June 3, 2015

GEERT SCHMID-SCHOENBEIN Chair Department of Bioengineering 0412

Subject: Department of Bioengineering

Audit & Management Advisory Services Project 2015-11

The final audit report for the Department of Bioengineering, Audit Report 2015-11, is attached. We would like to thank all members of the department for their cooperation and assistance during the audit.

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, and will advise you when the findings are closed.

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 Director Audit & Management Advisory Services

#### Attachment

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## **AUDIT & MANAGEMENT ADVISORY SERVICES**

# Department of Bioengineering June 2015

#### **Performed By:**

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Project Number: 2015-11

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ATTACHMENT A – Audit Results by Business Office Functional Process

#### I. Background

Audit & Management Advisory Services (AMAS) has completed a review of the Department of Bioengineering as part of the approved audit plan for Fiscal Year 2014-15. This report summarizes the results of our review.

The Department of Bioengineering (Department) was initially established at UCSD in 1966 as a program within the Department of Applied Mechanics and Engineering Science (AMES), and with a close affiliation to the UCSD School of Medicine. In light of this affiliation, the program included many faculty with joint appointments, student advisorships, and research projects. Subsequently, the program officially became the Department of Bioengineering within the UCSD Jacobs School of Engineering (JSOE).

Bioengineering was the first Department to transition to a Shared Services Center (SSC) under JSOE. In this model, three fund managers transitioned from the Department to the SSC. These fund managers continue to oversee the same contract and grant portfolio as they had when they were organizationally within Bioengineering, but now report directly to the SSC Director, who reports to the Dean of JSOE. Because operations are ongoing, the changeover has been one of a gradual "phased in" approach.

In transitioning to the SSC model, the Department has had to re-evaluate its administrative structure. The Department has been challenged by changing staffing levels with respect to redistributing workflow and establishing new operating procedures. As of the date of this review, the Department's operating state was fluid as it continued to institute and evaluate new protocols and procedures.

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

The objective of our review was to determine if key controls were adequate to provide reasonable assurance that operations were effective, in compliance with University policy, and resulted in accurate financial reporting. The scope of this review was limited to activities and business practices from July 1, 2013 to December 31, 2014.

In order to achieve our objectives we completed the following:

- Reviewed Departmental organization and financial information;
- Interviewed the Bioengineering Management Services Officer (MSO);
- Requested and reviewed Department responses to internal control questionnaires and separation of duties matrices;
- Reviewed Departmental policies and procedures over key business processes;
- Validated the outstanding effort reports and overdue fund balances;
- Interviewed the SSC Director:

- Reviewed equipment acquisitions and corresponding Campus Asset Management System (CAMS) records;
- Interviewed the Departmental equipment custodian;
- Evaluated findings of fixed asset surveys;
- Tested Express Card, Travel and Entertainment transactions;
- On a quarterly basis of the period under review, analyzed the following:
  - o Fund overdraft balances,
  - o Outstanding effort reports,
  - o Administrative overtime; and
- Performed limited transaction testing over select business processes, as summarized in *Attachment A*.

#### III. Conclusion

We concluded that the Bioengineering Department's internal controls were adequate to provide reasonable assurance that operations were effective, performed in compliance with University policy, and resulted in accurate financial reporting. Although Bioengineering is working with SSC to refine and improve business processes, we did note additional opportunities for improvement which are explained in the balance of this report.

Our summary of results by business office function area is provided as *Attachment A*.

## IV. Observations and Management Corrective Actions

#### A. Overdraft Resolution Plans

Resolution plans have not yet been developed and documented to address fund overdrafts exceeding \$10,000 for over 60 days.

The UCSD Overdraft Policy states that "If an overdraft occurs, administrative officials, or their designees, need to determine the cause, evaluate the activity, and take corrective action." The policy requires that a written plan be developed for the removal of overdraft balances requiring an extended period of time to resolve - usually over 60 days and in excess of \$10,000, and that Department personnel resolve overdrafts in accord with the written plans approved by the cognizant Vice Chancellor or Dean.

