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## UCSB AUDIT AND ADVISORY SERVICES

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November 10, 2010

CHAIR JERRY GIBSON:

Re: Electrical and Computer Engineering  
Audit Report No. 08-11-00003

As part of the 2010-11 annual audit plan, Audit and Advisory Services conducted an audit of the Electrical and Computer Engineering (ECE) department. Enclosed is the audit report detailing the results of our review.

The purpose of the review was to evaluate whether adequate internal controls had been implemented over monitoring of sponsored projects. The scope of the review included discussions with ECE departmental staff, completion of internal control questionnaires, and limited testing of sponsored projects expenses during fiscal year 2009-10.

Based on the results of work performed within the scope of the review, we did not identify any significant deficiencies or material weaknesses in internal controls. We found the department had established effective systems of internal controls over the management of sponsored projects. In addition, the department's sponsored projects are managed by staff who are knowledgeable regarding University policies and procedures and sponsor regulations. However, we noted opportunities to further improve and strengthen internal controls in the areas of cost transfers, direct charges, timely submission of PARs to Accounting Services and Controls, and submittal of final technical reports.

We have included a copy of our detailed observations and management corrective actions. The management corrective actions provided indicate that each suggestion for improvement in internal controls was given thoughtful consideration and that positive actions have been planned to implement the management corrective actions. The cooperation and assistance provided by ECE staff during the review was sincerely appreciated. If you have any questions, please feel free to contact me.



Craig Whitebirch  
Director  
Audit and Advisory Services

CHAIR JERRY GIBSON  
November 10, 2010

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Enclosure

cc: Chancellor Henry Yang  
Executive Vice Chancellor Gene Lucas  
Associate Vice Chancellor Ron Cortez  
Acting Dean Larry Coldren  
Business Officer Robin Jenneve  
UCSB Audit Committee  
Senior Vice President and Chief Compliance and Audit Officer Sheryl Vacca

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**ELECTRICAL AND COMPUTER ENGINEERING  
AUDIT REPORT NO. 08-11-00003**

**Performed by:**

Robert Tarsia, Assistant Director  
Sam Hartline, Principal Auditor

**Approved by:**

Craig Whitebirch, Director

ELECTRICAL AND COMPUTER ENGINEERING  
AUDIT REPORT NO. 08-11-00003

**Purpose and Scope**

The purpose of the review was to evaluate whether adequate internal controls had been implemented over the management of sponsored projects. The scope of the review included discussions with Electrical and Computer Engineering departmental staff, completion of internal control questionnaires, and limited audit testing of sponsored projects expenses during fiscal year 2009-10. Work was performed in the following areas:

- Management of Sponsored Projects
- Information Systems
- Direct Charging Practices
- Effort Reporting
- Cost Transfers
- Subagreements
- Overdrafts
- Charges at the End of an Award
- Sponsored Projects Closeout
- Final Technical Reports

**Background**

The Electrical and Computer Engineering department (ECE) was established in 1962 and is the largest of the five academic departments within the College of Engineering. ECE seeks to provide a comprehensive, rigorous, and accredited educational program for the graduates of California's high schools and for postgraduate students, both domestic and international. The department's dual mission is: (1) through education, to develop and produce excellent electrical and computer engineers who will support the high-tech economy of California and the nation, and (2) to develop relevant and innovative science and technology through research that addresses the needs of industry, government, and the scientific community.

ECE at UCSB is known for its high-impact and interdisciplinary research conducted with support from a wide array of funding agencies and industrial sponsors. Research in ECE is carried out within four focus areas: Communications and Signal Processing, Computer Engineering, Control Systems, and Electronics and Photonics. Research institutes, centers and facilities with ECE department and faculty affiliations include the California Nanosystems Institute (CNSI), the Institute for Collaborative Biotechnologies (ICB), the Institute for Energy Efficiency (IEE), the UCSB Nanofabrication Facility (NNIN), the Center for Energy Efficiency Materials (CEEM), the Center for Control Dynamical System and Computation (CCDC), DARPA Label Switched Optical Router (LASOR), and the Solid-State Lighting and Energy Center (SSLEC). Research funding at ECE for fiscal year 2009-10 totaled \$35.75 million (\$32.5 million from government sponsors, \$2.8 million through corporate sponsors, and \$.45 million from other sponsors).

ECE is part of the Division of Academic Affairs, and the Chair of ECE reports through the Acting Dean of the College of Engineering to the Executive Vice Chancellor. ECE administrative and financial support services are under the direction of the ECE Business Officer.

