

Whereas, the Office of Internal Audit seeks to operate within widely accepted standard of international audit and those standards employed by other government entities and institutions of higher education;

Whereas, the Charter of the Office of Internal Audit should reflect the most effective and appropriate standard of operation for the Office;

Whereas, the Board's Policy on Committees authorizes the Executive and Audit Committee to act on behalf of the Board when appropriate;

NOW, THEREFORE, the Executive and Audit Committee of the Board of Trustees of the University of Oregon hereby approves the amendments to the University of Oregon Internal Audit Charter as outlined in the attached Exhibit A. The Committee further directs the Officers of the University to take all actions and steps deemed necessary and proper to implement the amendments.

Moved: _____

Seconded: _____

Trustee	**Yes**	**No**
Bragdon		
Ford		
Kari		
Lillis		
Ralph		
Wilcox		

Dated: _____

Recorded: _____

EXHIBIT A

PROPOSED CHANGES TO THE OFFICE OF INTERNAL AUDIT CHARTER

[All other sections of the Charter are redacted for purposes of this Exhibit. There are no proposed changes to those sections.]

Standards of Internal Audit Practice

The Office of Internal Audit will meet or exceed the Institute of Internal Auditors (IIA) standards for the Professional Practice of Internal Auditing. The internal audit activity recognizes the mandatory nature of the definition of internal auditing, the code of ethics, and the IIA standards.

The Office of Internal Audit operates within the context of the IIA's International Professional Practices Framework *("Red Book")*, IIA's Code of Ethics, ~~Generally Accepted Government Auditing Standards *("Yellow Book")*~~, Committee of Sponsoring Organizations of the Treadway Commission (COSO) control framework, and the Office of Internal Audit's procedure manual. Additionally, the Office of Internal Audit considers the Generally Accepted Government Auditing Standards ("*Yellow Book*").

The Office of Internal Audit will undergo external peer reviews pursuant to the *International Standards for the Professional Practice of Internal Auditing* ~~and *Generally Accepted Government Auditing Standards* of the U.S. Government Accountability Office~~. The Executive and Audit Committee shall have input into peer reviews and results of peer reviews shall be made available to the Committee upon completion.

Agenda Item #2

University IT and Computing Priorities Update

Glossary of Terms

Please find listed below brief descriptions of selected topics presented as part of the September 8, 2016 IT Strategic Update to the Board of Trustees. The information provides a brief description of each of these topics and or strategic investments. Listed in slide topic order.

Core network switches
The switches that connect every wireless device and wired computer to the university's network and the Internet. They are a vital part of the network, thus the "core" label. New core network switches greatly improve network reliability and network speed, which is critical for researchers using large data sets.

SIEM: Security Information and Event Management
A system to monitor, aggregate, and correlate security information from security devices, networks, and computers. The SIEM greatly reduces the time it takes to discover and remediate potential information security incidents including malware infections and data breaches by automating much of the work that is currently done manually.

FireEye
A security appliance that detects both known and unknown attacks with high accuracy while generating low rates of false positives. It is complimentary to the SIEM. The appliance analyzes web traffic in an isolated, virtual environment to detect known and newly-announced security exploits, malware and complex attacks. Security staff are notified when FireEye sees suspicious traffic.

Our current FireEye security appliance has been in place for seven years. The new FireEye appliance will be installed by early September 2016. The new device will allow us to review at least four times the amount of network traffic than that of our current appliance.

Two-Factor Authentication
Adds extra security for services that contain sensitive data. Two-factor authentication uses two items you already know—your username and password—with a third item that is generated for that login and is available for only a short period of time. Users will get this temporary "password" via cell phone or through several other methods. Two-factor authentication is a security best practice for systems that hold sensitive data and is recommended by IT risk audits.

Security Awareness and Training (*SANS Securing the Human*)
Provides organizations with complete and comprehensive security awareness training, enabling us to effectively manage their human cybersecurity risk. The system will provide online training for all UO employees, educating our employees on security issues such as how to spot a "phishing" email that is trying to trick you into giving away your username and password.

Workflow (sometimes referred to as ECMS, or Electronic Content Management System)
A new set of software tools that enables the university to redesign business processes and create streamlined, electronic workflows for current time-intensive paper-based processes. The university has a number of cumbersome paper workflow processes subject to error requiring manual processing. Workflow will first be deployed for GTF contracting, which is currently a manual process with an estimated 75% error rate. Workflow also replaces a deteriorating document imaging product that is a key part of the university's admissions and registration processes.