We noted that as of December 31, 2014, resolution plans had not been developed to address the following Bioengineering fund deficits exceeding \$10,000 for a period exceeding 60 days:

# Overdraft Summary Schedule Department of Bioengineering (Organzation = 413018) December 31, 2014

				Months in
Ref.	Fund	Fund Title	Balance	Overdraft
1	05397A	EDUCATIONAL FUND	(18,749)	4
2	54247A	AO RSCH FDN S-07-96S SAH	(17,801)	59
3	55370A	UCFDN/JACOBS ENGINEERING FUND /1550	(191,365)	19
4	56757A	UCFDN/AMES-MED/1990	(12,440)	48
5	60742A	VC ACAD AFFAIRS-MISC SALES GOODS/SV	(28,082)	2
6	69750A	CONTRACT AND GRANT ADMIN	(36,351)	59
7	8558BA	TECHNICAL UNIVERSITY PALSSON 8558BA	(119,212)	2
8	857F8A	MOD ZHONG	(28,918)	4
9	87286A	NIH-TSRI/SAH/54.5% 07/11	(19,409)	40
10	87877A	NIH-MED COL WISCONSIN/MC CULLOCH/54	(13,458)	2
11	87929A	DIAGENODE HUANG	(63,694)	15
12	88360A	JOHNS HOPKINS U (NIH AG042187) ZHAN	(29,233)	5
13	88656A	TSRI/ 5-50172/ SAH	(67,422)	11
14	89210A	FF-NIH/ UNIV OF MICHIGAN/ 300304979	(34,841)	5
	Total outs	standing	\$ (680,975)	,

Without firm documented action plans that have the commitment of University administrators, overdrafts may remain unresolved.

#### **Management Corrective Action:**

Bioengineering will coordinate with the SSC to develop written plans to resolve these fund overdrafts as required by University policy, and obtain required approvals.

#### B. Travel Documentation

We identified two travel events in which the supporting documentation was not in strict compliance with University of California travel policy Business and Financial Bulletin G-28 (BFB G-28), or recommended best practices.

#### First Class Travel

BFB G-28 states that business or first class air travel can be authorized in limited circumstances, one of which is to reasonably accommodate a medical need. BFB G-28 further requires that documentation of such circumstances be provided on the travel expense voucher. UCSD guidelines, as provided at blink.ucsd.edu, require that medical needs of a traveler be certified by a physician annually.

The Office of Management and Budget Circular A-21 (OMB A-21) sets forth similar requirements regarding the use of federal funds for first class travel to those that are included in BFB G-28. OMB A-21, Section 54, states that costs in excess of coach are unallowable except for when such accommodations are reasonable given the traveler's medical needs.

During our review of travel expenses, we noted an instance in which a researcher traveled first class on a federal award in order to assist a UCSD professor who had a medical condition requiring the use of first class travel. The professor's airfare was paid using state funds, and the researcher's travel was paid using federal funds. Neither travel event included documentation explaining the premium travel as required UC policy. We also noted that the professor had used first class airfare for other travel events, none of which contained documentation supporting the use of premium airfare.

In addition, it appears that the award documents for the federal fund used to pay for the researcher's travel costs did not allow for that specific event.

Based on discussions with Bioengineering staff, the Department was aware of the professor's medical condition, but did not take the appropriate steps to ensure that the use of first class airfare was adequately documented in the MyTravel system. Ideally, the description of the event in MyTravel should acknowledge that the traveler used first class airfare due to a medical condition, and supporting documentation should include a medical note certified by a physician dated no later than one year prior to the travel event.

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

All forthcoming travel events that include first or business class travel will include adequate documentation supporting the expense, as required by BFB G-28 and UCSD guidelines. Department staff will receive further training for how to properly document premium travel within existing business systems.

The Department will review the award documentation for the funds used to pay for the researcher's travel event to evaluate if the travel costs were allowable. If deemed unallowable, the Department will transfer those costs to an unrestricted funding source.

#### **Business Purpose of Events**

University of California Policy BFB-G-28 Travel Regulations, Sec. I. a., requires that the travel voucher include "the purpose for the travel or nature of the business

benefit derived as the result of the travel." Under section d., Documentation Requirements, it states that "depending on the nature of the trip, an agenda associated with the reason for the trip should be provided as part of the substantiation documentation."

The MyTravel system includes a *Business Purpose / General Event Notes* field that is used to document the business purpose of the travel event. Depending on the nature of the trip, substantiating documentation such as an agenda, conference brochure, or invitation letter associated with the business reason could be attached to the MyTravel expense voucher.

During our testing of travel vouchers, we noted one event in which the business purpose of the event was stated to be a conference in Vancouver. Expenses incurred as part of this event included travel to Boston. The MSO indicated that the traveler had other business to attend to in Boston. However, the business purpose of this travel was not readily apparent on the MyTravel expense voucher.

