

UNIVERSITY
OF
CALIFORNIA

Office of Ethics,
Compliance & Audit
Services

Annual Report on Internal Audit Activities 2016-17



Office of Ethics, Compliance & Audit Services Annual Report on Internal Audit Activities, 2016-17

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I. EXECUTIVE SUMMARY

Introduction

This report highlights the outcomes of Internal Audit activities in fiscal year (FY) 2016-17 (July 1, 2016 – June 30, 2017) which demonstrate our efforts to assist management to identify and address significant risks and drive efficiencies while providing ongoing assurance to the Regents and other stakeholders. Several programmatic developments and improvements are also featured, as well as statistical information on utilization of Internal Audit's resources and other performance metrics.

Key accomplishments for FY 2016-17 include:

- Systemwide audits to assess compliance with significant new requirements related to minimum wage and outside professional activities (Page 4)
- Establishment of a Cybersecurity Audit Team to deploy expertise across the University system to address this increasingly significant and evolving risk (Page 11)
- Efforts to coordinate with risk partners to facilitate improved identification, assessment and management of key institutional risks (Page 11)
- Improvements to data analytics capabilities that allow our auditors to conduct their work more efficiently and effectively (Page 13)
- Delivery of training and leadership programs to foster continued development of our internal audit staff (Page 14)

FY 2016-17 Statistical Highlights

During FY 2016-17, the UC Internal Audit Program:

- Completed 99% of the Regents-approved Internal Audit plan (goal 70%).
- Completed audit, advisory services and investigation projects resulting in 398 reports.
- Produced 1,004 recommendations for improvements to governance, risk management and control processes with corresponding agreed-upon Management Corrective Actions (MCAs).
- Validated that 967 MCAs were completed by management.
- Operated at an 86% efficiency level (goal 85%)

Summary of MCA balances and past due status:

Summary of MCA Balances and Past Due Status	
Beginning MCAs (open at start of FY 2016-17)	531
Ending MCAs (open at end of FY 2016-17)	568
Past Due MCAs	
High-risk past due MCAs	33
Medium/low risk past due MCAs as of June 30, 2017	151

Summary and Conclusions

We identified no financial control issues that we believed to represent material deficiencies in internal controls to the University system as a whole. Additionally, we identified no circumstances in which we believe that management's decisions resulted in the acceptance of unreasonable levels of risk.

Further, based on our FY 2016-17 work, we can assert the following as being generally true with no reportable exceptions:

1. Management of the University is cognizant of their responsibility for internal controls and takes seriously the need for controls and accountability.
2. There is respect for the Internal Audit Program objectives, a high level of cooperation is received, and there is no interference with either the accomplishment of our tasks and/or our responsibilities to report to the Regents.
3. Management actively participates in the identification of risks and works collaboratively with internal auditors to address issues raised during audits, advisory services and investigations.
4. Management is comfortable seeking out Internal Audit for advice and consultation on matters with internal control implications.
5. Matters of importance are reported to the Regents.
6. Although we did not identify any material control deficiencies, there are opportunities for the University to implement more effective controls in a number of areas.

II. INTERNAL AUDIT PROGRAM – RESULTS & ANALYSIS

A. Systemwide Audit Results

Systemwide audits are conducted for the purpose of reviewing an existing or potential issue across the University system to identify and address common risk areas. Typically these audits are performed at the request of the systemwide audit office, the Regents and/or the President, have a common scope and approach and usually are conducted by the local Internal Audit department at each University location. Overall results are summarized systemwide with key themes identified. Corrective action and associated follow-up is performed at locations and at the systemwide level. The following is an overview of systemwide audits performed.

Fair Wage Fair Work – In support of President Napolitano’s UC Fair Wage/Fair Work Plan that requires minimum wage levels for UC employees and service contract employees, Internal Audit developed and implemented compliance requirements for UC’s suppliers subject to the Fair Wage/Fair Work contract provision, including standards and procedures for a required annual audits. In FY 2016-17, Internal Audit conducted its first annual systemwide audit of the UC Fair Wage Fair Work (FW/FW) Plan. The purpose of this audit was to review contracts executed in the last year to ensure that applicable contracts contain the required FW/FW provision, determine whether procurement units are reviewing and monitoring contractor compliance with the annual certification requirements, and validate that suppliers complied with the annual certification audit requirements.

We found that additional effort is required to fully comply with the UC FW/FW Plan requirements. A number of locations were unclear on the FW/FW requirements and most locations lacked adequate processes to fully identify and track FW/FW contracts and FW/FW exceptions. Despite the efforts of local procurement units to remind suppliers of the annual audit requirement and request the required audit certification, compliance with this FW/FW requirement has been inconsistent. Relevant suppliers were not always providing the required audit certifications timely, and not all campuses were providing timely reminders to help suppliers understand their responsibilities for compliance with the FW/FW clause in their contracts.

Outside Professional Activities – We conducted a systemwide review to assess the adequacy of internal controls over Outside Professional Activities (OPA) requests, approvals and reports as well as to assess compliance with policy requirements. In July 2016, Regental policy was updated to include new approval and reporting requirements and new limits on compensated outside professional activities. While we observed general adherence to OPA policy, we found controls should be strengthened to ensure all OPA requests are reviewed timely and approval is documented. Also, improvements are needed to ensure that data in the system used to track OPA is accurate and updated timely, that SMG questions or clarifications are addressed to ensure compliance, and that policy requirements are consistently followed. Most of the issues we identified related to activities and controls that occurred before the new policy requirements went into effect. We identified relatively few issues related to adherence with the new policy requirements.

Student Health Assessment – Internal Audit facilitated a self-assessment of the Student Health and Counseling Centers (SH&CCs) to assess operations for the risk areas covered in the 2014 audit of the SH&CCs. Internal Audit engaged an outside firm with subject matter expertise to help develop the self-assessment tool, which focused on the areas of governance, credentialing and privileging, peer review, information security and privacy, quality improvement studies, electronic health record system, clinical documentation, medication and vaccine management, provision of care, and occupational safety and health. The self-assessment provided an opportunity for the SH&CC Directors to identify specific strengths and challenges of their centers and to help uncover any issues, concerns, or needs facing the centers individually

or as a group. Accordingly, a number of strategic issues are currently being addressed as a result of this review.

Vulnerability Assessment and Penetration Test Audit – The newly established Cybersecurity Audit Team (CAT) performed a vulnerability assessment and penetration test audit at the 10 campus locations and the Office of the President. The objective of this review was to identify vulnerabilities and perform penetration tests on a sample of high risk systems at each of the in scope locations to provide assurance that vulnerabilities are being managed appropriately to reduce cyber-risk. Based on the testing results the CAT worked closely with the locations to develop management corrective action plans to address the specific vulnerabilities identified in the audit, as well as make improvements to the overall vulnerability management programs to reduce the likelihood of these types of cyber-risks reoccurring at each location.

Executive Travel and Executive Compensation Reporting – Periodic reviews of executive travel expenses and executive compensation reporting have been routine for the last ten years. This year, relatively minor exceptions were noted and were corrected at the local level. No issues were identified that required action from a systemwide perspective.

B. Significant and Recurrent Internal Control Issues

From the body of audit work performed during the year, including investigations, the following are the most significant and recurrent control issues. Many of these are the subject of specific management corrective actions in the environment where the issues were identified; others are the subject of broader systemwide initiatives, while still others are endemic and require continual attention by management.

