

February 21, 2014

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Chair, Mechanical and Aerospace Engineering  
0411

***Subject: Department of Mechanical and Aerospace Engineering  
Audit & Management Advisory Services Project 2014-10B***

The final audit report for the Department of Mechanical and Aerospace Engineering, 2014-10B, is attached. We would like to thank all members of the department for their cooperation and assistance during the audit.

Because we were able to reach agreement regarding corrective actions to be taken 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. While management corrective actions have been included in the audit report, we may determine that additional audit procedures to validate the actions agreed to or implemented are warranted. We will contact you to schedule a review of the corrective actions at the appropriate time.

UC-wide policy requires that all draft audit reports, both printed (copied on tan paper for ease of identification) and electronic, be destroyed after the final report is issued. Because draft reports can contain sensitive information, please either return these documents to AMAS personnel or destroy them. We also request that draft reports not be photocopied or otherwise redistributed.



David Meier  
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Attachment

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## AUDIT & MANAGEMENT ADVISORY SERVICES

Department of Mechanical and Aerospace Engineering  
December 2013

**Performed By:**

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Project Number: 2014-10B

*Department of Mechanical and Aerospace Engineering  
Audit & Management Advisory Services Project 2014-10B*

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ATTACHMENT A – Audit Results by Business Office Functional Process

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**I. Background**

Audit & Management Advisory Services (AMAS) completed a review of the Department of Mechanical and Aerospace Engineering (MAE) as part of the approved audit plan for the Fiscal Year 2013-2014. This report summarizes the results of our review.

MAE is a large inter-disciplinary department in the Jacobs School of Engineering. The department consists of about 41 faculty, 1,072 undergraduate students, and 436 graduate students. MAE's faculty includes individuals recognized as leaders in fields such as fluid mechanics, solid mechanics and materials, systems and controls, and environmental engineering. MAE research activities use engineering and science to address challenging research problems with particular emphasis on energy, the environment, and medicine.

MAE's main funding sources have primarily been provided by federal agencies such as the National Science Foundation (NSF) or the Department of Defense (DoD). However, due to the rise of the biomechanics field, the department has been receiving funding from sources such as the National Institute of Health (NIH).

For the Fiscal Year 2012-2013 MAE incurred actual expenses of approximately \$27.4 million, with 66% attributable to salaries and benefits, 17% in supplies and expenses, and 10% in indirect costs. Sources of funding used to cover these expenses consisted of approximately \$9.8 million in federal funds (including federal flow-through funding), \$5.8 million in general funds, \$5 million in student fees, and \$6.8 from various other funding sources.

**II. Audit Objective, Scope, and Procedures**

The objective of our review was to evaluate the effectiveness of key internal controls, and determine whether these internal controls provided reasonable assurance that financial activity is being conducted in accordance with UC system-wide and local policies and procedures.

In order to achieve our objectives we completed the following:

- Interviewed the Management Services Officer, Fiscal Manager, and one departmental fund manager;
- Reviewed completed internal control questionnaires and separation of duties matrices with department management;
- Analyzed departmental organizational and financial information and reports, including the departmental Transaction sampling Management Report, Electronic Certification of Effort and Reporting Tool (ECERT) aging reports, and overdraft reports;

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- Performed limited transaction testing to evaluate key business processes, as summarized in *Attachment A*.

### **III. Conclusion**

Based on our review procedures, we conclude that MAE's internal controls provided reasonable assurance that financial activities were conducted in accordance with University and campus policies and procedures. However, we did identify opportunities to improve business processes and internal controls. Our observations are discussed in the balance of this report.

### **IV. Observations and Management Corrective Actions**

#### **A. Effort Reporting**

**Effort reporting was not consistently performed on a timely basis.**

All employee salaries charged directly to federal and federal flow-through funds must be certified according to OMB Circular A-21. UCSD has implemented the Electronic Certification Effort Reporting and Tool (ECERT) as a means for PI's and researchers to electronically certify their effort on federal contracts and grants. UC policy requires that effort certifications be submitted within 120 days after the end of each quarter.

