

August 8, 2017

DEAN TULLSEN
Department Chair
0404

**Subject: Computer Science and Engineering
 Report 2017-08**

The final report for Computer Science and Engineering, Report 2017-08, is attached. We would like to thank all members of the department for their cooperation and assistance during the review.

Because we were able to reach agreement regarding management action plans in response to the audit recommendations, a formal response to the report is not requested. The findings included in this report will be added to our follow-up system. We will contact you at the appropriate time to evaluate the status of the management action plans.

UC wide policy requires that all draft reports be destroyed after the final report is issued. We also request that draft reports not be photocopied or otherwise redistributed.

David Meier
Director
Audit & Management Advisory Services

Attachment

cc: Judy Bruner
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UC San Diego

AUDIT & MANAGEMENT ADVISORY SERVICES

Computer Science and Engineering
Report No. 2017-08
August 2017

FINAL REPORT

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ATTACHMENT A – CSE Business Process Review

I. EXECUTIVE SUMMARY

Audit & Management Advisory Services (AMAS) has completed a review of Computer Science and Engineering's (CSE) business processes as part of the approved audit plan for Fiscal Year (FY) 2016-17. The objective of our review was to determine whether internal controls and sound business practices were in place to mitigate financial and compliance risk. The scope of our review included activities and business practices for FY15-16, and for the period July 1, 2016 through December 31, 2016.

We concluded that the Department's internal controls were generally adequate and provided reasonable assurance that operations were effective, performed in compliance with University policies and procedures, and resulted in accurate financial reporting. However, we did observe instances where increased oversight could improve compliance. We noted that financial management could be improved in order to ensure proper internal controls are in place, and reports are accurate and meaningful. For instance, we observed that overdrafts were monitored at the fund level, rather than the organization level¹. Additionally, our detailed review of travel and entertainment disclosed that transactions were not always pre-authorized and submitted timely, in compliance with policy.

We identified additional opportunities for increased compliance in timekeeping and information technology. Following are the Management Action Plans to address the observations:

Management Action Plans:

A. Financial Management

1. The Business Office has completed signature authorization forms as required by policy.

The Business Office will:

2. Monitor overdrafts at the appropriate levels (e.g. fund and org) on a quarterly basis, and address deficits as required by policy.
3. Review and submit an updated recharge rate proposal to the Recharge Rate Review Committee to ensure a break-even balance and that surpluses or deficits are administered appropriately.

B. Timekeeping Practices

1. The Business Office has notified staff that overtime and vacation leave require prior written approval, and will ensure that absences and overtime are appropriately recorded and pre-authorized per policy.

C. Pre-authorization and Timeliness of Expense Reimbursements

1. The Business Office will ensure that all University travel and entertainment expenses be pre-authorized and reimbursements submitted timely.

¹ UCSD's Chart of Accounts elements consist of index, fund, org, account, program, and location. A fund code is used to identify the funding source of a transaction, while an org code is used to identify departments or functional units within a department.

D. Information Technology

1. The Department is working to implement a secure environment and new server to address the end-of-life operating system.

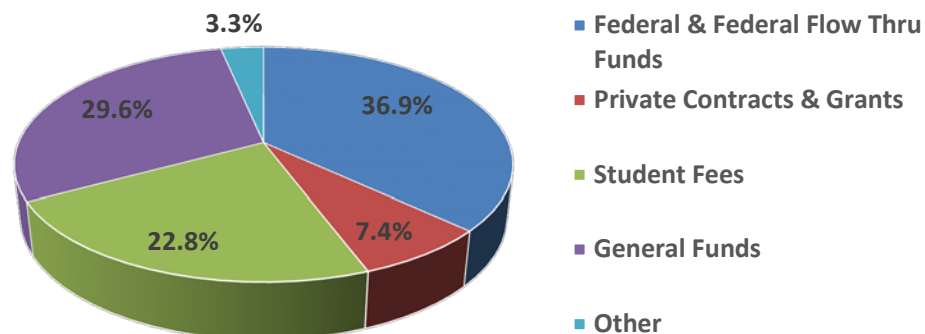
Observations and related management action plans are described in greater detail in section V. of this report.