IT Security and Information Privacy

Issue: Recent high profile cybersecurity incidents within UC and other organizations has brought a heightened sense of awareness and focus on cybersecurity risk and the importance of effective IT security controls. Internal Audit has continued to place significant emphasis on evaluating IT security programs and controls in its annual audit plan. As in prior years, we continue to identify control weaknesses related to IT security and protection of sensitive and restricted information, including lack of IT security risk assessments and security plans, inadequate system access controls, unauthorized access to internal networks and systems, weak password management, unsupported systems and protocols, unpatched vulnerabilities and third party services including cloud services. It is an ongoing challenge to ensure all end users are aware of IT security risks and appropriate mitigation measures. Additionally, the decentralized nature of IT infrastructure and IT organizations, as well as increased utilization of third party IT service providers, makes it challenging to ensure controls are appropriately in place across all environments within the organization.

As technology has evolved, the use of information systems has become an integral component for providing critical services, such as increased reliance on Industrial Control Systems. In addition, changing business requirements have led to increased need to connect critical infrastructure IT systems with other enterprise networks that are connected to the Internet. This remote control exposes critical infrastructure IT systems to cybersecurity risks.

Management's Response: A number of significant efforts are underway at the system level to address IT security risks, including annual cybersecurity awareness training for all faculty and staff across the system, a comprehensive cybersecurity risk assessment, systemwide vulnerability assessments and penetration testing, cybersecurity awareness training for all faculty and staff, formalized cybersecurity incident escalation procedures and enhanced monitoring of network activity.

At the local level, management is working to implement corrective action and new controls to address deficiencies identified. These include centralization of the IT security function, third-party security assessments, enhanced access monitoring controls and multi-factor authentication.

Internal Audit's Involvement: Internal Audit has continued our support of IT security efforts across the system. We have led multiple projects in support of the President's cybersecurity initiative, including a systemwide cybersecurity risk assessment based on the NIST Cybersecurity Framework which was completed in June 2017 and the systemwide vulnerability assessment and penetration testing project which will continue into FY2017-18. We coordinated the deployment of the mandatory cybersecurity awareness training for faculty and staff and facilitate annual technical IT security training for IT and information security practitioners across the UC system. We continue to work closely with other groups, such as Compliance, Risk Services, General Counsel, and Information Security to advance, refine and improve initiatives and processes related to cybersecurity, such as threat detection and identification, new policy development, and incident response and escalation.

Internal Audit has developed a centralized systemwide Cybersecurity Audit Team to enhance our auditing capabilities in this increasingly significant risk area. The Cybersecurity Audit Team is being deployed to the campuses to deliver specialized cybersecurity audits and advisory services and serve to provide independent

assurance and advice on systemwide cybersecurity initiatives. The team is currently comprised of three FTEs—a Cybersecurity Audit Director and two Cybersecurity Audit Specialists.

At the local level, internal audit departments have planned audits and advisory services to address specific IT security risks identified at the location.

Large-Scale System Implementations

Issue: After a successful initial deployment of UCPATH at the Office of the President, the university will be working toward a pilot deployment that will involve up to three additional campus locations and a significant increase in complexity with the inclusion of the academic and health sciences environments. It will become increasingly important to ensure that effective project management, risk management and change management practices are put in place to ensure implementation objectives are met. At the campus level, we continue to observe the effects of the UCPATH Project and other enterprise IT system implementations on the internal control environment as resources are stretched and diverted from other operational priorities. Like UCPATH, many of these system implementations have been initiated to replace outdated existing enterprise systems due to the risks associated with their continued maintenance. While they are very much needed, these large-scale system replacement efforts present significant risks in all aspects of the project, from data conversion and configuration to governance and organizational change management. It is therefore critical that these risks be continuously monitored and managed.

A recent audit from the California State Auditor identified opportunities for improvement related to IT project development best practices and governance and oversight of significant IT projects, including monitoring of project risk, budget and schedule.

Management's Response: Management has put in place governance structures over key system implementation projects to help ensure the success of these projects. These structures help to ensure that issues and risks are escalated and resolved in a timely manner, leadership is kept apprised of project status, and the right individuals are involved in key decisions when needed. In a phased rollout like UCPATH, management identifies lessons learned from early deployments and accordingly modifies its approach in subsequent deployment efforts. Additionally, in response to the recent State Audit, management will be putting in place new guidelines for IT project development and cost reporting for significant IT implementation projects.

Internal Audit's Involvement: During these implementations, Internal Audit partners with management to help ensure that best practices are followed, significant risks are appropriately mitigated, effective controls are in place and appropriate measures have been taken to ensure operational readiness for deployment. Internal Audit served in an advisory role to help ensure the successful implementation initial deployment of UCPATH at UCOP and is currently performing a multi-phased readiness assessment for the pilot deployment. Internal Audit has been assisting management in addressing key issues associated with the UCPATH project, including risk assessment and monitoring, governance, operational readiness, future state process design and information security. Internal Audit staff serve on various oversight committees for UCPATH, including the systemwide UCPATH Steering Committee, to provide real-time insight as implementation decisions are being made. In addition to UCPATH, many of our campuses have ongoing involvement in other key IT system implementations, including electronic medical records systems at our health science campuses and several student information systems.

Staff Turnover and Succession Planning

Issue: Over the past year, multiple campuses experienced turnover in senior leadership, resulting in a significant portion of the leadership team being comprised of individuals in interim roles. Such largescale changes have the potential to impact the organization by creating uncertainty about organizational goals and objectives, and generating anxiety on the part of key stakeholders. Additionally, the effectiveness of internal control, oversight and coordination of campus activities often suffers when turnover occurs in key positions, particularly when inadequate succession planning and transition of responsibilities occurs.

At the staff level, a growing number of experienced personnel are leaving the university, taking with them years of valuable institutional knowledge. Constrained budgets limit the ability to replace these positions with sufficiently experienced staff or the time to fully onboard replacements.

Management's Response: Management is prioritizing the recruitment of key positions to help ensure continuity of key strategic priorities and maintain control and oversight of high risk areas. Many UC locations have developed resources to help facilitate succession planning efforts at the departmental level. Additionally, position control processes have been implemented at several locations to add more structure, discipline and oversight of changes in staff, temporary and contract positions.

Internal Audit's Involvement: Internal Audit has assisted in ensuring adequate internal controls are in place by partnering with management as organizational changes are being planned to document existing controls and providing input on future state process design. Internal Audit can also assist in training staff on internal control responsibilities when they transition to new roles. Periodically our internal audit departments also perform audits to assess the effectiveness of succession planning efforts.

As it relates to senior leadership transition, Internal Audit frequently performs transition reviews for key leadership positions to assess the financial health and effectiveness of controls of the office in transition and to identify potential issues that should be brought to the attention of the incoming executive.

Research Compliance and Clinical Research Billing

Issue: As research compliance requirements continue to become increasingly complex and burdensome, management across the system struggles to maintain compliance with limited resources. Some of the more prominent research compliance risk areas include conflict of interest, laboratory safety, export controls and human subject research. Due to the complexity of clinical research there are inherent risks pertaining to clinical research billing that could result in inaccurate billing and, consequently, potential violations with government payer regulations/contracts. If researchers are unaware of requirements or standards, clinical research billing may not be done compliantly. Continuous improvement is needed to provide reasonable assurance that billing for clinical research activity is accurate, timely and conducted in accordance with policy.

Management's Response: Management's efforts to manage these compliance risks include increased audit reviews, enhanced escalation processes, sanctions for non-compliance, centralized reporting, enhanced training and communication and improved governance, monitoring and oversight mechanisms. Management has addressed risks related to clinical research billing by creating dedicated units to review clinical research billing charges, implementing IT system enhancements to ensure charges are identified and accurately routed, and creating new governance and oversight mechanisms to ensure compliant clinical research billing.