### **Summary Opinion**

Based on the results of the work performed within the scope of the review, our review did not identify any significant deficiencies or material weaknesses in internal controls. We found that the department had established effective systems of internal controls over the management of sponsored projects. In addition, the department's sponsored projects are managed by staff who are knowledgeable regarding University policies and procedures and sponsor regulations. However, we noted opportunities to further improve and strengthen internal controls in the areas of cost transfers, direct charges, timely submission of PARs to Accounting Services and Controls, and submittal of final technical reports.

These and other audit observations and management corrective actions are detailed in the remainder of the audit report.

## Detailed Observations and Management Corrective Actions

### A. Management of Sponsored Projects

During fiscal year 2009-10, the department managed 181 active awards, including 125 Federal awards, with \$118,239,850 in total award funding. The department's sponsored projects included awards through the National Science Foundation (NSF), Office of Naval Research (ONR), Air Force Office of Scientific Research (AFOSR), the Army, and various other agencies. Audit attention focused on ensuring that there are adequate resources dedicated to managing sponsored projects and that internal controls within the department had been established to ensure compliance with University policies, procedures, and external sponsor regulations.

#### 1. Managing Sponsored Projects

Our review to determine how ECE allocates departmental resources to manage its sponsored projects included completing a Sponsored Projects Responsibilities separation of duties matrix. Based on the work performed, it appears that ECE has been able to effectively manage its sponsored projects. Current resources dedicated to managing sponsored projects amount to 1.4 FTE for pre-award and 9.65 FTE for post-award. The department Business Officer and Financial Affairs Manager indicated that use of the Grand Unified System (GUS) has enabled the department to streamline management of its sponsored projects with current staffing levels.

We also determined whether personnel within ECE who are engaged in managing sponsored projects had attended research administration training courses, and were knowledgeable in the financial management of sponsored projects. The Business Officer and Financial Affairs Manager indicated that ECE staff have received training through the campus Sponsored Projects Training for Administrators in Research (STAR) training program offered by the Office of Research. In addition, interactions with department staff during the review indicated employees responsible for managing sponsored projects appeared knowledgeable in University policies and practices, and with sponsor regulations.

## 2. Application Preparation and Submission

Our review indicated that ECE had implemented adequate pre-award monitoring procedures to ensure that applications submitted to the Office of Research were submitted in compliance with UCSB's Policy on the Submittal of Proposals, Acceptance of Awards, and Administration of Contracts and Grants. In addition, a judgmental sample of 10 active awards was selected and each application submitted to the Office of Research was reviewed to verify the following:

- The principal investigator was eligible to be a principal investigator or a "Request for Exception" had been properly approved.
- The principal investigator contributed more than a minimum or nominal amount of time and effort to the project.
- Key personnel salaries included in the proposal budget agreed with their documented UCSB salaries.
- The Facilities and Administrative (F&A) rate in the proposal was submitted at the current UCSB approved rate and, if not, an F&A rate reduction or waiver was completed and approved.
- Any cost sharing and matching commitments were fully disclosed in the proposal budget.
- The principal investigator properly disclosed required assurances.

The following was noted:

- In all ten cases, the principal investigator was eligible to submit a proposal, proposed more than a minimum amount of time and effort to the projects, and properly disclosed all assurances.
- In all proposals, the key personnel's salary agreed with their documented UCSB salary.
- In all proposals, the F&A rate submitted in the proposal agreed with the UCSB approved rate or rate negotiated with the cognizant agency, or an Indirect Cost Waiver form was completed and approved.

- Any cost sharing or matching commitments were fully disclosed in the proposal budget.

## B. Information Systems

ECE utilizes GUS for the financial management of its sponsored projects and to reconcile financial transactions to the campus general ledger. GUS is a custom database system developed at UCSB that is used to manage and maintain funding sources, purchasing transactions, liens, and other essential financial information for departments. GUS enables departments to reduce the amount of time (and cost) it takes to reconcile their financial records to the campus general ledger system by automating a significant portion of the processes. GUS also allows principal investigators easy access to real time financial information on their sponsored projects by having web-based access to financial reports and detailed transactions.

Our testwork included verifying that the campus general ledger and GUS were being reconciled on a monthly basis and that the review was being adequately documented. We also ensured that reconciliation of the monthly Distribution of Payroll Expense Reports was being adequately documented. Testwork indicated that the department was performing and appropriately documenting the monthly reconciliations, and had effective internal control systems in this area.