As of the date of our review, six effort reports were more than 140 days overdue. Per MAE management, effort reporting is particularly challenging because some researchers working on MAE research projects are not MAE faculty members, and business office staff do not feel as though they have the authority to request that these faculty members complete their effort reports in a timely manner.

Improper or incomplete effort reporting can cost the University money in the form of audit disallowances and penalties, and could potentially jeopardize future federal research funding.

#### **Management Corrective Actions:**

MAE will enhance communication with the respective certifiers and emphasize the importance of timely certification as it relates to federal contract and grant activity. MAE will also work with other department business officers to address timeliness issues for certifiers outside of the department.

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**B. Transaction Sampling**

**As of September 30, 2013, 333 transactions sampled by the Transaction Sampling system were over 60 days old and had not yet been reviewed by the department business office. Further, the “incomplete documentation” problem code was assigned to approximately 27.5% of the sampled transactions that were reviewed during the Fiscal Year 2012-2013.**

MAE has opted to participate in transaction sampling as part of their ledger reconciliation and account validation process. Transaction sampling is performed using the Ledger Reviewer application which randomly selects transactions to be reviewed by the department. This process replaces the outdated process of reviewing 100% of the transactions posted to the operating ledger. Departments opting to use the system are expected to review all of the transactions that are sampled by the system, without exception. The system provides a comprehensive way to electronically document the operating ledger review, and the results of the review are aggregated in a summary report referred to as the Transaction Sampling Management Report.

Between June 30, 2012 and September 30, 2013, the transaction sampling system sampled 1,456 transactions. AMAS noted that 507 transactions had not been reviewed and more than half of these transactions were over 60 days old. Further, it was noted that incomplete documentation was noted for a vast majority of the transactions with problem codes.

Per interviews conducted with MAE personnel, most of the transactions coded as incomplete documentation represented instances in which the business office was unable to retrieve the packing slip from the MAE lab that received the goods purchased. However, during testing, it was noted that two Express Card transactions, one other non-payroll expense transaction, and one equipment purchase among the AMAS-sampled transactions were missing documentation not limited to the packing slip. These findings appear to be consistent with the incomplete documentation problem codes noted through transaction sampling, and indicate that the transactions with incomplete documentation problem codes may be missing more than their packing slips.

There was an increased risk that transactions were non-compliant with University policy and/or federal cost accounting standards (OMB Circular A-21) because the sampled transactions had not been completely reviewed. For federal awards, non-compliant transactions may lead to disallowance of expenditures during a federal audit. In addition, the inability to adequately review purchases also increases the risk of fraudulent reimbursements and/or misappropriation of assets, which may also ultimately hamper efforts to obtain future funding.

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**Management Corrective Actions:**

To ensure that transactions sampled by the transaction sampling system are reviewed in a timely manner, the MAE business office has implemented a new process to gather information and match documentation to expense data. Fund managers will now be responsible for reviewing all sampled transactions on contract and grant activity funds. In addition, the MAE business office will be receiving and reviewing all future purchases in order to ensure that appropriate supporting documentation is maintained.

**C. Express Card Administration**

**The MAE Express Card Department Administrator was also an Express Card holder.**

Express Card Department Administrators (ECDA) are responsible for overseeing the Express Card activity for their department. Responsibilities include requesting cards for employees and reviewing their transactions. If needed, the ECDA can designate Express Card reviewers for particular cardholders in order to allocate the administrative burden of reviewing express card transactions. Assignment of reviewers is accomplished through the ECManager system. Due to their responsibilities and ECManager system rights, an ECDA should not be issued an Express Card.

During our review, we noted that MAE's ECDA had also been issued an Express Card. As a result, this individual was capable of making inappropriate purchases that could potentially go undetected.

**Management Corrective Action:**

MAE management has canceled the Express Card that was assigned to the ECDA.