Internal Audit's Involvement: Internal Audit meets frequently with Research leadership to identify and discuss current research compliance risks. Several campuses have recently conducted advisory and audit

projects focused on research compliance and clinical research billing, with additional projects planned for the coming fiscal year.

Decentralization and Inconsistency in Internal Control

Issue: Due to the decentralized nature of campus departments and activities, inconsistency exists in processes and control activities, leading to increased risk and, in many cases, inefficiency. Often these decentralized activities are manual in nature and lack formalized programs and assigned roles and responsibilities to ensure internal controls are designed and functioning as intended. Additionally, departments often lack adequate written procedures to facilitate consistency in controls, contributing to potential risk of fraud. Sustaining controls to preserve and optimize operational and financial objectives can be particularly challenging during significant operational and organizational changes such as shared services centers and large scale system implementations.

Management's Response: To mitigate these risks, campuses are streamlining and centralizing key administrative functions, implementing automated systems and controls where possible, or performing campus-level monitoring of key business activities. Where activities remain decentralized, formalized policies and procedures and background checks help ensure processes and controls are effective.

Internal Audit's Involvement: Internal Audit has planned projects at the departmental level that focus on basic internal controls. Internal Audit also often assists in an advisory capacity with organizational and operational changes that serve, in part, to streamline the control environment. To facilitate increased awareness of the importance of internal controls, Internal Audit frequently provides training on internal control basics and reducing fraud risk.

Financial Management

Issue: While we have observed general improvement in this area, fiscal responsibility and management continues to be an area of high risk for our campuses. Internal Audits of departments and the research enterprise continue to identify issues related to inadequate management of financial deficits. Additionally, we have observed issues related to management's ability to forecast and monitor financial implications of business decisions.

Management's Response: At several locations, we have observed campus leadership implementing coordinated strategies to eliminate deficits. These strategies include new campus-wide financial reporting and monitoring processes, base budget reductions, budget model changes, enhanced training efforts and improved enforcement of policy requirements.

Internal Audit's Involvement: Internal Audit has several planned local projects focused on budget and deficit management in FY18. These reviews will evaluate campus roles and responsibilities for monitoring financial activity versus approved budgets, with an emphasis on accountability and process controls, to determine whether any process gaps need to be addressed. Many location Internal Audit departments have also partnered with management to develop and implement continuous monitoring of key financial metrics through the use of data analytics.

Insufficient Authorization and Documentation of Expenditures

Issue: Recent internal audits have identified issues related to insufficient approval and documentation supporting certain categories of expenditures. Generally responsibility for timely approval of these expenditures is the responsibility of the departments. Inadequate documentation of expenditures increases the risk of inappropriate or fraudulent transactions.

Management's Response: Management has primarily addressed this risk through implementing additional training and communication programs and increased oversight of expenditure processing.

Internal Audit's Involvement: Internal Audit includes a review of controls over expenditures as part of the departmental audits we perform on a regular basis. Many of our internal audit departments provide training on basic controls which addresses appropriate authorization and documentation of expenditures.

Safety

Issue: Ensuring the safety of students, faculty, staff and visitors on campus continues to be a high priority for the organization. Given the decentralized nature of our organization, it is often primarily incumbent on each department and laboratory to ensure that safety-related policies and regulations are followed, which can result in inconsistent levels of control and compliance. Our audit activity has noted some issues related to laboratory safety, including timely completion of laboratory safety self-assessments, completion of required training and timely corrective action on laboratory safety issues. As it relates to campus safety, one of our campus internal audit departments observed that there were insufficient resources in campus risk and safety functions.

Management's Response: Management has addressed the risks related to laboratory safety by implementing mechanisms to continuously track key safety-related metrics. Where issues around resources were identified, management has restructured governance over campus risk and safety functions to ensure adequate resources are dedicated to address this risk.

Internal Audit's Involvement: Several location Internal Audit departments have either recently completed or have planned for FY18 projects to address campus and laboratory safety.

C. Internal Audit's Participation in University Initiatives

Internal Audit has continued to partner with management to support key initiatives and priorities both at the local and systemwide level. This section highlights some of the key areas in which Internal Audit has provided support.

Cybersecurity Audit Team - The Office of Ethics, Compliance, and Audit Services (ECAS) established a new systemwide Cybersecurity Audit Team (CAT) as part of the systemwide internal audit function. The CAT is a specialized team that consists of a Cybersecurity Audit Director and two Cybersecurity Audit Specialists with information security backgrounds. The CAT works with campuses to deliver specialized cybersecurity audit and advisory services and serves to provide independent assurance and advice on systemwide cybersecurity initiatives and programs. This includes:

- Assisting campuses with subject matter expertise to support their local audit plans,
- Performing systemwide audit and advisory service projects focused on areas of cyber-risk across some or all campus locations, and
- Performing audit and advisory service projects in support of systemwide cybersecurity initiatives.

External Audit Support – Internal Audit continued to serve as external coordinator for several high profile audits conducted by governmental agencies such as the California State Auditor, the National Science Foundation and the National Institutes of Health. The external audit coordinator serves as the central point of contact for the auditors of the external agency, facilitates information requests, informs management of potential audit issues as they arise, and coordinates management responses to audit reports. Internal Audit has also assisted management in performing documentation reviews and control testing in advance of external audit fieldwork to help management anticipate and respond to potential issues that may arise during the external audit. External audit coordination has provided a benefit to the University by driving audit efficiency and ensuring appropriate information is provided to agencies in a responsive and timely manner. During FY 2016-17, Internal Audit developed and distributed guidelines on communication protocols that employees should follow during fieldwork for an audit conducted by the California State Auditor.

Coordinating Risk Efforts – At both the systemwide and local levels, Internal Audit has been working to identify synergies and coordinate with Compliance and Risk Services on risk assessment and mitigation efforts. In April 2017, representatives from Internal Audit, Compliance and Risk Services attended the second Risk Partners Joint Planning Meeting. The primary objectives of this periodic meeting are to ensure that roles and responsibilities for risk assessment and monitoring are well defined and effectively communicated to our stakeholders, and to collect and share information as we prioritize our respective activities in a collaborative manner. These meetings also serve to increase understanding of the risk intelligence programs at various locations, address topics of common concern, and continue to promote and model collaboration amongst risk partners.

Additionally, at the systemwide level, Internal Audit, Compliance and Risk Services have been working to develop a common risk assessment framework and taxonomy. Once completed, this framework will help achieve consistency in the risk assessment approach across the system, enabling a roll-up capability to better understand risks from a systemwide perspective. With the adoption of risk intelligence across the system, which among other objectives calls for a common view of risk and a common risk lexicon, UC will benefit from the common framework by further aligning its systemwide approach to managing risk.

Audit Internship Programs – A number of our campus locations, including UCOP have implemented student internship programs. These programs provide our interns, who are mostly UC undergraduate and graduate students, with practical skills development, related training, and work experience in a professional setting.

Additionally, some of our audit departments that have experienced staffing and funding issues have used this program to help augment their existing audit resources.

