SAN DIEGO: AUDIT & MANAGEMENT ADVISORY SERVICES
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March 13, 2018

MICHAEL NORMAN
Director, San Diego Supercomputer Center
0505

Subject: ***San Diego Supercomputer Center***
Report 2018-08

The final report for San Diego Supercomputer Center, Project 2018-08, 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
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Attachment

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AUDIT & MANAGEMENT ADVISORY SERVICES

San Diego Supercomputer Center
Report No. 2018-08
February 2018

FINAL REPORT

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I. EXECUTIVE SUMMARY

Audit & Management Advisory Services (AMAS) has completed a review of the San Diego Supercomputer Center (SDSC) as part of the approved audit plan for Fiscal Year 2017-18. The objective of our audit was to review SDSC business practices and internal controls to evaluate whether they provided reasonable assurance that operations were effective, and compliant with University and campus policies and procedures, and resulted in accurate financial reporting.

We concluded that SDSC business practices and internal controls provided reasonable assurance that operations were effective, complied with University and campus policies and procedures, and resulted in accurate financial reporting.

The SDSC Division had developed strong fund monitoring practices and established regular communication with the Chief Financial Manager to ensure that deficit balances were regularly monitored and managed. The Division had also developed regular fund reporting mechanism for Principal Investigators to allow for monitoring of expenditures in line with fund restrictions and budgets.

However, we identified opportunities for improvement in the areas of: service agreement management, recharge activity, and financial management. Management Action Plans to address these areas are listed below.

A. Service Agreement Management

The Division has:

1. Corrected the differential income allocation for service agreements for FY2018 revenue and will ensure future revenue is appropriately allocated.
2. Corrected identified errors on expenditure posting for the one intercampus agreement.

The Division will:

3. Develop standardized templates with data security and privacy terms to be utilized for all recharge units and other agreements as applicable.
4. Obtain approval from campus counsel on the standardized agreement templates (or terms of service) for Sherlock, recharge units, and other services. Service agreements with modifications to the standard template will also be reviewed by campus counsel.
5. Ensure service agreements are executed prior to provision of services and all executed agreements are securely stored. Consideration will be given for developing a Service Level Agreement (SLA) for all internal customers for future services, and a database for central tracking.
6. Consider modifying invoicing and payment language for future Sherlock intercampus agreements to clarify the intent of the agreement, in consultation with OCGA.

B. Recharge Activity

The Division has:

1. Notified the Recharge Rate Review Committee (RRRC) of the delay in implementation of revised rates with an explanation of the reasoning behind the delay. Rate revisions for Storage and HPWren are under internal department review and will be submitted to the RRRC once internally approved.
2. Inactivated the Chronopolis Preserve recharge unit with RRRC.

The Division will:

3. Continuously monitor all recharge units to determine whether the recharge rates should be adjusted to manage any surplus or deficit.
4. Publish all approved recharge rates accurately in accordance with UC policy and ensure that outdated rate references are removed.

C. Financial Management

The Division has:

1. Cancelled the Express Card for the SDSC Director.
2. Updated approval templates to ensure approval authority is either at a peer level, or at the supervisory level (or higher) than the person claiming the expenditure, and removed all separated employees.
3. Reviewed the index portfolio for service agreements, ITSS and Colocation recharge units, and closed all inactive indexes.
4. Ensured that all sampled transaction were appropriately reviewed and documented.

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 the San Diego Supercomputer Center (SDSC) as part of the approved audit plan for Fiscal Year 2017-18. This report summarizes the results of our review.

Founded in 1985, SDSC is an organized research unit (ORU) of the University of California, San Diego. SDSC is considered a leader in advanced computation and all aspects of "Big Data", which includes data integration and storage, performance modeling, data mining and predictive analytics, software development, and more. SDSC provides resources, services, and expertise to the national research community including academia, industry, and government.

With its two newest supercomputers, a data-intensive system called Gordon and Comet, a petascale system entering production in 2015, SDSC is a partner in XSEDE (eXtreme Science and Engineering Discovery Environment), a National Science Foundation (NSF) program that comprises the most advanced collection of integrated digital resources and services in the world. SDSC has also pioneered advances in data storage and cloud computing, and now houses several "centers of excellence[1]" in the areas of large-scale data management, predictive analytics, health IT services, workflow automation, and Internet analysis.