## C. Direct Charging Practices

A review was performed to determine how the department directly charges and allocates costs on sponsored projects. Discussions with the department indicated they have developed business practices and internal controls to ensure that expenditures on sponsored projects are appropriate as a direct charge, charged to the appropriate fund, properly approved, and charged to the most appropriate object code. Judgmental samples of 20 sponsored projects non-payroll and 10 typically F&A type transactions were selected and reviewed for appropriateness. The following was noted:

### *Direct Charging Practices*

- For one transaction, the terms and conditions of the purchase agreement for the direct expense appeared to present a risk exposure to the department. The payment terms of a \$49,528 purchase order for research-related equipment required a 50% deposit to the



vendor at the time of the order, with the balance due upon equipment delivery and installation. However, the standard University purchase order terms and conditions used for the agreement did not appear to adequately mitigate the department's risk of recourse regarding the 50% deposit, had the vendor not provided the equipment in accordance with the agreement terms. Although the payment and equipment delivery requirements in this case were met, the department indicated that vendor requests for partial, up-front deposit payments were being encountered more frequently.

- The documentation supporting two transactions reviewed did not contain adequate indication that the charges had been properly reviewed and authorized. These two charges were supported by recharge billings from campus service centers that detailed the expenses incurred by the respective research projects during the service center billing periods. In both cases, the charges appeared to be an appropriate direct charge against the funds. However, neither of the supporting documents contained evidence that the charges had been reviewed by an appropriate authority and determined to be allowable charges against the funds.
- For all 20 transactions, the charge was not transferred or did not appear to be charged due to an overrun on another sponsored project.

#### *Typically F&A Charges*

- In all ten transactions, the charges were found to be an appropriate direct charge to the sponsored project, and each was adequately justified and supported.

For future purchase transactions for which the vendor requires an up-front payment or deposit, ECE should consult as necessary with the Office of Research, Purchasing, and/or the sponsoring agency to ensure that the risk exposure related to recovery of the pre-payment, if the vendor does not follow-through with their provision of agreed-upon goods or services, has been adequately mitigated through appropriate agreement terms and conditions.

Campus service center recharge billing statements that support direct charges against sponsored projects funds should be reviewed by an appropriate authority. The reviewer should sign and date the statements to provide documented evidence that the charges have been determined to be allowable direct charges against the funds.

### Management Corrective Actions

*Pre-payment terms required by vendor:* The department Purchasing Assistant will send an email to the PI indicating the pre-payment terms are not the standard University payment terms and conditions, and will ask the PI to cover any financial risk by agreeing to alternately pay the costs on an unrestricted funding source in the event the vendor does not follow through with their provision of agreed-upon goods or services. This procedure will be implemented by December 31, 2010.

*Campus Service Center Recharges:* The Contract/Grant Analysts will review, sign, and date the recharge documentation to confirm the expense is an allowable direct charge against the fund source. Additionally, if the recharge involves entertainment, the Entertainment Form-5 will be completed and approved by the PI and Chair to support the charge. This procedure will be implemented by December 31, 2010.

#### D. Effort Reporting

A review was performed of the ECE processes for ensuring compliance with OMB Circular A-21 (2 CFR Part 220) and UCSB effort reporting policies and procedures. A judgmental sample of ten employees and their associated Personnel Activity Reports (PARs) during 2009-10 was selected for review. Audit attention focused on determining whether:

- Procedures had been established to ensure the department was notified if a principal investigator or other key personnel specifically named in the Notice of Grant Award (NOGA) withdraws from the project, is absent during any period of three months or more, or reduces time devoted to the project by 25% or more from the level that was approved at the time of the award.
- The individual certifying the PAR had direct first hand knowledge of the employee's effort.
- Effort certified was in compliance with effort committed or the variance was justified and properly approved.
- PARs were returned to Extramural Funds Accounting (EFA) in a timely manner.
- Any departmental administrative and clerical salaries charged to federal sponsored projects were appropriate.

The review indicated that procedures were in place to ensure departmental notification when a principal investigator or other key personnel withdraws from the project or reduces their time significantly from the level approved at the time of the award. All PARs reviewed had been approved by individuals with suitable means of verification, and the effort certified appeared to be in compliance with the effort committed. It was noted that one individual with an administrative title code was being charged to departmental sponsored projects. However, in this case the projects were either ongoing research-related programs or large research centers where the individual's assignments were wholly or partially exclusive to work being performed as part of the program or center, and the position was listed as key personnel in the award budgets with the need for the position justified for the relevant sponsored projects. The direct charging of salary in this case appeared to be appropriate, properly supported, and allowable.

In all cases reviewed, the PARs were not returned to EFA in a timely manner. All ten PARs tested for timeliness of submission had been submitted 15 to 56 business days past the requested EFA due date. In five of the ten cases, the PARs had not been submitted to EFA within 120 days of the end of the PAR reporting period, as required by University policy. The department should enhance business practices to help ensure PARs are submitted to EFA in a timely manner.