#### **Management Corrective Action:**

The Department personnel responsible for preparing or approving travel events will review MyTravel to ensure that the business purpose of the event is fully disclosed within the MyTravel *Business Purpose / General Event Notes* field.

#### C. Travel Approvals

Travel expenses incurred by the Department Chair and the MSO were not approved in accordance with BFB G-28.

BFB G-28 requires that a travel expenses be approved by an individual who does not report directly or indirectly to the traveler. In addition, persons delegated the authority to approve travel shall not approve their own travel.

We noted that the MSO was responsible for approving travel expenses incurred by the Chair of Bioengineering, an individual to whom the MSO directly reports. The Department was of the understanding that monthly meetings between the Chair and the JSOE Dean included a discussion of the Chair's travel expenses, and that this was adequate form of authorization. However, approval of these expenses by the Dean's office was not documented.

We also noted that the MSO was responsible for approving her own business related travel expenses electronically. The Department did have a process in place to obtain manual approval of these expenses from the Department Chair.

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

The Department will coordinate with the JSOE Dean's office to assign the responsibility for reviewing and approving the Chair's expenses to an individual who does not report directly or indirectly to the Chair. Further, responsibility for approving travel expenses incurred by the MSO will be assigned to the Chair, or to an individual in the Dean's Office.

Travel approval templates will be updated to ensure proper electronic approvals.

#### D. Separated Employees

Department procedures did not ensure that separated employees were removed from IFIS approval templates in a timely manner, and that Express Cards assigned to separated employees were either canceled or reassigned.

As of the date of our review, IFIS approval templates included two separated employees. One of these employees was an individual who separated from the Department three months earlier. The other was the former MSO, who had been reassigned four months prior. In addition, the former MSO, who is now with the Dean's office, continued to have an Express Card that was associated with a Bioengineering IFIS index.

The Department Security Administrator (DSA) is responsible for ensuring that system access is appropriately restricted when employees separate from the Department. This should include reviewing IFIS approval templates. Although the risks that separated employees having systems access may vary depending on individual permissions, it is prudent business practice to remove their access as soon as possible.

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

The separated employee and former MSO will be removed from IFIS approval templates, and that the Express Card assigned to the former MSO will either be canceled or reassigned to the former MSO's new home Department.

The MSO will coordinate with the DSA to develop processes to ensure that IFIS approval templates are promptly updated when employees separate from the Department. This process will include a review of Department Express Cards.

#### **E.** Transaction Sampling

# Department has not timely reviewed all transactions selected by the campus Transaction Sampling system.

Bioengineering has enrolled in transaction sampling for operating ledger reconciliation. Transaction sampling is a process managed by UCSD Controller's office that selects transaction for review during the ledger reconciliation period. The process can substantially reduce the workload associated with a 100% operating ledger transaction review process. Departments opting to use the system are expected to review all of the transactions that are sampled by the system, without exception, and documented the results of the review. 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.

During the 4<sup>th</sup> quarter of FY 2013-14, responsibility for transaction sampling was transitioned from Bioengineering to the SSC. As summarized in the following schedule, neither Bioengineering or SSC effectively reviewed 100% of the transactions sampled by the Transaction Sampling system.

	FY2014 1 <sup>st</sup>	FY2014 2 <sup>nd</sup>	FY2014 3 <sup>rd</sup>	FY2014 4 <sup>th</sup>	FY2015 1 <sup>st</sup>
	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.
Sample	504	878	511	483	560
Reviewed	247	475	303	271	501
Percent	49%	54%	59%	56%	89%
Reviewed					

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 statistically selected transactions has not all been reviewed. For federal awards, non-compliant transactions may lead to disallowance of expenditures as a result of a federal audit. In addition, the inability to adequately review purchases increases the risk of fraudulent reimbursements and/or misappropriation of assets, which may ultimately hamper efforts to obtain future funding.

#### **Management Corrective Action:**

Bioengineering will work with SSC to ensure that all transactions sampled by the Transaction Sampling system are reviewed in a timely manner, and that evidence of this reviewed is adequately documented.

#### F. Award Submissions

Two proposals for extramural funding processed by the JSOE SSC on behalf of Bioengineering were submitted by a researcher who did not have an appropriate academic title code, as required by Policy and Procedure Manual (PPM) 150-10.

UCSD PPM150-10, Eligibility to Submit Proposals for Extramural Support, Sec. III. Eligible Appointees and Exceptions, states that "On or before the start date of a proposed project, the Principal Investigator(s) must have formally accepted an appointment at UCSD in an eligible title, or qualify by exception approved by the Vice Chancellor for Research as noted below." Section III.A provides a list of titles codes of academic appointees that are automatically eligible to submit proposals. Section III.B provides a list of title codes of appointees for which an exception must be obtained from the Vice Chancellor of Research in order to submit a proposal.