II. BACKGROUND

Audit & Management Advisory Services (AMAS) has completed a review of Computer Science and Engineering's (CSE) business processes as part of the approved audit plan for Fiscal Year (FY) 2016-17. This report summarizes the results of our review.

CSE is one of six academic departments within the Irwin and Joan Jacobs School of Engineering. The Department is comprised of 50 faculty and 32 staff, with faculty dedicated to research, education and partnering with industry. The Business Office consists of a Business Officer, a Fiscal Affairs Manager, five Financial Managers, and a Financial Assistant. The Business Officer and Fiscal Affairs Manager were hired during our audit scope (FY15-16 and for the period July 1, 2016 through December 31, 2016) and were reviewing existing business processes prior to our review.

During FY 2015-16, CSE incurred approximately \$36.2 million in expenditures, comprised of \$27.9 million in salaries and benefits, \$3.9 million in supplies and other expenses, \$0.1 million in equipment, \$1.0 million in travel, and \$3.3 million in overhead. The sources of funding for these expenditures were federal and private contracts and grants, student fees, general funds, and other sources, as depicted in the following chart.



Approximately one percent of CSE's funding comes from their academic self-supporting activity² (SSA). CSEHelp is the department's local computer support group and is comprised of individuals specializing in different technical areas providing support for faculty and graduate students.

² An Academic Support Activity is a recharge or income producing activity within an academic department which provides, at approved rates and on a regular and continuing basis, goods and/or services to campus extramural and university funded activities.

III. AUDIT OBJECTIVE, SCOPE, AND PROCEDURES

The objective of our review was to determine whether internal controls and sound business practices were in place to mitigate financial and compliance risk. The scope of our review included activities and business practices for FY15-16, and for the period July 1, 2016 through December 31, 2016. In order to achieve our objective, we performed the following:

- Reviewed the Department website, organizational structure, and financial information;
- Reviewed applicable federal requirements;
- Reviewed University policies including, but not limited to:
 - UC Accounting Manual,
 - Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards (Uniform Guidance),
 - UCSD Policy & Records Administration (PPM) 395.41 *Timekeeping: Attendance Records*,
 - UCSD PPM 523 *Purchasing*,
 - UC Contract and Grant Manual,
 - UC Business Finance Bulletin (BFB) *BUS 29: Management and Control of University Equipment*,
 - UC BFB A-47 *Direct Costing Procedures*,
 - UC BFB IA-101 *Internal Control Standards: Departmental Payrolls*,
 - UC BFB BUS 43 *Materiel Management*,
 - UC BFB BUS 29 *Management and Control of University Equipment*,
 - UC BFB BUS 79: *Expenditures for Entertainment, Business Meetings and Other Occasions*,
 - UC BFB G-28: *Travel Regulations*;
- Interviewed management and key personnel to discuss business processes and any potential areas of concern;
- Evaluated the following:
 - IFIS electronic financial approval hierarchies,
 - Business Unit Management Tool roles,
 - Express Card roles and responsibilities,
 - Signature authority for entertainment, invoices, payment authorization, and travel;
- Evaluated business process controls utilizing internal control questionnaires and segregation of duties matrices;
- Verified the financial status of department funds and indices for the audit scope; and
- Analyzed procedures and performed detailed transaction testing in the following areas to verify that internal controls were adequate and functioning in compliance with University policy:
 - Contract and grant administration,
 - Operating ledger review,
 - Payroll and timekeeping,
 - Payroll and non-payroll expense transfers,
 - Non-payroll expenditures, including:
 - Travel,
 - Entertainment,

- Express cards,
- Effort reporting,
- Overdraft reporting, and
- SAS 112 compliance.

IV. CONCLUSION

Based on our review, we concluded that the Department's internal controls were generally adequate and provided reasonable assurance that operations were effective, performed in compliance with University policies and procedures, and resulted in accurate financial reporting.