Systemwide Committees – Internal Audit personnel actively participate on various committees supporting management initiatives throughout the University system, including committees that address Ethics and Risk, IT Governance, Privacy, data analytics, HIPAA compliance, and new systems development projects. Several noteworthy systemwide committees in which internal audit personnel are actively involved include the following:

- Lawrence Berkeley National Laboratory's Contract Assurance Council
- Laboratory Management Council
- Ethics and Audit Committee of the Los Alamos National Security and Lawrence Livermore National Security LLCs
- UCPATH Steering Committee
- Clery Act Compliance Committee
- Independent Review Committee for Outside Professional Activities
- State Audit Implementation Task Force
- Cyber-Risk Governance Committee
- University of California Home Loan Program Corporation Audit Committee

D. Improvements in Internal Audit Methodology, Processes and Expertise

Like many other University departments, Internal Audit operates in an environment of continuous change. To meet the challenges of new regulatory requirements, emerging risks and changes to the University environment, Internal Audit must continue to adapt and improve our methodologies, use of technology, communication strategies and subject matter expertise. This section outlines some of the significant improvements we have made in these areas.

Data Analytics and Continuous Monitoring – Local audit departments have been increasing the use of Computer Assisted Auditing Tools (CAATs) to perform data analytics and data mining as part of Internal Audit projects and ad hoc special projects. These tools allow auditors to perform analysis on entire data populations to identify anomalies and discrepancies for further investigation, rather than relying on traditional transactional sampling methods. At some locations, Internal Audit has worked with management to proactively address control issues and transactional outliers by establishing continuous monitoring practices and processes. In doing so, management is able to provide increased monitoring efforts and in turn helps them to address emerging risks. To facilitate further development in this area, our auditors with specialization in data analytics meet monthly to share information on data analytics application and techniques. Our campus internal audit departments have produced a number of monitoring and risk identification tools such as a financial compliance dashboard and several risk and control reports that are shared among campuses.

Quality Assurance and Improvement Program – Internal Audit performs regular reviews of the UC location internal audit departments to ensure that our practices are in compliance with University of California Systemwide Audit Manual, the Institute of Internal Auditors’ (IIA) International Standards for the Professional Practice of Internal Auditing, and the IIA’s Code of Ethics. Accordingly, we have developed an Internal Audit quality assurance and improvement program (QAIP) that includes both ongoing and periodic reviews designed to provide reasonable assurance to the various stakeholders that the internal audit activity is effective and delivers value to our stakeholders. In FY 2016-17 Internal Audit completed an internal assessment on our investigation processes. The principal objective of the review was to assess investigation activities’ conformance to IIA Standards. Each campus performed an independent self-assessment on conformance based on a set of templates prepared specifically for this review and issued a final report to local management. It was our overall opinion that our UC internal audit investigation program generally conforms to the IIA Standards and Code of Ethics. “Generally Conforms” is the highest rating and means that there is a general conformance to a majority of the individual Standards or elements of the Code of Ethics, and at least partial conformance to the others. Although our campus investigation work and processes complied with the IIA Standards, we did identify several minor opportunities for improvement which we are currently working to implement.

Continuing Education - Providing opportunities for training and professional development is a key priority to ensure that our systemwide staff has the appropriate and sufficient knowledge to address and tackle the ever increasing and evolving risks facing our institution and the higher education industry. In these sessions, we frequently leverage industry subject matter experts, including systemwide staff and members of our professional organizations. The following are highlights of systemwide training offered during FY 2016-17:

- **New Auditor Training**: In November 2016 the Office of Ethics, Compliance and Audit Services (ECAS) sponsored a one-day in-person training session in Oakland for new UC auditors. The purpose of this training session was to provide our new auditor staff with information about the UC system and the UC audit program. It also gave these new staff members the opportunity to meet and listen to a number of senior leaders from the Office of the President. The agenda included presentations on areas such as UCPath, the UC budget process, financial reporting and information technology.
- **Health Sciences Auditor Training**: In April 2017, ECAS sponsored a two day in-person health sciences auditor training program at the UCLA Luskin Conference Center. The program was attended by over 40

UC healthcare auditors and managers as well as several directors. The purpose of the training was to provide UC healthcare auditors focused training on healthcare related topics and emerging issues. The agenda included presentations from several ECAS audit and compliance members, various UC and campus compliance and general counsel leaders and external consultants, as well as a presentation by the UCLA Health CEO. Topics included privacy, the healthcare revenue cycle, healthcare compliance, network expansion/affiliate agreements, and regulatory developments.

- **Systemwide Cybersecurity Training:** ECAS hosted a 6-day in-depth cybersecurity training course from the SANS Institute, an industry leading provider of cybersecurity training, for information security professionals across the system. The course, Security 501: Advance Security Essentials – Enterprise Defender, was held at UCLA and attended by 80 UC staff. Topics covered included network architecture, packet analysis, penetration testing, incident response, analyzing malware and data loss prevention.

Staff and Leadership Development – We continued to implement several initiatives to communicate and foster positive morale among our audit staff and help develop them into future leaders. These initiatives have addressed areas related to succession planning, increased involvement from mid-level audit management with systemwide projects, and mentorship.

Our cross-campus mentorship program that was piloted in the prior year for management was expanded this year to include all audit staff. Our pilot program evaluation revealed that both the mentors and mentees gained valuable experience and it was an extremely valuable and meaningful to the participants. The program provides our professional staff with an opportunity to be paired with a mentor at another campus who has significant experience and leadership responsibility within our UC audit community. Through a series of monthly meetings or calls, the mentor and mentee identify areas that contribute to professional and personal enrichment and satisfaction for both parties.

E. Statistics

This section provides summarized statistical information on the systemwide Internal Audit program for FY 2016-17. Resource and effort data is provided by type of audit service and across functional areas of the University (audits, advisory services, and investigations), demonstrating the breadth of coverage.

Management corrective actions are analyzed by functional area, severity, and status of corrective actions.

1. Resources and Effort

Table 1 – UC Internal Audit Program Staff Qualifications provides an overview of the experience, education and professional certifications of our staff.

UC Internal Audit Program Staff Qualifications

	FY17 Actual	Prior Year Actual
Average Years Total Audit Experience	16 years	16 years
Average Years UC Audit Experience	10 years	10 years
Average Years Audit Director Experience	27 years	25 years
Percent of Audit Staff with Bachelor's Degree	99%	99%
Percent of Audit Staff with Advanced Degrees	33%	33%
Percent of Staff holding Professional Certifications	77%	80%

Table 1

Chart 1 – Audit Program Staff Years of Experience

This chart below illustrates the distribution of experience in our audit staff. A significant gap in experience can be observed between our most senior and our least experienced auditors due in large part to a low turnover rate over the last 10-15 years. As depicted below, 32% of our audit staff have 20 or more years of experience. Within the next few years, we are anticipating a significant loss in Directors and senior staff to retirement. As such, we have prioritized succession planning efforts such as training, development and delegation of responsibility.



n=105

Chart 1

Each year, approximately 85% of our staff time is allocated to direct hours. Direct hours include all effort spent completing our annual plan of audit, advisory, and investigation projects, as well as audit support activities such as IT support, systemwide audit support, audit planning and quality assurance.

Table 2 – Productivity

The table below provides a summary of our direct hours including a breakdown by service line, number of completed projects in each area, and average hours per completed project. The number of completed projects has increased by nearly 5% from the prior year, from 651 projects to 681 projects. Once again, we greatly exceeded our established benchmark for audit plan completion (70%) in FY 2016-17, with a systemwide completion rate of 99%.