The SDSC Business Services Division (Division) oversees the administrative functions for the center, as well as provides specialized pooled technical services. The Division manages all of SDSC fiscal resources including over 100 different fund sources, preparation and submission of proposals, management of human resources, management of space and facilities, and the administration of its nine self-supporting activities including Colocation, cloud storage, IT Desktop and Systems (ITSS) and Web/database operations. The Division also provides technical services through its Web Application, Database and Documentation Development group which offers programming, database administration and documentation services both to SDSC Divisions and to individual PI's and awards.

SDSC centers of excellence are part of a larger strategic focus to help researchers across all domains. Sherlock under the Health Cyberinfrastructure Division (HCI) provides IT and data services in healthcare for the government and academia. Formed in 2013, Sherlock services include analytics, case management, cloud services and a data lab. These services are advertised to provide compliance with Health Insurance Portability and Accountability Act (HIPAA) and Federal Information Security Management Act (FISMA) regulations for dealing with sensitive data. SDSC uses service agreements as the mechanism to document and provide pricing for Sherlock services. Each agreement is tailored to the customer's unique requirements and pricing is based on a variety of factors including the overall scope of the project, number and size of systems managed, complexity of the customer application stack, security requirements, number of users supported, and project management requirements. The HCI Director prepares a detailed budget for internal UCSD customers when activities are directly charged to research awards.

[1] The centers of excellence include Center for Applied Internet Data Analysis (CAIDA), Center for Large-scale Data Systems Research (CLDS); Sherlock; and Workflows for Data Science Center (WorDS).

SDSC's growth potential has historically been of interest to campus leadership. In March 2008 a workgroup was convened to review SDSC's role through development and evaluation of a set of scenarios that would serve as a blueprint for the future of SDSC. One of the recommendations was for SDSC to have a focused mission and integration with other campus technology units such as UCSD Administrative Computing and Telecommunications (currently Information Technology Services (ITS)), California Institute for Telecommunications and information Technology, and University Libraries. Years later, a strategic plan for 2016-2020 was developed that identified key growth areas for SDSC including versatile computing, big data platforms/applications and life science computing. This was reviewed by a SDSC Sustainability Committee, established in March 2017, to evaluate and make recommendations regarding the sustainability of SDSC in the future. Some high level strategies were recommended including bids for National Science Foundation (NSF) leadership award, growth in internal and industry collaborations and a blended SDSC and ITS service model to achieve synergies. In support of this initiative, SDSC was requested to prepare Profit and Loss statements for its operating activities with projections until FY2019-2020. The statements are under review by the Vice Chancellor-Chief Financial Officer (VC-CFO) and utilized during strategic conversations regarding SDSC operations and future organizational structure.

III. AUDIT OBJECTIVE, SCOPE, AND PROCEDURES

The objective of our audit was to review SDSC business practices and internal controls to evaluate whether they provided reasonable assurance that operations were effective, and compliant with University and campus policies and procedures, and resulted in accurate financial reporting. In order to achieve our objective, we performed the following:

- Reviewed applicable University policies and procedures;
- Evaluated Department business documentation and information including the department website, organizational structure, financial reports and prior audit reports;
- Performed a high-level review of SDSC pro forma financial statements and Sustainability Reports;
- Interviewed Department Business Officers including the Chief Administrative Officer, Chief Financial Manager, Human Resources Manager, Fund Managers, and supporting personnel on key business processes and transactions;
- Consulted with and obtained information from Office of Contracts and Grants Administration (OCGA), Disbursements, Travel, Express Card Administration, and Equipment Management;
- Reviewed and evaluated a sample of transactions for compliance with University policy in the following areas:
    - Payroll and timekeeping,
    - Pre and post-award contract and grants,
    - Non-payroll transactions including travel, entertainment and express card transactions,
    - Cost transfers (payroll and non-payroll);
- Evaluated the status of effort certifications recorded using the Electronic Certification of Effort Reporting Tool (ECERT);
- Reviewed and evaluated the following:
    - Approval hierarchies and Marketplace Business Unit Management Tool,

- Service agreement contracting, financial management and associated billing activity, including Sherlock Agreements under HCI,
- Equipment management practices, and
- Self-Supporting activity fund balances and financial management including detailed review of Colocation and ITSS recharge units;

- Inquired into awards relating to export control restrictions and reviewed restricted party screening usage reports for indication of review by SDSC staff.