Business Office management appear to have a good working knowledge of internal controls and how they should be established. The strong internal controls include, but are not limited to the following:

- Open and consistent communication between the Business Office and Principal Investigators (PI),
- Use of Transaction Sampling, and
- Use of Control Tracker.

Attachment A provides the results of the business process review. Specific management actions planned or in process for those areas were rated "improvement needed" or "improvement suggested," as noted in the attachment. Our results are provided in more detail in the remainder of this report.

V. OBSERVATIONS REQUIRING MANAGEMENT ACTION

A.	Financial Management
Financial management of Department funds could be improved to ensure financial management oversight is effective.	
Risk Statement/Effect	
The absence of appropriate controls for financial activity could potentially lead to unauthorized transactions, inaccurate reporting and financial deficits.	
Management Action Plan	
A.1	The Business Office has completed signature authorization forms as required by policy.
The Business Office will:	
A.2	Monitor overdrafts at the appropriate levels (e.g. fund and org) on a quarterly basis, and address deficits as required by policy.
A.3	Review and submit an updated recharge rate proposal to the Recharge Rate Review Committee to ensure a break-even balance and that surpluses or deficits are administered appropriately.

A. Financial Management – Detail Discussion

Funds in Overdraft

The campus Overdraft Policy requires that departments monitor financial balances and administrators should initiate corrective action in a timely manner to eliminate any overdrafts. The policy also requires that a resolution plan to eliminate deficit balances exceeding \$10,000 and greater than 60 days in duration, be documented and approved by the Vice Chancellor or Dean to whom the department reports.

The Business Office monitors fund overdrafts closely by downloading the Operating Ledger detail query for all CSE organizational (org) numbers on a monthly basis. However, they monitor overdrafts at the fund level rather than the org level³. While fund level reports may not show an overdraft, orgs within the fund may show an overdraft. As a result, the different reports used to identify overdrafts can be misleading based on the parameters (fund vs. org) used to run the reports. During our review, we identified four overdrafts at the org level that required a budget adjustment journal to remove or decrease the apparent deficit, as shown in the following table.

Fund	Organization	Balance as of 12/31/16
19921A (multiple dept.)	416209	\$ 10,877.74
	786209	\$ (11,651.19)
CSE Fund Balance		\$ (773.45)
86069A	416209	\$ 18,817.94
	786209	\$ (14,728.31)
CSE Fund Balance		\$ 4,089.63
86406A	416209	\$ 56,789.38
	786209	\$ (41,407.94)
CSE Fund Balance		\$ 15,381.44
99100A	416209	\$ 10,868,539.59
	786209	\$ (314,840.94)
CSE Fund Balance		\$ 10,553,698.65

Signature Authority

Department heads have authority over and accountability for the funds in their department budgets, and must follow specific guidelines to delegate this authority to other employees. The department head is required to complete a Signature Authorization form for each employee who will receive

³ UCSD's Chart of Accounts elements consist of index, fund, org, account, program, and location. A fund code is used to identify the funding source of a transaction, while an org code is used to identify departments or functional units within a department.

delegation of authority and submit the form to the Disbursements Division. After a formal signature authorization has been documented, an employee with delegated authority can complete transactions for MyPayments, invoices and travel. During our review, we noted that six out of seven fiscal staff had not completed a signature authorization form, increasing the risk of unauthorized transactions.

Rates for SSA

University policy provides that academic support activities will be operated on a no-gain/no-loss basis. Any surplus or deficit occurring in any one year should be corrected by adjusting the rates in the succeeding year to achieve a break-even balance at the succeeding year end. Every effort should be made to ensure that year-end surpluses or deficits do not exceed one month of the recharging unit’s activity.

The current CSEHelp recharge rates were approved effective June 1, 2007. During our review, we noted that as of June 30, 2016 the current rate had resulted in the accumulation of a \$128,391 surplus, which was 217% over the allowable surplus amount (approximately \$40K). As of December 31, 2016, the surplus was \$90,637, which was 124% over the allowable surplus amount.