FY17 Productivity	FY17 Plan	FY17 Actual	Prior Year
Audits			
Audit Program Hours	98,944	96,326	95,100
Percent of total effort	65%	64%	65%
Number of Completed Projects	229	303	285
Advisory Services			
Advisory Service Hours	36,109	43,170	38,860
Percent of total effort	23%	28%	26%
Number of Completed Projects	102	311	276
Investigations			
Investigation Hours	17,826	11,744	13,814
Percent of total effort	12%	8%	9%
Number of Completed Investigations	N/A	67	90
Total			
Audit, Advisory & Investigation Hours	152,879	151,240	147,774
Audit Support Hours	13,440	13,982	14,262
Total Direct Hours	166,319	165,222	162,036
Summary Information			
Total Number of Completed Projects	N/A	681	651
Number of projects per auditor	N/A	6.5	6.2
Percent of Audit Plan Completed	100%	99%	97%
Productivity Percent	87.0%	86.5%	85.4%

N/A Not applicable to plan data

Table 2

Chart 2 – Effort Distribution by Service Type

The chart below depicts the 7-year trend of hours devoted to audits, advisory services and investigations. The program hours dedicated to both audits and advisory services are on an upward trend. Meanwhile, in FY 2016-17 we observed a decrease in the hours spent on investigation work which can partially be attributed to an increase of investigation reviews performed by units outside of internal audit.

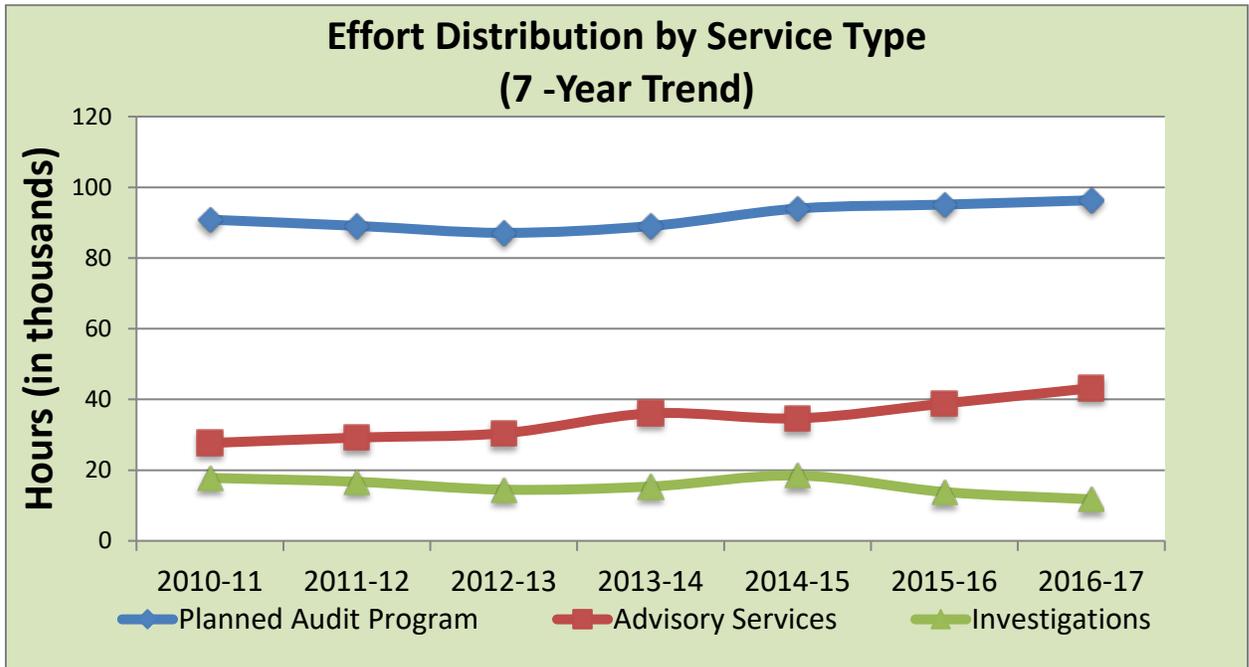


Chart 2

Chart 3 – Distribution of FY 2016-17 Hours

The following chart depicts the breadth of project coverage of Internal Audit hours over the 15 major functional areas of the University. As in prior years, our effort remained concentrated in the areas of health sciences operations, financial management, information management & technology and academic units & programs. These categories comprised over half of our project effort.

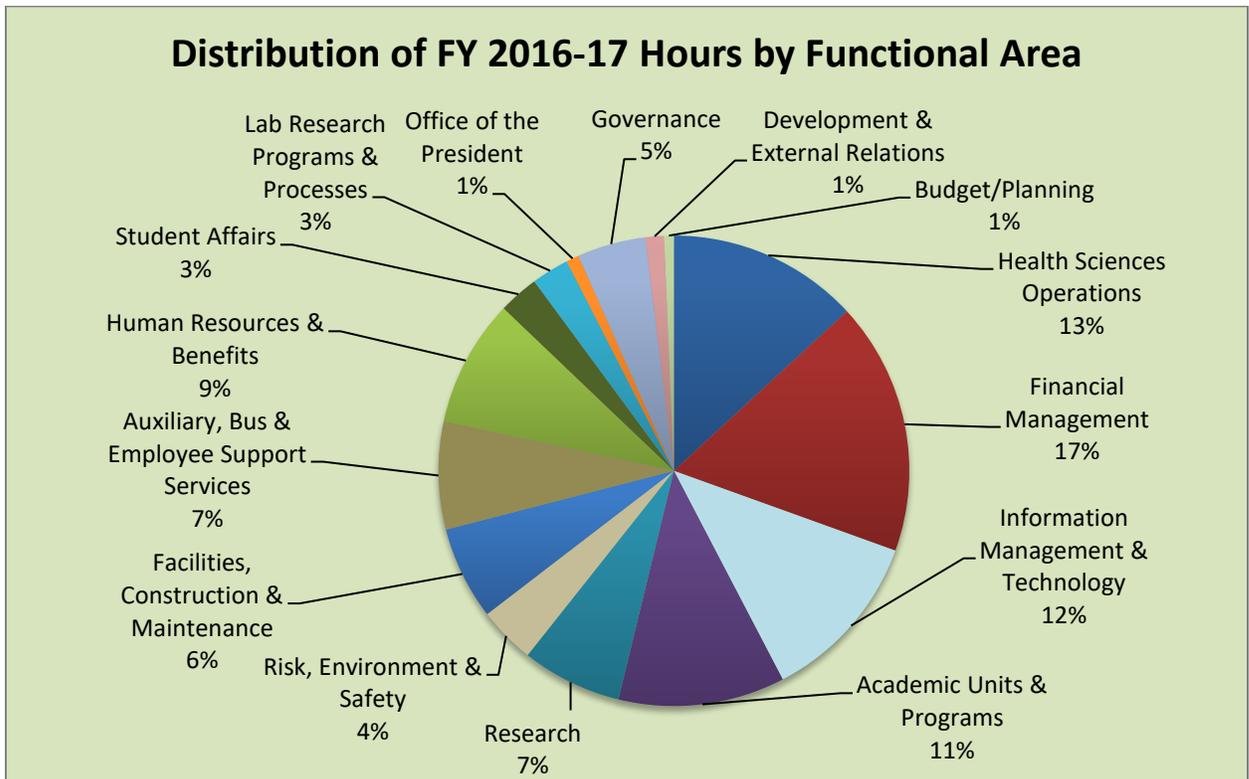


Chart 3

2. Management Corrective Actions

MCA Distribution

As previously indicated, our FY 2016-17 audit program work produced 398 audit, advisory service, and investigation reports resulting in 1,004 management corrective actions (MCAs).

As shown in **Table 3 – Comparison of MCAs and Hours**, the distribution of MCAs correlates fairly closely with the effort expended across the functional areas, with the exception of a few areas. In the areas of Health Sciences Operations, Information Management and Technology, and Financial Management our reviews have yielded significantly more of MCAs per hour of effort than other areas. This may be partially due to the fact that internal control issues in these areas can often be more readily observed and do not necessarily require detailed analysis. The areas of Academic Units & Programs, Human Resources and Benefits, Research and Auxiliary, Business and Employee Support Services have yielded significantly fewer MCAs per hour of effort.