ITSM: IT Service Management
A set of IT industry best practices for creating, deploying, managing, and improving IT services. An ITSM tool facilitates the use of ITSM, which includes better cross-campus communications between IT units and increases the quality of customer service (e.g., creates help desk ticket tracking system). The University of Oregon's current ticketing system, Request Tracker (RT), is a complex, open-source system that requires FTE with subject matter

expertise for maintenance and development. In recent years, Information Services has not had the resources needed to effectively maintain, develop, and support the RT system.

TeamDynamix, the ITSM vendor selected for the university campus, will provide the following benefits in support of consolidation and integration of IT functions and services across campus:

- TeamDynamix is a hosted solution, which significantly reduces the FTE required for maintenance and development.
- TeamDynamix provides an opportunity for economies of scale. Initially, the scope of the ITSM tool will be focused within the IT campus community. In the future, service management and the tool could be expanded to include additional business areas such as Campus Operations, HR, and other units that provide services within UO. This would allow campus staff who handle service requests to be on a single platform.
- Support more efficient use of resources (people and financial) across multiple IT units through improved handling of service requests, integrated workflows, a robust ticketing system, traceability of service outages and system changes (incident management and change management, respectfully, in ITSM parliance), enabling and supporting current and future processes, providing metrics and reporting capabilities on effectiveness, etc.
- Will help facilitate faculty, staff, and students receiving new or improved IT service, as well as a more standardized, efficient experience.

Allen Hall Data Center Colocation Facility
Facility that allows departments to place a new or existing server in a rack in the Allen Hall Data Center — a monitored, physically secure, environmentally controlled, energy-efficient facility. Services include high speed network connections, redundant power and cooling, firewalls and other security options. The Allen Hall Data Center is designed to accommodate uninterrupted 24x7 operations, allowing departments virtual and physical access to manage their servers and the services they provide. It is available to academic, research and administrative units on campus.

The prior lack of available data center space resulted in a proliferation of small “data closets” and other spaces that generally do not meet baseline requirements for security, availability, and efficiency. The Allen Hall Data Center facility will assist academic and research units improve the reliability of the services they offer, while reducing the risk to their data and improving overall campus efficiency. Consolidating the “data closets” would create economies of scale in energy to cool and power the rooms and network security configuration. The larger scale of the new data center gives academic and research groups on campus the ability to grow their operations.

High Performance Computing
High Performance Computing (HPC) typically refers to the use of large-scale computers, or supercomputers, to solve complex computational problems. These supercomputers can be thought of as a cluster of smaller computers, each having the processing power of a production-level desktop computer, acting collectively to solve partitions of a larger problem in parallel. Thus, computational problems that would take years to finish on a single desktop can be solved using HPC in weeks, days, or even hours. The increase in computational power has been influential in almost all fields of research including hard and natural sciences through large-scale simulations and analysis, but more surprisingly, insights into social sciences and the humanities through natural language processing and text analysis. A side effect of increased computational power is the explosion of data and the rise of data-driven research and discovery. The immense size of data sets generated through the use of supercomputers is driving the development of new techniques for data understanding, most often in the areas of visualization and machine learning. Because of the close coupling of generated data and data understanding, HPC may refer not only to the computational machine used to create data, but also the processes necessary to move data into knowledge.

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IT Strategic Planning Update

September 8, 2016

Scott Coltrane, Provost
Adriene Lim, Dean of UO Libraries
Chris Krabiel, Interim CIO

Quarterly IT Strategic Updates – March 4, 2016

- IT Strategic Planning
  - Investment update
  - Security
  - Governance
  - HPC
  - Harvey Blustain Consultation
    - Transition Goals
    - Implementation

IT Strategic Projects

Investment	Cost	Update
IT Infrastructure : Core Network Equipment Switches	$2,000,000	Vendor selected August, Faculty Interviews
IT Infrastructure : E-Mail, Data Center consolidation, and other investments	$587,000	Pending Network evaluation
Security: Security Information / event Management (SIEM) $250,000	$50,000	Installation completed August
Security: Two-Factor Authentication	$80,000	System selected, moving to purchasing phase
Security: Awareness Training	$17,000	Purchased, October launch