B.	Timekeeping Practices
Timekeeping practices could be improved to ensure that absences and overtime are appropriately recorded and pre-authorized per policy.	
Risk Statement/Effect	
Weak internal controls for timekeeping may allow unauthorized payroll transactions to be processed and overpayments to be made resulting in a loss of funds.	
Management Action Plan	
B.1	The Business Office has notified staff that overtime and vacation leave require prior written approval, and will ensure that absences and overtime are appropriately recorded and pre-authorized per policy.

B. Timekeeping Practices – Detailed Discussion

UCSD guidance (BLINK) states pre-approval by an employee’s supervisor is required for both overtime and vacation leave. University policy further stipulates, “normally advance approval is required” and should be documented prior to an absence or overtime in the form of a *Departmental Approval of Absence or Overtime* (DAAO) or via alternate media. When it is not practical to submit the request prior to the event, “the form must be completed and submitted to the supervisor immediately after the absence or overtime worked and forwarded to the department timekeeper weekly.” The DAAO is optional for employees whose timecards are signed by the department chair, alternate, or designate.

Further, UCSD’s Administrative Responsibilities Handbook (Administrative Handbook) offers additional guidance on administrative responsibilities. Specifically, “each administrative official is accountable for

ensuring that appropriate controls are in place in their respective areas of responsibility, and that their areas are operating effectively.” Control activities are described as those “activities performed by the organization to ensure compliance with sound business practices.” The Administrative Handbook further stipulates that control activities be documented.

During our review of reported overtime and vacation leave, the Business Office was not always able to provide documentation to support pre-authorization. We noted that four of the 10 employee timesheets we sampled did not have the appropriate documentation for approval of time off, and two of the four were verbally pre-approved. Of the 10 timesheets reviewed, four claimed overtime hours. We noted that three of the four timesheets did not have supporting documentation for overtime pre-approval, and two of the three were verbally pre-approved.

During our review, the Business Office stated that overtime and vacation leave requests do require pre-approval. However, prior to January 2017, the pre-approval may have been granted verbally rather than in writing. Effective January 2017, the Business Office has issued a memo to all staff indicating that requests for overtime and vacation require written pre-approval.

C.	Expense Reimbursements
Our detailed review of travel and entertainment disclosed that transactions were not always pre-authorized and submitted timely, in compliance with policy.	
Risk Statement/Effect	
Poor controls for travel and entertainment expenses increase the risk of inappropriate reimbursements and potential tax consequences.	
Management Action Plan	
C.1	The Business Office will ensure that all University travel and entertainment expenses be pre-authorized and reimbursements submitted timely.

C. Expense Reimbursements – Detailed Discussion

UCSD guidance (BLINK) states in support of IRS regulations, and UC’s accountable plan and best practices, employees must obtain pre-approval and adequately account to UCSD for travel and entertainment expenses within 21 days. Expenses submitted after 45 days may be treated as taxable and reported on the employee’s W-2. In March 2015 the Business Office notified all employees that UCSD’s policy for reimbursements is within 21 days and the departmental policy for reimbursements is within 10 days. However, we noted that travel and entertainment expenses were not always pre-authorized and submitted timely.

During our review, we sampled 20 travel reimbursements totaling approximately \$113,000 and 20 entertainment reimbursements totaling approximately \$103,000. Of the trips selected, we noted eight trips were not pre-authorized in accordance with policy. In addition, we noted 11 of the trips were submitted after 21 days of the end of the trip. Of the entertainment selected, we noted the timeframe

between the event date and the reimbursement prepared date exceeded 21 days for 13 of the 20 sampled.

D.	Information Technology
During our review, we noted that the Department operated a server that contained Family Educational Rights and Privacy ACT (FERPA) data. This server was running on an end-of-life operating system, in which the vendor no longer provided technical assistance, support, or software updates.	
Risk Statement/Effect	
Running an end-of-life operating system increases the risk of system compromise or virus infection, impacting the safety of protected information.	
Management Action Plan	
D.1	The Department is working to implement a secure environment and new server to address the end-of-life operating system.