Comparison of MCAs and Hours for FY17

Functional Area	MCA %*	Hours %
Financial Management	25%	17%
Information Management & Technology	22%	12%
Health Sciences Operations	22%	13%
Academic Units & Programs	5%	11%
Human Resources & Benefits	4%	9%
Student Affairs	4%	3%
Risk, Environment & Safety	3%	4%
Research	3%	7%
Facilities, Construction & Maintenance	3%	6%
Governance	3%	5%
Auxiliary, Bus & Employee Support Services	2%	7%
Lab Research Programs & Processes	1%	3%
Budget/Planning	1%	1%
Office of the President	1%	1%
Development & External Relations	1%	1%

*n=1,004 MCAs

Table 3

Status of Completion of MCAs

MCAs are classified initially as open and are only moved to closed status after validation by auditors that the agreed-upon corrective actions have been taken or the associated risk has been adequately mitigated and sustainable improvement has been achieved.

The number of open MCAs increased from 531 to 568 during FY 2016-17. One contributing factor to this increase in the inventory of open MCAs was due to an increase in direct audit and advisory service hours as compared to the prior year, with a corresponding increase in MCAs.

Chart 4 – MCAs Added and Closed shows the number of MCAs added and closed each year for the past seven years. In FY 2016-17, MCA additions exceeded closures, resulting in a net increase of 37 in the ending inventory of open MCAs.

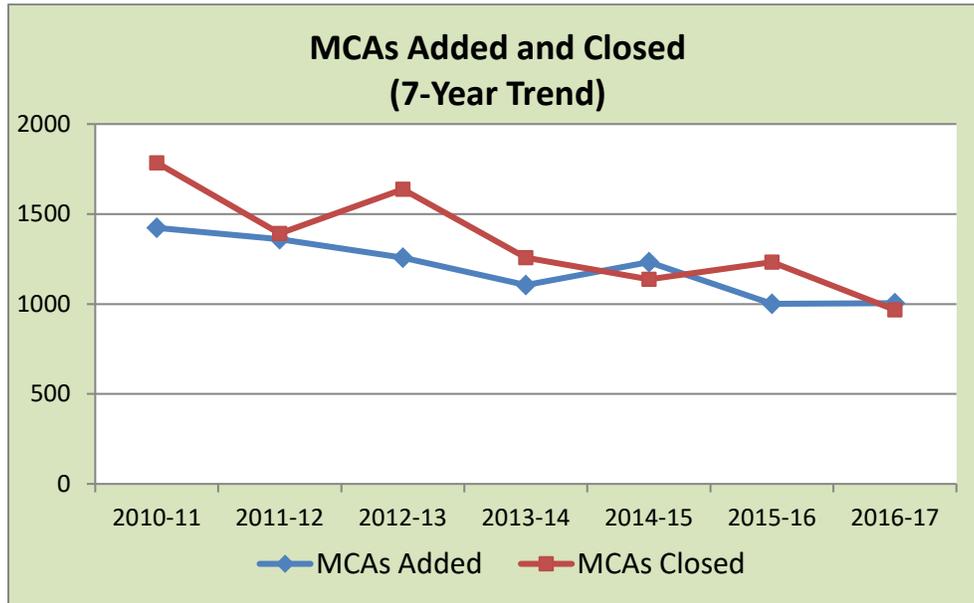


Chart 4

Chart 5 – Ending Inventory of Open MCAs shows the progress that has been made over the past seven years in reducing the inventory of open MCAs. Since FY 2010-11, there has been a net decrease in open MCAs of 661 due to extensive efforts from Internal Audit and management to resolve outstanding audit issues.

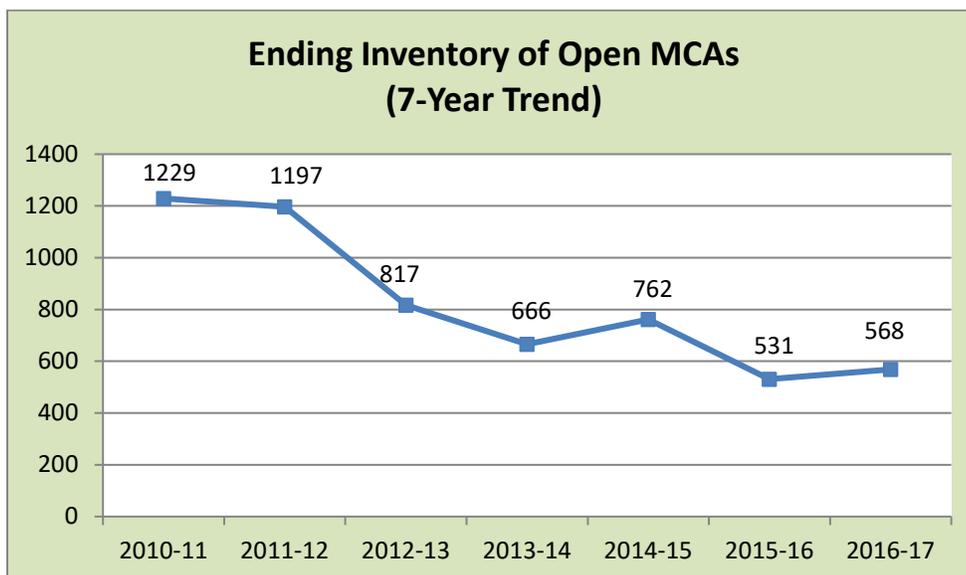


Chart 5

The systemwide Office of Audit Services routinely monitors MCAs across the system that have been open longer than 300 days from the date of the audit report. Many of the MCAs that are currently open the longest are actions that are complex, costly, strategic in nature, or time-consuming to implement. In nearly all of these cases, a short-term fix has already been implemented to address the noted control weakness. These longer-term risk mitigation efforts typically result in a “best practice” solution that is more efficient, reliable and has a lower risk of failure than the short-term fix.

Chart 6 – Number of Open MCAs Over 300 Days Old

This chart shows the progress that has been made over the last several years in closing these older management corrective actions, due in large part to a formalized escalation process and enhanced oversight from the Regents Committee on Compliance and Audit. While these efforts have been largely successful, over the past two years we have observed temporary increases in the number of MCAs over 300 days old, indicating a need for increased diligence and oversight to ensure that corrective actions given the appropriate attention and reach timely resolution.