IV. CONCLUSION

Based on our review, we concluded that SDSC business practices and internal controls provided reasonable assurance that operations were effective, complied with University and campus policies and procedures, and resulted in accurate financial reporting.

The SDSC Division had developed strong fund monitoring practices and established regular communication with the Chief Financial Manager to ensure that deficit balances were regularly monitored and managed. The Division had also developed regular fund reporting mechanism for Principal Investigators to allow for monitoring of expenditures in line with fund restrictions and budgets.

However, we identified opportunities for improvement in the areas of: service agreement management, recharge activity, and financial management. Details are discussed further in the balance of this report. A summary of our audit observations by business process is provided in ***Attachment A***.

V. OBSERVATIONS REQUIRING MANAGEMENT ACTION

A.	**Service Agreement Management**
Service agreement management required improvement to ensure that: contract language was consistent, included the required data security and privacy protections, and was properly vetted; differential income was appropriately calculated; services were provided with an executed contract; and expenditures were accurately posted.	
Risk Statement/Effect	
The absence of strong controls for service agreements may expose the department to financial and litigation risks.	
Management Action Plans	
The Division has:	
A.1	Corrected the differential income allocation for service agreements for FY2018 revenue and will

	ensure future revenue is appropriately allocated.
A.2	Corrected identified errors on expenditure posting for the one intercampus agreement.
The Division will:	
A.3	Develop standardized templates with data security and privacy terms to be utilized for all recharge units and other agreements as applicable.
A.4	Obtain approval from campus counsel on the standard agreement template (or terms of service) for Sherlock, recharge units, and other services. Service agreements with modifications to the standard template will also be reviewed by campus counsel.
A.5	Ensure service agreements are executed prior to provision of services and all executed agreements are securely stored. Consideration will be given for developing an SLA for all internal customers for future services, and a database for central tracking.
A.6	Consider modifying invoicing and payment language for future Sherlock intercampus agreements to clarify the intent of the agreement, in consultation with OCGA.

A. Service Agreements Management – Detailed Discussion

A service agreement, or service level agreement (SLA), is a contract between a service provider and the end user that defines the level of service expected from the service provider. The agreement aims to establish a mutual understanding of services and creates a binding document upon execution. During our review, we noted inconsistencies with service agreement language with regards to data security and privacy protections for external SDSC customers. We also noted deficiencies in the calculation of differential income, expenditure and invoicing practices, and providing services without an executed agreement.

Contract Language

We noted inconsistencies in how service agreements were developed and managed, and that contract language was not reviewed by Campus Counsel.

Review of the SDSC service agreement log (as of August 2017) identified 36 active service agreements (24 for recharge units, 2 for Sherlock, and 10 other IT related services). We obtained a sample of 17 service agreements (one for each recharge unit, all active Sherlock agreements as of October 2017 and one other), and evaluated the language for appropriate protection of data security and privacy. We noted that, although terms were generally referenced in the agreements when applicable, there was inconsistency in the language utilized across service agreements in the different areas. Given the potential volume and sensitivity of information being shared, stored or used, it is critical that language referencing the protection (security), management (privacy) and each party's role under the agreement is clarified and consistently applied across all agreements. A standard template could be developed on the data privacy and security terms that is utilized across all service agreements. Although a Terms of Service template had been created for the ITSS, Storage and Colocation recharge units, a consistent template was not in place for the other areas.

Currently, service agreements are approved by OCGA but the scope of work and data privacy/security terms are not reviewed by Campus Counsel. Given the associated risks/liabilities assumed under SDSC agreements (including Sherlock for HIPAA and FISMA compliance), there should be additional legal review from Campus Counsel for the template that is used. Any potential ambiguity in data privacy and security responsibilities, and risks may lead to legal ramifications for data breaches and privacy missteps, and tarnish UCSD and the department's brand and reputation. Similarly, review of a standard template for other service agreements, specifically in relation to terms related to data privacy and risks, by Campus Counsel would enhance the assurance that campus risks are being appropriately managed.