See March Presentation Pages 5, 25-27

IT Strategic Projects

Investment	Cost	Update
Strategic: IT Service Management (ITSM)	$75,000	System selected, Purchasing phase
Strategic: Work Flow	$548,000	Vendor Kick-off meeting August , on-track
Strategic: Banner	$75,000	Planning, anticipated spend January 2017
Strategic: CDN and web services integration	$25,000	TBD

See March Presentation Pages 5, 25-27

IT Risks: Wired Network Infrastructure estimated timeline

Task	Start date	End date
Design review	1 April 2016	Completed
Vendor meetings	16 June 2016	Completed
Vendor Proof of Concept	22 August 2016	9 September 2016
Faculty meetings	In progress	3 October 2016
Define core equipment location	In progress	3 October 2016
Equipment ordering and delivery	9 September 2016	1 November 2016
Fiber installation	3 October 2016	24 February 2017
Core & research switch installation	1 December 2016	28 April 2017

See March Presentation Pages 32 -34

IT Risks: Security

- **Information Security and Policies**
  - Two draft policies in approval process
    - Acceptable Use
    - Security Awareness
  - Three policies approved (presented June 2, 2016)
- **SIEM (Security Information and Event Management)**
  - Installation completed mid-August
  - FireEye security device: upgrade
- **Allen Hall Data Center**
  - Continuing on-boarding servers and communication
  - Baker Tilly – sensitive data review

See March Presentation Page 5

IT Risks: Governance

- **Governance / Leadership**
  - Executive IT Leadership team - weekly
  - IT Directors Committee – monthly
  - Operational and Transition team - weekly

- **Governance**
  - IT Governance Committee, September 13th
    - Co-Chaired by Chris Krabiel – Interim CIO and Adriene Lim, Dean of Libraries

  Charge: Advise the Provost on:
    - Prioritizing the use of available resources;
    - IT Policies; creating and implementing;
    - Oversight of and guidance of campus technology working groups

See March Presentation Pages 13 - 18

High Performance Computing (HPC)
Vendor Selection and Equipment Acquisition

Date	Commentary
11 March 2016	Received bids from six vendors: Cray, Dell, HP, IBM, Lenovo, SGI
1 May 2016	Eliminate IBM (needed software not available on POWER processor) and SGI (uncompetitive bid)
12 May 2016	Removed Lenovo from consideration (uncertain partnership opportunities)
12 May 2016	Solicit additional information from HP and Cray
26 May 2016	Make final decision among Cray, Dell, HP – Dell chosen
1 June 2016	Place order for additional support for ACISS
10 June 2016	Complete statement of work and finalize contract obligations.
10 Sept 2016	Equipment delivered
10 Oct 2016	System configured, tested, and ready for use

See March Presentation Pages 32 - 34

High Performance Computing (HPC) Governance and Personnel

Date	Action
12 May 2016	Director position posted (http://jobs.uoregon.edu/unclassified.php?id=5527)
26 May 2016	Draft governance and business-model document available for task force comment
9 June 2016	Final governance and business-model document delivered to VPRI
15 Sept 2016	Estimated start date for Director
30 Sept 2016	Faculty Advisory Committee populated
10 Oct 2016	HPCF open for business

See March Presentation Pages 32 - 34

Harvey Blustain Report: Overview

- *Report is consistent with the consulting reports issued between 2012 and 2015.*
- *Recommends fundamental changes to address:*

Fragmentation	Institutional Objectives
Consistency	Redundant Services

Recommendations

- *Integrate IT* units into central reporting structure
- ***Coordinate Resources*** - strategic investments, services, IT staff, spending and policy

See March Presentation Pages 9-12

Transition Implementation

Implementation phases*

I. Academics - Verification and Assessment
II. Organizational changes: Academics
III. Administration - Assessment and Verification
IV. Organizational changes: Administration

* phases will overlap; process time is 12 to 16 months

See March Presentation Pages 9 - 12

Transition Implementation: Phase 1

- Verification and Assessment
  - Verify and assess services, support, IT professionals and staffing at each unit; transfer budget to central reporting
- MOU to establish clear support offerings and services in Information Systems and UO Libraries
- Strategic Planning
  - Transition Advisory Group –
    - 7 UO representative IT management
- Phase 2: Organizational Changes

See March Presentation Page 9

Next - Quarterly IT Update

- CIO Search
  - Current; search firm selected, anticipate airport interviews November 2016
- Transition Plan Implementation
- Strategic IT Investment
- IT Governance

IT Strategic Process

Thank you