During our review of the pre-award process and award submissions, we noted that a Bioengineering Assistant Project Scientist, title code 3395, submitted two extramural funding proposals that were processed by SSC on behalf of the Department. Because 3395 is not a title code that is explicitly authorized to submit proposals, an exception form was required. However, no exception form was submitted.

The SSC Director advised that SSC was aware of the requirements set forth in PPM 150-10, but believed that since the Office of Contract and Grant Administration (OCGA) had not been asking for a PI exception form, the submission of an exception form was not necessary.

#### **Management Corrective Action:**

The Department will coordinate with SSC to develop a process to ensure that the title codes of individuals submitting proposals are either specifically authorized to do so per PPM 510-10, or that an exception form is obtained and documented as part of the application file.

#### **G.** Overtime Approval

Overtime worked by Department employees were not pre-approved in accordance with University policy.

UCSD Implementing Procedures HR-S-1, Section 32/Overtime, states that overtime worked on an irregular basis according to the needs and discretion of the Department is considered intermittent overtime, and is to be approved by the Department head in advance.

UCSD PPM 395-4.1 Payroll, in Sec. 2, states that the Departmental Approval of Absence or Overtime (DAAO) form is to be used to transmit information from staff employees to timekeeper, and to certify to the timekeeper that the employee's supervisor is aware and approves of the overtime or absences to be recorded. The policy further states that Departments using alternate media must have their internal procedures documented.

During our review, we judgmentally selected three different employees that had worked overtime during a specific pay period, and requested evidence that the Department had provided pre-approval to the employee for the overtime worked. The Department was not able to provide evidence of pre-approval for any of the employees we selected.

#### **Management Corrective Action:**

The Department will establish procedures to ensure that overtime is either pre-approved, or retroactively approved shortly after the overtime is worked, and that approvals are documented in accordance with policy.

#### H. Effort Reporting

Required quarterly certifications of effort charged to federal sponsored research fund sources were not completed in a timely manner.

As required by the Office of Management and Budget (OMB) Circular A-21, the University of California has adopted a quarterly effort reporting process<sup>1</sup>. This method requires that federal award recipients actively certify the level of effort put forward by themselves and their staff (if applicable) on the award on a quarterly basis. To ensure that certifications are completed on a timely basis, the

<sup>&</sup>lt;sup>1</sup> As of December 26, 2014, OMB Circular A-21 was superseded by OMB A-81, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*. In addition, as of January 1, 2015 the campus changed the effort certification reporting period from quarterly to semi-annually.

University requires that certifications be completed within 120 days of the end of the quarter. At UCSD, the Electronic Certification of Effort and Reporting Tool (ECERT) is used to certify effort.

Each Primary Investigator (PI), Co-PI, or designate such as a project scientist or a laboratory manager, may certify effort reports for themselves and the staff assigned to them. If the level of effort put forward is different than expected, the effort percentages are adjusted accordingly by transferring payroll expenses as needed to the appropriate award.

Bioengineering has reduced the number of effort reports outstanding since transitioning to SSC. Of the six outstanding effort reports as of January 2015, one is significantly (700 days) overdue. Per the Department, the Primary Investigator (PI) was incapacitated, and was unable to certify.

Effort reports that remain uncertified past the deadlines increase the federal audit risk to the Department. Departments work with the researchers to help with any certification issues. In exceptional circumstances, where the intended certifier is not able to complete their task as intended, it is incumbent on the Department to contact OPAFS and resolve the issue.

#### **Management Corrective Action:**

Bioengineering, in coordination with SSC, will contact OPAFS to discuss alternative certification procedures for instances where certifiers are not able to complete their oversight of effort reports, and will address the outstanding effort report identified above.

#### I. Equipment Inventory Records

Recently purchased equipment was not fully documented in the Campus Asset Management System (CAMS).

Inventorial equipment costing more that \$5,000 is required to be tracked trough the UCSD CAMS system. In order to facilitate effective tracking of equipment, serial numbers are one of the elements required to be recorded for asset tracking purposes per BUS-29 *Management and Control of University Equipment*.

Based on our review of 35 capital asset purchases, we found that serial numbers of only eight of the items (22%) were documented in the CAMS system. Recording serial numbers completes CAMS records and demonstrates the Departments effective management and control of assets.