Differential Income

The overhead cost recovery rate, also referred to as differential income, is the rate applied to all sales to non-UC users of activities in order to recover the indirect costs related to the activity. The full differential income rate for on-campus activity is 45% or a minimum of 16% to be distributed to central administration (16%) and department support (29% for full rate and 0% if minimum rate is used). When a lower than full differential rate is applied to service agreements, the calculation of the campus portion of the income is calculated as (Total Revenue/1.XX) x 16% (where XX is the actual rate charged). However, we noted that the department had utilized a different formula (Total Revenue/1.45)*16% for calculating campus allocation in such cases which resulted in a lower allocation to central administration. We noted three service agreements (CACUIUC, CACCNDE and CACLM1) for which the campus allocation had not been accurately calculated for differential income and resulted in a $37K lower allocation for revenue recorded for FY2017 and FY2018 (till September 2017), as detailed in the table below:

Service Agreement Index	**CACUIUC**	**CACCNDE**	**CACCLM1**
Total revenue posted to index (FY17 and FY18 till September 2017)	$95,251	$1,958,260	$326,441
Differential Income Rate	30%	28%	20%
Campus allocation of differential income	$11,723	$244,783	$43,525
Department Calculation of Campus Allocation	$10,511	$216,084	$36,021
Difference	*$1,212*	*$28,699*	*$7,504*
Total	**$37,415**		

Based on the service agreement log as of August 2017, there were a total of 10 agreements (including the three above) that had differential income below the 45% full rate.

We also noted one external service agreement for which the differential income was inaccurately calculated using a 45% differential rate even though the actual rate varied for each line item of services provided under the agreement. The differential income allocation for revenue received under this agreement needs to be recalculated to reflect actual rates charged.

The correct allocation for differential income should be posted to the differential income fund as the current mechanism used by the department resulted in a higher proportion of differential income funds to the department reserve and a lower allocation to campus.

Executed Agreements

During our review of a sample of service agreements, we noted that a signed agreement was not always in place prior to the provision of services. We identified two external customers for Colocation and one for ITSS that had received services even though a signed agreement was not in place at the time services were provided. One of these agreements was executed in July 2017 but Colocation services were initiated in January 2017. The other two agreements were still undergoing negotiations. The department stated that these agreements were with existing customers or renewals, and it was generally their practice to continue to provide services, which represented relatively lower dollar amounts. Similarly, we noted that an active SLA had not been executed for two intercampus agreements but services continued to be provided. In addition, we noted one agreement for Colocation with one UC customer could not be located. As a result, the absence of an executed agreement at the time of service exposes the department, and the University, to financial risks and potential liabilities.

SDSC had also adopted SLAs with internal UCSD customers for their recharge units, with the exception of the High Performance Wireless Research and Education Network (HPWREN) recharge that had only one internal customer, financed through federal flow through funding. The customer received network application services, including first priority on all network traffic and highest priorities for technical support and response to outages. Having an SLA in place to define each party's role and clarifying the level of services provided is generally a good business practice to avoid confusion regarding each party's responsibility.

Expenditures

We evaluated expenditures and invoicing for a sample of four intercampus and five external service agreements within the Colocation and ITSS recharge units, to verify that invoicing was consistent with the service agreement terms. Our analysis identified errors in posting of expenditures for one Colocation intercampus agreement that was erroneously charged $72,592 in expenditures for another customer's service agreement index and needed to be transferred to the correct index.

Errors for captured charges on service agreement indexes could lead to a deficit balance if not corrected timely.

Sherlock Intercampus Agreement Language

Language in the Invoicing and Payment section of Sherlock intercampus agreements could be improved. The department indicated that these agreements were intended to be fixed price agreements which justified charging of general expenditures for HCI operations that were not specific to each project. However, this appeared to be in conflict with the language in the service level agreements which stated, "SDSC will bill this funding for costs related to the project. Any unspent funds will remain in the account year to year and either offset future year costs or be available for additional services, as agreed." This language suggests that residual funds would be utilized towards future project-related costs, requiring the need to clarify this language for intercampus agreements in the future to maintain the fixed price agreement objective.

Clarity in service agreement terms is critical to avoid contract financial risks (e.g. non-payment/delayed payments).

B.	**Recharge Activity**
Recharge activity practices required improvement to ensure that balances were continually monitored to maintain break-even status and that approved rates were appropriately published, as required by policy.	
Risk Statement/Effect	
Ineffective monitoring of recharge balances may result in surpluses, which may be interpreted as overcharging customers, including federal/federal-flow through customers. In addition, the absence of published rates increases the risk of inappropriate invoicing, including federal/federal flow through contracts.	
Management Action Plans	
The Division has:	
B.1	Notified the Recharge Rate Review Committee (RRRC) of the delay in implementation of revised rates with an explanation of the reasoning behind the delay. Rate revisions for Storage and HPWren are under internal department review and will be submitted to the RRRC once internally approved.
B.2	Inactivated the Chronopolis Preserve recharge unit with RRRC.
The Division will:	
B.3	Continuously monitor all recharge units to determine whether the recharge rates should be adjusted to manage any surplus or deficit.
B.4	Publish all approved recharge rates accurately in accordance with UC policy and ensure that outdated rate references are removed.