#### Management Corrective Actions

*PARs Timeliness:* Upon receipt of the PARs from EFA, the ECE Budget Office will log and disburse PARs to the PIs within one week. PIs will be required to return them to the Personnel Analyst within one week of receiving them. For any PARs that are not returned by the Department's internal deadline, the Personnel Analyst will send a reminder email to the PIs, and if there is no response from the PI, the Personnel Analyst will notify the Financial Manager and/or the Department Chair. When the PARs are returned to the Personnel Analyst, they will be reviewed, copied, and sent to Accounting by EFA's deadline. Our understanding is that the online PAR system will be implemented campus-wide in the near future which, we believe, will further improve the timeliness. This procedure will be implemented with the next PAR cycle (Summer 2010) which we expect

to receive in December 2010. Processing of the PARs will therefore be completed, and the procedure implemented, by February 28, 2011.

#### E. Cost Transfers

A review was performed of both labor and non-labor cost transfers on federally sponsored projects to ensure compliance with UCSB policies and procedures, OMB Circular A-21, and sponsor regulations. Judgmental samples of five labor and five non-labor cost transfers from 2009-10 were selected to verify that the cost transfers were performed in a timely manner, were properly authorized, and supported by an adequate justification as to why the cost was transferred and how it benefitted the project debited. The following was noted:

##### *Labor Transfers*

- For all five transfers reviewed, the payroll cost transfer was properly authorized, performed in a timely manner in accordance with policy, and the transfer appeared allowable under UCSB policies and procedures, OMB Circular A-21, and sponsor regulations.

##### *Non-Labor Transfers*

- For all five transactions, the transfers were properly authorized and appeared allowable under UCSB policies and procedures, OMB Circular A-21, and sponsor regulations. However, in two of the five cases, the non-payroll cost transfers were not performed within the required 120 day timeframe. In one of the cases, the transfer was made 225 days after the original charge and in a second case the transfer was made almost a year after the original transaction date. In both cases, ECE had followed campus processing requirements and submitted additional explanations for the tardy cost transfers that were approved through EFA.
- In one instance, the justification for the cost transfer did not adequately explain the methodology for allocation of a portion of the original charge to the project being debited. Business and Finance Bulletin A-47 (A-47), "University Direct Costing Procedures," requires that, if transferring a fractional amount, the transfer request "must contain an explanation supporting a reasonable and equitable method of

allocation.” Documentation supporting the transfer contained no detailed support for the expense allocation methodology.

The department should assess and enhance practices to ensure that cost transfers are identified and submitted in a timely manner in compliance with University policy and applicable procedures and regulations. To strengthen internal controls over cost transfers and improve compliance with A-47, the department should provide a full explanation for allocating a portion of an expense that details a reasonable and equitable method for the allocation.

#### Management Corrective Actions

*Late Cost Transfers:* In light of the recent implementation of the campus escalation process for cost transfers older than 120 days, we have stepped up our efforts to remind and further educate the PIs and staff on the importance of identifying costs to be transferred on a timely basis. We forwarded the 120-day escalation process from EFA to all PIs and administrative staff, and the staff will work closely with the PIs and continue to remind them on a regular basis. This procedure was put in place in ECE when we were notified of the new campus 120-day escalation process in August 2010.

As part of Audit and Advisory Services’ follow-up process for these management corrective actions, we plan to review a sample of ECE cost transfers processed since the date of this report to ensure management’s corrective actions have been implemented and are functioning as planned. Our follow-up review will be performed by February 28, 2011.

*Allocation Methodology for Partial Non-Labor Transfer of Expense:* We will ask the PI to provide in writing their methodology and explanation for determining a reasonable and equitable split distribution between awards. These transfers will be reviewed and approved by the Financial Manager for A-47 compliance. This procedure will be implemented by December 31, 2010.

#### F. Subagreements

A review was performed to determine whether ECE had implemented procedures to monitor subagreement costs to ensure compliance with applicable Federal requirements. A

judgmental sample of five subagreement invoices (object codes 7300 and 7305) was selected to verify compliance. Based on the testwork performed, the department had effective business practices over their subagreements. The following was noted:

- In all cases where applicable, the Cost/Price Analysis and Related Information Subagreement Closeout Certification forms were prepared and signed by the principal investigator.
- In each case where applicable, a Subrecipient Commitment Form had been properly prepared and approved.
- In each case where applicable, a Certificate of Compliance with OMB Circular A-133 had been completed.
- For all five invoices, the period invoiced was within the period of the subagreement and the total value of the invoices did not exceed the total amount obligated by the subagreement.
- F&A costs were appropriately charged in all cases where applicable.
- For all five invoices, the principal investigator indicated that the invoiced costs were reviewed for allowability and reasonableness.