**D. Equipment Management**

**Equipment inventory has not been performed biennially. In addition, two out of 11 selected equipment purchases could not be traced to CAMS.**

Inventorial equipment has an acquisition cost of \$5,000 or more and must be tracked through the UCSD Capital Asset Management System (CAMS). In order to comply with UC policy Business and Finance Bulletin 29, *Management and*

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*Control of University Inventorial Equipment*, departments must conduct a physical inventory of their inventorial equipment at least once every two years. This ensures that the information in CAMS is accurate and up-to-date.

Per department management, a physical inventory was conducted in 2012. However, the previous fiscal manager had not performed an equipment inventory since 2007.

Additionally, AMAS noted that two equipment purchases above the capitalization threshold could not be traced to CAMS. It is essential that equipment purchases are tracked in CAMS by UCID number in order to facilitate the biennial physical inventory.

The risk of equipment misappropriation increases when equipment inventories are not being performed and when equipment purchases are not tracked in CAMS subsequent to receipt.

**Management Corrective Action:**

MAE will perform an equipment inventory every two years as required by UC policy. Individuals responsible for reviewing and approving equipment purchases will ensure that a UCID number and fabrication number (if applicable) is explicitly indicated on the purchase order in the designated field in order to facilitate tracking in CAMS when the equipment is received.

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Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion <sup>1</sup>	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire(IC Q)/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
Contract & Grant Activity (Post Award Admin.)	√	√	√	Reviewed 3 awards totaling \$8.5 million; evaluated journal vouchers, non-payroll and payroll expenses.	Yes	Satisfactory	Transactions selected appeared reasonable and appropriate to the contract.
Timekeeping & Payroll	√	√	√	Reviewed evidence of DOPE review for two months during FY 2013.	Yes	Satisfactory	Controls over timekeeping and payroll appeared adequate.
Transaction Processing - Non-Payroll Expenditures	√	√	√	Reviewed random and judgmentally-selected transactions; traced to supporting documentation.	Yes	Satisfactory	Controls over other non-payroll related expenses appeared adequate.

<sup>1</sup> Scale: Satisfactory - Improvement Suggested - Improvement Needed - Unsatisfactory

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Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion <sup>2</sup>	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire(IC Q)/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
Travel	√	√	√	Reviewed 10 trips totaling \$63,701; traced to vouchers & supporting documents maintained in the MyTravel system	Yes	Satisfactory	Controls over travel expenses appeared adequate.
Effort Reporting (ECERT)	√	√		Reviewed ECERT Reports and data.	No	Improvement Needed	Noted instances where effort reports had not been certified for six months ( <i>Audit Report Finding A</i> ).
Operating Ledger Review & Financial Reporting	√	√	√	Reviewed the Transaction Sampling Management Report as of September 30, 2013.	No	Improvement Needed	As of September 30, 2013, 333 sampled transactions over 60 days old had not been reviewed, and of the transactions reviewed, 27% had been assigned the "Incomplete Documentation" problem code ( <i>Audit Report Finding B</i> ).

<sup>2</sup> Scale: Satisfactory - Improvement Suggested - Improvement Needed - Unsatisfactory

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Business Office Process	AMAS Audit Review Procedure				Risk & Controls Balance Reasonable (Yes or No)	Audit Conclusion <sup>3</sup>	Comments
	Analytical Review of Financial Data	Internal Control Questionnaire(IC Q)/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)			
Express Card	√	√	√	Reviewed listing of Express Card holders, administrators and reviewers; Reviewed 15 judgmentally selected transactions and traced to supporting documentation.	No	Improvement Needed	The Express Card Administrator was also an Express Card holder ( <i>Audit Report Finding C</i> ).
Equipment Management	√	√	√	Reviewed inventory listing and equipment file for purchases, transfers, and deletes. Traced selected equipment purchases to CAMS.	No	Improvement Needed	Noted that physical inventory was only performed during 2007 and 2012. Also noted two equipment purchases that could not be traced to CAMS ( <i>Audit Report Finding D</i> ).

<sup>3</sup> Scale: Satisfactory - Improvement Suggested - Improvement Needed - Unsatisfactory