B. Recharge Activity

Recharge Balances

Recharge operations should seek to break-even and operate on no-gain/no-loss basis. University policy (*Business and Finance Bulletin (BFB) A-47, Direct Costing Procedures*) states: "Recharges shall be related to the cost of goods or services furnished and must provide for the recovery of actual costs, including applicable depreciation. Prices shall be adjusted at least annually to eliminate any surpluses or deficits. Every effort should be made to ensure that year-end surpluses do not exceed one month of the recharging unit's activity. Local campus recharge review committees may approve surpluses greater than one month of the recharging unit's activity when appropriate to address specific operating cash requirements." The UCSD RRRC has agreed to accept two months of recharge unit's activity for surplus balances.

We performed an analysis of recharge balances over the last five fiscal years (FY13-FY17) to determine whether trends indicated the need for revision of recharge rates for the unit. Of the nine recharge units analyzed, three of the units' balances suggested the need for consideration of revised rates or notification to the RRRC. All three recharge proposals indicated a percentage of federal customer base in their recharge proposal:

- Storage - The unit has experienced large increases in excess surpluses (surpluses over two months of recharge activity) over the last three years with an excess surplus balance of $282K as of June 30, 2017. The most recent recharge proposal, effective July 1, 2017, did not include changes to the recharge rates and estimated $222K in payroll costs for two Recharge Manager positions that are currently vacant. The Chief Financial Manager indicated that they have been recruiting for these positions for over a year and recruitment is still underway. However, these costs continue to be captured in the recharge proposal and should be monitored to avoid surpluses from growing and potentially overcharging federal customers.

- HPWREN – The last rate review was effective July 1, 2016, however rates were not increased at that time. We noted that the recharge unit's deficit balance had grown and a review of total expenses and recharge income has shown an increase in average expenses and decrease in average recharge income over the last two fiscal years. As a result, a revision in rates may be appropriate to address the deficit.

- High End Computing (HEC) - The recharge unit has seen a gradual increase in excess surpluses over the last four fiscal years but rates were still increased in the latest recharge proposal effective July 1, 2017. However, the department had decided not to implement the new rates since the unit had a surplus and one of the projected positions was partially vacant. We noted that the RRRC had not been informed of the department's decision to continue to use previously approved recharge rates for this unit. The RRRC is advisory to the Controller and reviews and recommends approval or disapproval of new or revised recharge rates and should be informed of any changes to recharge rates implemented.

The inability to break-even on recharge operations may result in increased surplus or deficit balances for future recharge activities. A routine process for monitoring actual costs in the recharge proposal and revising recharge rates to account for changes in operating costs is necessary to ensure full cost recovery and avoid over charging customers, including federal/federal flow through funds.

Recharge Rates

During our review, we identified recharges rates that were not properly published on some SDSC websites. University policy requires that approved scheduled rates and prices for recharge activities be published for customer's to review. The publication of recharge rates helps ensure that only approved recharge rates are used for invoicing.

Approved recharge rates were published on both the SDSC main websites and the Financial Analysis Office (FAO) maintained Blink website for recharge rates. We compared published rates to approved rates, and identified that rates had not been published for the San Diego Network Access Point (SD-NAP), ITSS and Storage recharge units. In addition, the FAO maintained Blink website had also posted rates for another recharge unit, SDSC Chronopolis Preserve that was still in active status but no longer in operation and needed to be inactivated by the department with RRRC. Lastly, we came across one SDSC website with recharge rates posted for Sharepoint Solutions that was outdated and needed to be removed.

The absence of published rates increases the risk of inaccurate invoicing, including federal/federal flow-through customers.