#### G. Overdrafts

To ensure that internal controls over monitoring sponsored projects spending were effective, a summary of all sponsored projects overdrafts as of June 30, 2010, was prepared to determine the value of overdrafts. The reasons for all overdrafts were obtained and reviewed. Testwork indicated that the department had 12 sponsored projects accounts in overdraft status at June 30, 2010, totaling \$223,457. The overdrafts were primarily due to outstanding purchase liens on the accounts.

We determined that the overdrafts on 8 of the 12 accounts had been appropriately cleared by the time of our review. For one account, the department had recently requested that Accounting Services and Controls remove an outstanding lien in order to clear the overdraft. For two of the accounts, the department was awaiting agency-approved, but overdue, funding increments that would clear the overdrafts. In the remaining case, the department was awaiting the next approved incremental funding amount from the agency to clear the overdraft. The department provided support that indicated the agency had

approved an accelerated spending rate in the first year of the award due to heavy demands of the project during the beginning stages.

Our review indicated that the department had established procedures for actively monitoring the financial status of sponsored projects funds, and for reviewing and resolving any overdrafts on sponsored projects in a timely manner.

#### H. Charges at the End of an Award

To determine if charges at the end of awards were appropriate, a judgmental sample of five awards with expired award dates during fiscal 2009-10 was selected for review. The awards were examined for large cost transfers within the last month of the award period and large expenses within the last 90 days of the award period. The cost transfers and large expenses were examined to determine whether they were appropriate. For all five awards, there were no large cost transfers within the last month of the award period and those expenses reviewed at the end of the award period appeared appropriate.

#### I. Sponsored Projects Closeout

To ensure that the department had established procedures to monitor award end dates and assist EFA in closing out all associated funds, we reviewed a judgmental sample of five awards with inactive end dates that did not appear to have been closed out as of June 30, 2010. Testwork included determining whether all the cash had been received on current expired awards and whether the funds were currently closed out. The auditor also determined the reasons why those awards that remained open had not been closed. Testwork indicated all cash had been received, and four of the expired awards reviewed had been closed at the time of our audit. The fifth award reviewed had been extended to February 15, 2011, by the sponsor.

#### J. Final Technical Reports

Principal investigators are responsible for preparing and submitting sponsor-required final technical reports. To determine whether principal investigators are submitting technical reports in accordance with federal, sponsor, and UCSB policies and procedures, we selected a judgmental sample of five awards and determined whether the final technical report was submitted in a timely manner. The following was noted:

- In four of the five instances, the final technical reports were submitted in a timely manner.
- In one instance, the final technical report was submitted 53 days after the sponsor's due date.

Late or missing final technical reports can trigger audits and can also result in the University not being able to obtain payment of final invoices. Late reports can also result in a sponsor refusing to accept proposals from the principal investigator with a late report. The department indicated that it currently performs a regular review of the status of final technical reports as a part of its award close-out procedures, utilizing technical report due date information contained in the ORBiT system. In those cases in which a report is overdue, departmental administrative staff contact the principal investigator to inform him or her of the late status of the report and that they should contact the Office of Research if the report is not ready for immediate submission.

To strengthen internal controls over submitting final technical reports, principal investigators should consider tracking due dates for their final technical reports within GUS to make sure reports are submitted in a timely manner. In addition, the department could determine if a field can be added to GUS so the principal investigator can indicate when the final technical report was submitted to the sponsor. A report could then be printed from GUS that would indicate past due final technical reports, and departmental administrative staff could follow-up with the principal investigators to make sure the reports are submitted. For reports not submitted within a certain time period, the Chair could be notified so he/she could talk directly with the principal investigator of the award.

#### Management Corrective Actions

*Late Technical Reports:* As part of the award closeout procedure, the Contracts/Grants Analysts perform an extensive review of award documents. Included in this review is confirming if a final technical report will be required, and if so, sending a reminder to the PI. Once the PI has submitted the final technical report, the Contracts/Grants Analysts will document the submission date and notify the Office of Research. Additionally, the Contracts/Grants Analysts will use information from ORBiT to track any late technical



reports, and send follow-up reminders to the PIs who are late in submitting their reports. As an added measure, the Contract/Grants Analysts will begin tracking all late final technical reports on a summary that will be provided to the department Chair on a monthly basis. The monthly summary of late technical reports will be implemented by January 31, 2011.