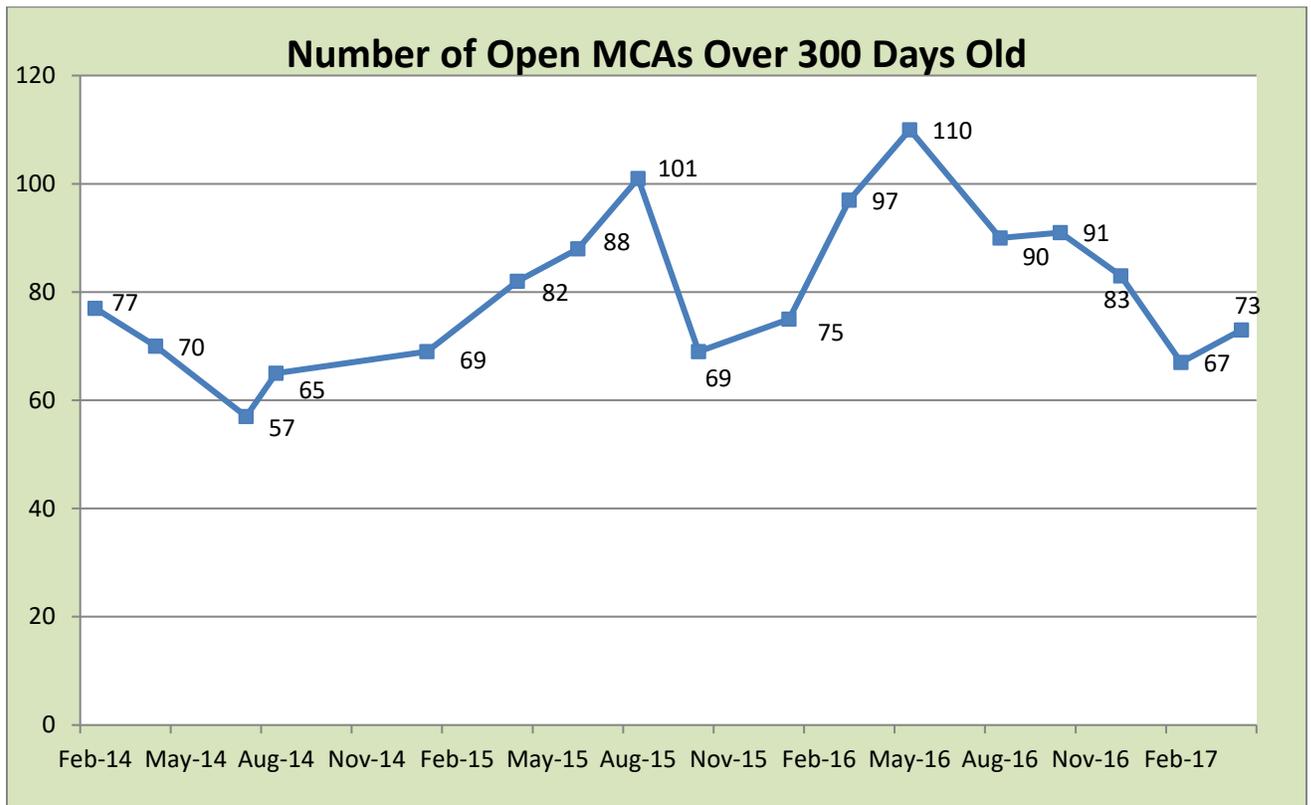
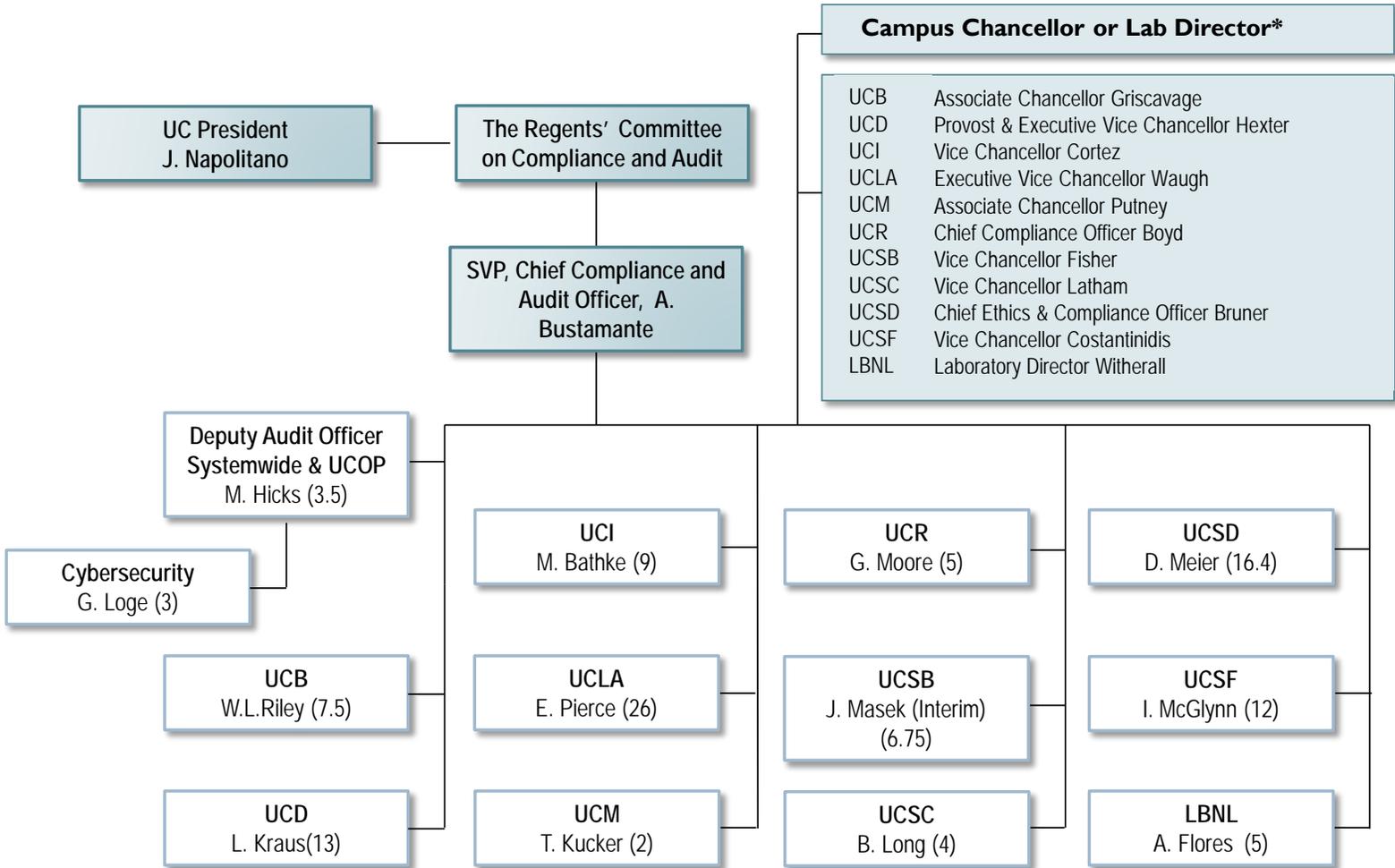


Chart 6

UC Internal Audit Organization Chart



Total Professional Staff, including the Director, is in parentheses. Total Authorized Professional Positions = 113.15 as of year end FY 2016-17

*** All Internal Audit Directors have a direct reporting line to the Chancellor/Laboratory Director. The Chancellor/Laboratory Director may delegate administrative oversight responsibilities to a Vice Chancellor or Associate Laboratory Director. These delegations are indicated in the box below "Campus Chancellor or Lab Director."**

APPENDIX 2 – FINAL AUDIT REPORTS ISSUED IN FISCAL YEAR 2016-17*

Office of the President

UCOP Executive Compensation
Construction (Systemwide)
Cybersecurity - Vulnerability Assessments (Systemwide)
UCOP Executive Compensation (Systemwide)
Medical Centers Clinical Enterprise Management
Recognition Plan (CEMRP)
UCOP Travel and Entertainment
ANR Federal Excess Personal Property (FEPP)
Electric Service Provider (ESP) Power Supply Validation
Office of the Treasurer Annual Incentive Plan (AIP)
New Pension Tier
Retirement Administration Service Center (RASC) Targeted
Processes
UCD Chancellor Transition Review

UC Berkeley

Supporting International Research
HIPAA Compliance
Construction
Business Partnerships
Procurement in the International Environment
Annual Report of Executive Compensation 2016 (AREC)
Student Fees
International Visiting Scholars
Commercialization of Intellectual Property
Control Systems
Executive Compensation (G-45)
Restricted Gifts
Executive Compensation 2017 - AREC