C.	Financial Management
Financial management activities could be improved to ensure stronger controls over departmental funds.	
Risk Statement/Effect	
The absence of appropriate controls for financial activity increases the risk of inappropriate use of department funds and/or the lack of supporting documentation for expenditures.	
Management Action Plans	
The Division has:	
C.1	Cancelled the Express Card for the SDSC Director.
C.2	Updated approval templates to ensure approval authority is either at a peer level, or at the supervisory level (or higher) than the person claiming the expenditure, and has removed all separated employees.
C.3	Reviewed the index portfolio for service agreements, ITSS and Colocation recharge units, and closed all inactive indexes.
C.4	Ensured that all sampled transactions were appropriately reviewed and documented.

C. Financial Management – Detailed Discussion

Approval Hierarchies

We noted that expense approval hierarchies allowed the approval of transactions by subordinate employees. University policy provides that payments for expenses should be reviewed and approved by an individual who does not report directly or indirectly to the person incurring (claiming) the expenditure (UC Policies *BFB G-28, Travel Regulations; BFB BUS-43, Material Management; BFB BUS-79, Expenditures for Entertainment, Business Meetings*, *and Other Occasions and; Accounting Manual*

D224-17, Delegation of Authority – Signature Authority).

We reviewed the department's expense approval hierarchies to determine whether the hierarchies had been assigned in accordance with University policy. We also reviewed approvals as part of detailed testing of selected expenditures and analyzed transaction reviewers for express card holders for compliance with UC policy. The following observations were made based on our review:

- Subordinate positions were assigned approver status for transactions initiated by the Chief Administrative Officer, Chief Financial Officer and Sponsored Projects Supervisor.
- Approval hierarchies included templates for two separated employees that should be removed.
- Two marketplace purchase order requisitions were approved by someone in a subordinate role to the requisitioner.
- The SDSC Director had an Express Card with a transaction reviewer who was subordinate to the cardholder.

The establishment of appropriate approval hierarchies helps ensure segregation of responsibilities within the procurement processes, and increases assurance that purchase transactions are bona fide University expenses that comply with University policy.

Inactivation of Indexes

We identified several indexes under the service agreement fund, ITSS and Colocation recharge units that needed to be inactivated. Our analysis of active indexes on the SDSC service agreement index (60747A) identified nine indexes that had a zero balance for agreements that had expired. In addition, the ITSS and Colocation recharge units had legacy indexes with no current activity. Sixteen (62%) of the 26 active indexes for ITSS and, 21 (43%) of the 49 active indexes under Colocation either had little to no activity or represented legacy indexes that required reconciliation and closure. The Fund Manager for the recharge units had taken over the management of these units in the last few months and was working to reconcile the recharge activity.

Timely index inactivation procedures are indicative of good business practices and demonstrates stronger management of department funds.

Transactional Sampling

The Department had not completed a review of all sampled transactions as part of their recurring reconciliation activities.

On a monthly basis, departments are required to validate transactions posted to the operating ledger to ensure expenditures, liens, and revenues are correct, accurate and reasonable. The transaction sampling process includes verifying amounts to supporting documentation, resolving exceptions, and ensuring that corrective actions are taken in a timely manner. Departments should complete the transaction sampling process on a monthly basis, prior to the closing of the following month's ledger.

We reviewed transaction sampling reports for activity that occurred from July 1, 2016 through May 31,

2017. As of August 2017, we noted that 17% of sampled transactions had not been reviewed for this time period. In order for the transaction sampling process to be regarded as a valid method of ledger review, all sampled transactions should be reviewed on a monthly basis. Failure to review the full sample of transactions increases the risk of not detecting erroneous or inappropriate transactions in a timely manner.

San Diego Super Computer (SDSC)
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2018-08

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)			
Service Agreements	√	√	√	Reviewed expenditures and invoicing to ensure consistency with service agreements and service level agreements (SLA) terms. Reviewed data and privacy terms for 17 service agreements. Obtained an understanding of the approval process for service agreements.	No	Improvement Needed	Service agreement management required improvement to ensure that contract language was consistent, inclusive of required data security and privacy protections, and properly vetted; differential income was appropriately calculated; services were provided with an executed contract; and expenditures were accurately posted. ***Refer to Report Finding A.***
Recharge	√	√	√	Analyzed five-year recharge balances and excess surpluses/deficits.	No	Improvement Needed	Recharge activity required improvement to ensure that balances were continually monitored to maintain break-even status and that approved

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

San Diego Super Computer (SDSC)
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2018-08