## **Management Corrective Action:**

The Department administration, as part of their review of the biannual equipment inventory completed by the equipment custodian, will validate the completeness of CAMS records for all capital equipment.

		t Review Procedur	Risk &				
Business Office Process	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)	Controls Balance Reasonable (Yes or No)	Audit Conclusion <sup>1</sup>	Comments
Cash		$\sqrt{}$	$\sqrt{}$	Walked through cash deposit process with Department.	Yes	Satisfactory	Controls over the collection of cash and cash equivalents appeared low risk based on volume.
Contract & Grant Activity (Post Award Admin.)	V	V		From a high risk stratified random sample, reviewed six Electronic Payroll Expense Transfers (EPETs). Reviewed two Electronic Non-Payroll Expense Transfers.	Yes	Satisfactory	Controls over federal contract and grant expenditure activity appear adequate.
Express Cards	√		√	Reviewed a sample of transactions for supporting documentation. Reviewed user and reviewer lists for conflicts.	Yes	Satisfactory	Controls over Express Cards appeared adequate, with one exception (see Audit Finding D).

<sup>&</sup>lt;sup>1</sup> Scale: Satisfactory – Improvement Suggested – Improvement Needed – Unsatisfactory

		AMAS Audi	t Review Procedur	Risk & Controls			
Business Office Process	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)	Balance Reasonable (Yes or No)	e Audit Conclusion <sup>1</sup>	Comments
Entertainment	V		V	Reviewed three judgmentally selected transactions for reasonableness and compliance with policy.	Yes	Satisfactory	Controls over entertainment expenses appeared reasonable.
Operating Ledger Review & Financial Reporting	$\sqrt{}$	V	V	Reviewed transaction sampling rates and fund balance management.	No	Improvement Needed	Overdraft fund resolution plans not consistently demonstrates as per UCSD policy ( <i>Audit Report Finding A</i> ).  Transaction sampling not completed timely ( <i>Audit Report Finding E</i> ).
Travel Expenditures	V	V	V	Reviewed 10 travel events for authorization and compliance with policy.	No	Improvement Needed	Two travel events reviewed were not in strict compliance with policy ( <i>Audit Report Finding B</i> ), and travel for the Chair and MSO were not approved in compliance with policy ( <i>Audit Report Finding C</i> ).

 $<sup>^{1}</sup> Scale: Satisfactory-Improvement \ Suggested-Improvement \ Needed-Unsatisfactory$ 

	AMAS Audit Review Procedure							
Business Office Process	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)	Ralance I	Audit Conclusion <sup>1</sup>	Comments	
Information Systems Environment	V		V	Reviewed Information Systems Questionnaires and IFIS approval templates.	No	Improvement Needed	IFIS approval templates should to be updated to remove a separated employees ( <i>Audit Report Finding D</i> ).	
Contract & Grant Activity (Pre-Award)	V		V	Reviewed nine judgmentally selected award proposals for PI compliance with PPM 150-10.	Yes	Improvement Suggested	Two proposals were submitted by a researcher without the appropriate title coded as per PPM 150-10 (Audit Report Finding F).	
Timekeeping & Payroll	V	V	V	Reviewed overtime and leave activity along with associated timecards.	Yes	Improvement Suggested	The review of manual timecards, along with overtime and leave approvals should be improved to be compliant with policy (Audit Report Finding G).	
Effort Reporting	V	V		Reviewed adjusted Payroll Activity Reports; traced to Payroll Expenditure Transfers.	Yes	Improvement Suggested	One effort report was not certified in a timely manner (Audit Report Finding H).	

<sup>&</sup>lt;sup>1</sup> Scale: Satisfactory – Improvement Suggested – Improvement Needed – Unsatisfactory

		AMAS Audi	t Review Procedur	Risk & Controls			
Business Office Process	Analytical Review of Financial Data	Internal Control Questionnaire/ Separation of Duties Matrix	Process Walk-through (Ltd Document Review)	Transaction Testing (Sample Basis)	Balance Reasonable (Yes or No)	Audit Conclusion <sup>1</sup>	Comments
Equipment Management	$\sqrt{}$		V	Reviewed equipment inventory purchases and associated CAMS records.	Yes	Improvement Suggested	Equipment management practices appeared adequate, but procedures should be improved to capture serial numbers on new equipment (Audit Report Finding I).

<sup>&</sup>lt;sup>1</sup> Scale: Satisfactory – Improvement Suggested – Improvement Needed – Unsatisfactory