D. Information Technology – Detailed Discussion

UC policy states that “systems personnel should, in a timely manner, update versions of the operating system and application software for which security patches are made available.” During our review we noted the Department was running an operating system that had reached its official end-of-life and was no longer supported as of March 2017. The operating system housed the CSEGradApp program which contained FERPA data.

According to the Department, the CSEGradApp was written in a specialized environment. Due to complexities in the environment, they were unable to easily upgrade the program. CSE has hired a consultant to build a secure environment for the application, using an up to date patched Office of Engineering Computing managed server. The project is currently 80% complete. However, in order to prevent disruption to current users of the program, CSE and the consultant are waiting for the current student recruiting season to finish before completing the project. The Department has projected the completion date to be prior to Fall 2017.

**Computer Science and Engineering
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2017-08**

Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion ¹	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
Timekeeping & Payroll		√	√	Reviewed timesheets, absence slips, Leave Activity Summary Reports, and Distribution of Payroll Expense Reports (DOPEs) and reconciliations.	Yes	Satisfactory	The Business Office issued a memo in January 2017 to CSE employees indicating that all leave and overtime requests need written pre-approval. Due to this, it appears appropriate controls are now in place.
Transaction Processing - Non-Payroll Expenditures	√	√	√	Reviewed randomly selected transactions; traced to supporting documents.	Yes	Satisfactory	Separation of duties appeared adequate. Non-payroll expenditures appeared reasonable and supported by appropriate documentation
Travel	√	√	√	Reviewed 20 trips totaling \$113,272; traced to vouchers & supporting documents.	No	Improvement Needed	Selected travel was not always processed with proper pre-authorization or in a timely manner.

¹ Scale: Satisfactory - Improvement Suggested - Improvement Needed - Unsatisfactory

Computer Science and Engineering
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2017-08

Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion ¹	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
Entertainment	√	√		Reviewed a sample of 20 entertainment only expenses for business justification and timeliness.	No	Improvement Needed	Selected entertainment was not always submitted for reimbursement in a timely manner.
Operating Ledger Review & Financial Reporting		√	√	Examined operating ledgers and financial reports.	Yes	Satisfactory	Operating ledgers were reviewed and reconciled by the Business Office.
Effort Reporting	√	√		Reviewed E-CERT Reports and data; traced to Payroll Expenditure Transfers. Selected a sample of 10 PIs for 97% effort rule.	Yes	Satisfactory	Effort Report certifications were current. However, one of the 10 PIs sampled had charged 100% effort to federal awards.

**Computer Science and Engineering
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2017-08**

Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion ¹	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
Payroll Expenditure Transfers	√	√		Verified adjusted payroll charges per operating ledgers & distribution of payroll expense reports (DOPE's).	Yes	Satisfactory	Expense transfers appeared reasonable and timely.
Non-Payroll Expenditure Transfers		√		Reviewed timeliness, and business justifications for reasonableness.	Yes	Satisfactory	Expense transfers appeared reasonable and timely.
Gift Funds	√	√	√	Examined gift fund documentation and expenditures for 10 gift funds.	Yes	Satisfactory	Gift funds appear to be classified properly, forms completed, and expended in accordance with UC policies and donor intent.
Information Systems Environment		√	√	N/A	Yes	Satisfactory	The Department is working to implement a secure environment and new server to address an end-of-life operating system.
Financial Oversight - Overdrafts	√			Discussed overdrafts with MSO and Fiscal Affairs Manager.	No	Improvement Needed	Overdrafts are monitored on a monthly basis. However, they are monitored at the fund level

Computer Science and Engineering
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2017-08

Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion ¹	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
							rather than the org level. Deficits will be addressed as required by policy.
Recharge Activities	√	√		Reviewed current Recharge Rate Proposal and discussed procedures with MSO and Fiscal Affairs Manager.	No	Improvement Needed	Recharge activity was documented and journals were sent to recharge users monthly. However, the recharge rate is outdated, which has resulted in an excess surplus. Management is currently working on submitting a revised Recharge Rate Proposal.
Signature Authorizations		√		Reviewed available signature authorizations forms.	Yes	Satisfactory	During our review, the Business Office completed signature authorization forms as required by policy.