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)			
				Verified published rates for recharge units. Verified recharges to internal customers were consistent with recharge rates. For Colocation and ITSS recharges, reviewed expenditures for reasonableness.			rates were appropriately published, as required by policy. ***Refer to Report Finding B.*** We identified several indexes under the service agreement fund, ITSS and Colocation recharge units that needed to be inactivated. ***Refer to Report Finding C.***
Transaction Processing - Non-Payroll Expenditures	√	√	√	Analyzed Transaction Sampling Management Report for FY2017 (July 2016 to May 2017) Reviewed a judgmental sample of transactions, traced to supporting documentation and	No	Improvement Needed	Approval hierarchies allowed for approval from subordinate employees. ***Refer to Report Finding C.*** The Department had not completed a review of all sampled transactions as part of their recurring reconciliation activities. ***Refer to Report Finding C.***

San Diego Super Computer (SDSC)
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2018-08

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)			
				analyzed approval practices.			
Express Cards	√	√	√	Reviewed SDSC Express Cardholder report for appropriateness of transaction approvers. Analyzed a sample of 44 express card purchases and traced to supporting documents.	No	Satisfactory	We identified one restricted Express Card purchase for a gift and the department was informed to avoid such purchases in future.
Effort Reporting	√	√	√	Reviewed effort certification reports for four periods for FY15 Jan-June, FY16 July-Dec, FY16 Jan-June, and FY17 July-Dec. Verified the 97% effort reporting compliance rule for a	Yes	Satisfactory	Less than 1% of effort reports for the four periods were overdue as of August 14, 2017. In addition, we noted that 13% of certified reports were certified after the deadline of 120 days. The Department was informed of the discrepancies and agreed to take action to correct them.

San Diego Super Computer (SDSC)
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2018-08

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)			
				sample of principal investigators.			
Operating Ledger Review & Financial Reporting	√	√	√	Ran an overdraft balances report as of July 2017 and discussed overdrafts with the Division.	Yes	Satisfactory	Three funds were in overdraft totaling $23,768 for SDSC Center for Large-Scale Data Systems Research as of July 2017. The department has strong monthly monitoring process in place to address deficits timely and plans to utilize core funds to cover the deficits if not reconciled by calendar year end. One recharge unit, Triton Shared Computing Cluster (TSCC), was in deficit but a deficit management plan is in place after consultation with the VC-CFO and Controller.

San Diego Super Computer (SDSC)
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2018-08

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)			
Travel and Entertainment	√	√	√	Selected 11 trips totaling $45K and 11 entertainment transactions totaling $17K, traced to supporting documentation and analyzed approval practices.	Yes	Satisfactory	Two travel events had computational errors that resulted in a total overpayment to the traveler for $715. These were considered isolated events and the department was informed and agreed to request reimbursement from the travelers.
Timekeeping & Payroll	√	√	√	Reviewed timesheets, MyTime reports and performance evaluations. Reviewed compliance with certification of SAS 112/115.	Yes	Satisfactory	Timesheet submission compliance was monitored by HR staff. Performance evaluations were conducted timely. DOPE reviews were performed as part of monthly financial reporting process and documented electronically through SAS 112/115.

San Diego Super Computer (SDSC)
Audit Results by Business Office Functional Process
Audit & Management Advisory Services Project #2018-08

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)			
Contract & Grant Activity (Post Award Admin.)	√	√	√	Selected seven NSF awards totaling $31.1M and evaluated expenditures on award for reasonableness and key personnel effort for any significant changes that need to be reported to the agency.	Yes	Satisfactory	Charges were reasonable, appropriate and appeared to be consistent with the award proposal.
Payroll Expenditure Transfers	√	√	√	Verified appropriateness for 10 EPETs per operating ledgers and business justifications.	Yes	Satisfactory	Controls over expense transfers appeared satisfactory.
Non-Payroll Expenditure Transfers	√	√	√	Reviewed timeliness, and business justifications for reasonableness.	Yes	Satisfactory	Controls over expense transfers appeared satisfactory.

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Audit Results by Business Office Functional Process
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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)			
Equipment Management	√	√	√	Reviewed Capital Asset Management System (CAMS) inventory listing and physically verified a sample of equipment purchases from FY2017.	Yes	Satisfactory	Equipment inventory was performed two years ago and another one is underway in compliance with university policies.
Information Systems Environment				Information systems environment was excluded from the scope of this review as a separate information systems review was being performed by UC.	N/A	N/A	