UC Davis

Purchasing Cards
Epic Work Queues
Centers for Medicare & Medicaid Services (CMS) Quality
Measures
Review of Annual Report on Executive Compensation
Health Sciences Faculty Compensation
Charge Description Master
Graduate Studies IT Operations
Personnel Action Approval Process
Clearing and Suspense Account Management
Custodial Services
Information and Educational Technology (IET) Equipment
Controls

** Only Includes Audit Reports issued as Final as of 6/30/17*

UC Irvine

Facilities Management
Executive Compensation
Fair Wage/Fair Work (Systemwide)
Arroyo Vista Housing
Medical Center Contract Management
Clinical Research Billing Systems
Asset Inventory & Critical Controls
Vendor Master File Review
Mobile Device Security
School of Physical Sciences
School of Medicine - Anesthesiology
School of Medicine - Orthopaedic
Kuali Financial System
Human Resources - Background Checks
Chancellor's Expenses (G-45)
Epidemiology
Mobile Device Billing & Inventory

UC Los Angeles

UCLA Health Clinics - Westwood Neurology
Nursing Support for Research Studies
Resnick Neuropsychiatric Hospital – Capitated Senior
Patients – Hospital Revenue
ASUCLA - Finance Division - Loss Prevention
Campus - Executive Compensation - Executive Travel
ASUCLA - Academic Support Division - Computer Store
Events & Transportation - Fleet & Transit - Fuel
Accountability
Housing & Hospitality Services - University Apartments -
Revenue, Leasing, and Vacancy
Information Technology Services - Procurement and Asset
Management
Housing & Hospitality Services - Lake Arrowhead
Conference Center
Campus - UCLA Foundation
UC Police Department - Recharges and Revenue
Reconciliation
Overflow Care
Events & Transportation - Revenue Recognition
Facilities Management - Purchased Utility Billing
Capital Programs - CapStar System Review
Main Cashier's Office - UCLA Medical Center, Santa Monica
Capital Programs - Project Planning and Development
Travel Expenses
Campus Service Enterprises - Insurance and Risk
Management
Facilities Management - Energy Services
School of Medicine-Head & Neck Surgery
Doheny Eye Clinic-Pasadena

UCLA

Parking Subsidies
Campus - Executive Compensation - Chancellor's Expenses (G-45)
Campus - Executive Compensation - Annual Review of Executive Compensation (AREC)
Continuing Education of the Bar
Rape Treatment Center
Housing and Hospitality Services – Information Technology
Housing and Hospitality Services – UCLA Catering
Housing and Hospitality Services – Dining Purchases
Human Resources Payroll Center – North
Facilities Management – Design and Project Management
Facilities Management – Maintenance & Alterations
Events and Transportation – Parking Permit Inventory
ASUCLA Restaurants – Cooperage Division
ASUCLA – Food Services – Point of Sale System
Capital Programs – Project Closeout Process
Capital Programs – Recharge Process
Campus – CashNet Process
Campus – School of Arts and Architecture
Campus – UCLA Luskin School of Public Affairs
Skilled Nursing Facility – Post Acute Care
Patient Business Services
Hospital – Administered Construction Projects
Housestaff Duty Hours
Information Technology – Change Controls
Per Diem Employees
Clinical Cash Handling
Fleet and Transit – Shop Operations
Network Clinics – Torrance OB/Gyn Clinic

UC Merced

Pay Increases and Performance Evaluations
Annual Report of Executive Compensation
Fair Wage/Fair Work (Systemwide)
Campus-wide Hiring
Relocation Practices

UC Riverside

College of Humanities, Arts & Social Sciences (CHASS)
Dean's Office
College of Engineering-Center for Environmental Research & Technology (CE-CERT)
Annual Report on Executive Compensation (AREC)
Systemwide Audit (SW) Fair Wage/Fair Work
HHS/OIG Payroll Certification Follow-Up
Contracts and Grants
Financial Analytical Review

UC Santa Barbara

IT: Information Security - Restricted Information
Intercollegiate Athletics and Department of Recreation - Procurement and Contracting
Koegel Autism Center (and Clinic)
Kavli Institute for Theoretical Physics (KITP)
National Center for Ecological Analysis and Synthesis (NCEAS)
IT: Administrative & Residential Information Technology (ARIT) – Operational Review
Human Subjects
Hosford Counseling & Psychological Services Clinic
IT: Information Security - Server Practices
Housing – Internal Control Review
Executive Compensation: Chancellor's Expenses and Executive T&E (Systemwide)
Controlled Substances
Executive Compensation: Annual Report on Executive Compensation (AREC) (Systemwide)
Fair Wage/ Fair Work (Systemwide)
Associated Students Internal Control Review
IT Project Costs

UC Santa Cruz

Export Control Awareness Update
Laser Safety
Fair Wage/Fair Work
Conflict of Interest Disclosures on Federal Contracts
Chancellor's Expenses UC Policy Business and Finance Bulletin (BFB-G-45)
Annual Report on Executive Compensation (AREC)

UC San Diego

Effort Reporting
Sub-recipient Monitoring
Major Capital Construction (Jacobs Medical Center)
Graduate Student Funding
Scripps Institution of Oceanography (SIO) Academic Affairs Business Processes
Clinical Research Billing
Surgical & Perioperative Services (Epic OpTime)
Medication Charges: Dispense to Administration
Authorization Management Processes
Advanced Beneficiary Notices (ABNs)
International Statistical Classification of Diseases (ICD)-10 Implementation
Health Sciences Research Service Core
Budget Planning and Monitoring
Delegations of Authority
Scripps Institution of Oceanography (SIO) Department Financial Controls

San Diego

Supervisory Control & Data Acquisition (SCADA) Systems
Emergency Management and Business Continuity
Center for Energy Research (Organized Research Unit)
Department Financial Controls (Anthropology)
Department of Surgery
Medical Staff Administration - Physician Credentialing &
Proctoring
Clinic Cashiering & Reconciliations
Claims Denial Management - Phase II
Alzheimers Disease Cooperative Study (ADCS) NIH Award -
Attorney-Client Privilege
SIO Department - Academic Personnel Files
Ophthalmology Human Subjects Research Compliance

UC San Francisco

Benioff Children's Hospital Oakland - PeopleSoft & Meditech
Information Technology Controls
Quincy Data Center
Information Technology - Controls Remediation Follow-Up
Benioff Children's Hospital Oakland - Emergency
Department Change Capture
Prior Project Follow Up Review (Health System)
University of California, Office of The President -
Chancellor's Expense /G45
University of California, Office of The President - Executive
Compensation
Conflict of Interest/Commitment
Prior Project Follow Up Review (Campus) -Serious Adverse
Event Reporting - Clinical Trials
Critical Infrastructure Information Technology Systems
Campus
Langley Porter Psychiatric Hospital (LPPH) Revenue Cycle
Processes
Student Record Security
Lab Chemical Safety & Management
Human Resources Operations
Hospital Billing Receivables
Benioff Children's Hospital Oakland – Construction Project
Capital Asset Surplus
University of California, San Francisco - Health Critical
Infrastructure

Lawrence Berkeley National Laboratory

Corrective Action Tracking System Effectiveness
FY16 Cost Allowability
Time and Effort
Electronic Requests for Check Issuance
Construction Closeout Process
FY16 Gifts Program
Technology Transfer – Royalties and Licensing Income
OMB Circular A-123 – IT Controls
Benefits Eligibility
FY16 Home Office Costs

