NATIONAL SCIENCE FOUNDATION
4201 Wilson Boulevard
ARLINGTON, VIRGINIA 22230

**OFFICE OF
INSPECTOR GENERAL**

Memorandum

Date: February 21, 2008

To: Thomas N. Cooley
                Chief Financial Officer and Director
                Office of Budget, Finance, and Award Management (BFA)

                Richard A. Behnke
                Division Director (Acting)
                Division of Atmospheric Sciences (GEO/ATM)

From: Deborah H. Cureton
                Associate Inspector General of Audit

Subject: OIG Report Number 08-1-003
                Audit of the University Corporation for Atmospheric Research's Purchase
                Card and Timekeeping Systems

        Attached is the final report on the audit of the purchase card and timekeeping
systems of the University Corporation for Atmospheric Research (UCAR). We have
summarized UCAR's comments after the recommendations for each audit finding and
provided our response to these comments. The full text of UCAR's comments is
included as the Appendix.

        The audit found that while the internal control structure for UCAR's purchase
card program contained basic characteristics of an effective internal control system, they
were not always implemented or effective in preventing or detecting fraud. In addition,
the audit found that UCAR was not accurately recording or supporting labor charges.
Furthermore, UCAR did not have detailed written justification to support over 80 percent
of the sampled labor costs UCAR transferred between awards. Without appropriate
controls to ensure that goods and services are for authorized business purposes and labor
efforts are accurately allocated, NSF has less assurance that purchase and salary charges
reflect actual expenses incurred.

        We consider the UCAR internal control procedural weaknesses identified in the
audit findings to be significant. Accordingly, we request that your office work with
UCAR to develop a written Corrective Action Plan detailing specific actions taken and/or

planned to address each audit recommendation. Milestone dates should be provided for corrective actions not yet completed.

To help ensure the recommendations are resolved within six months of issuance of the audit report pursuant to Office of Management and Budget Circular A-50, please coordinate the development of the Corrective Action Plan with our office during the resolution period. Each audit recommendation should not be closed until NSF determines that UCAR has adequately addressed the recommendation and proposed corrective actions have been satisfactorily implemented.

We appreciate the cooperation that was extended to us during our review. If you have any questions, please feel free to call James Noeth at 703-292-5005 or Kenneth Stagner at 303-312-7655.

Enclosure

cc: Clifford A. Jacobs, Section Head, UCAR and Lower Atmospheric Facilities
         Oversight Section, (GEO/ATM)
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Audit of University Corporation for Atmospheric Research Purchase Card and Timekeeping Systems

National Science Foundation
Office of Inspector General

Date

February 21, 2008

OIG 08-1-003

REPORT RELEASE RESTRICTION

Executive Summary

The University Corporation for Atmospheric Research (UCAR) is a consortium of over 100 university members and affiliates that receives over 90 percent of its funding from NSF and other federal agencies. In July 2004, UCAR discovered the fraudulent use of one of its purchase cards, and referred the matter to the NSF Office of Inspector General's (OIG's) Office of Investigations. With UCAR's assistance and cooperation, the OIG completed its investigation of the purchase card fraud and concluded that a former UCAR employee violated criminal statutes. The OIG investigators referred the matter to the U.S. Attorney's Office for the District of Colorado, and on June 7, 2007 the former employee was sentenced to 16 months incarceration and ordered to make restitution in the amount of $18,214. Concerned that serious internal control deficiencies may exist in UCAR's purchase card program, OIG investigators referred the matter to the OIG Office of Audit.

The OIG, therefore, conducted an audit to evaluate whether UCAR internal controls are adequate to properly manage, account for, and monitor purchases made with its purchase cards. In addition, because a 2003 OIG survey of UCAR identified concerns with UCAR's internal controls over time and effort reporting and cost transfers between awards, we added an audit objective to also evaluate whether UCAR salaries and wages were properly and accurately charged to federal awards.

The audit found that while the internal control structure for UCAR's purchase card program contained basic characteristics of an effective internal control system, they were not always implemented or effective in preventing or detecting fraud. Although UCAR has revised its purchase card policy and addressed many of the significant deficiencies that existed at the time of the fraud, further improvements are needed to ensure that the $5 million of goods and services purchased annually with UCAR purchase cards are for authorized business purposes.

Furthermore at the time the fraud occurred, UCAR had not filled the internal audit position, which was vacant for a five year period. If, during this gap, an internal auditor had been in place, weaknesses in the purchase card program may have been more timely identified and corrected, and possibly have prevented the fraud. An internal auditor was hired in 2006 and conducted an audit of the purchase card program, finding many of the same problems cited in this audit. However, the auditor only issued a draft audit report on the purchase card program before leaving UCAR in February 2007, after slightly more than one year of employment. The internal auditor position remained vacant through the end of our audit field work in July 2007, and the auditor's report on the purchase card program had not been finalized. UCAR's size, volume of federal awards, and administrative and business environment complexity warrant having an internal auditor. Having the internal auditor position filled on a permanent basis is an important preventative control that could help UCAR avoid the potential cost and embarrassment of future fraud.

In addition, the audit found that UCAR was not accurately recording or supporting labor charges. Specifically, we found employees were not recording all of their hours worked, charged budgeted rather than actual hours worked, earned and used unrecorded compensatory time even though UCAR does not officially allow compensatory time, and inaccurately recorded their time

as worked when they were on leave. Furthermore, UCAR did not have detailed written justification to support over 80 percent of the sampled labor costs UCAR transferred between awards. Without a reliable basis of support, UCAR's $58 million of labor costs charged to NSF and other federal agencies are at risk of not being accurately allocated. UCAR needs to develop a timekeeping system to accommodate salaried employees that work more than 80 hours in a pay period, provide its employees specific guidance on timecard completion, and provide more oversight of accounting for leave and transferring of labor costs.

UCAR agreed with most of the audit findings and recommendations but believes it would not be cost effective to conduct periodic inventories of items purchased under $5,000 that are vulnerable to theft. UCAR stated that it had implemented procedures to address many of the other weaknesses we identified in its purchase card program and is addressing issues with its timekeeping system.

While we understand UCAR's desire to be cost effective, we affirm our position that conducting inventories, even at a minimum level, is necessary to identify missing items that are vulnerable to theft. Furthermore, we are concerned that UCAR actions may not sufficiently address our recommendations regarding monitoring the use of purchase cards, separating the receiving function from the ordering function for items purchased, performing periodic risk assessments, conducting audits by the internal auditor on purchase card program, and developing a time keeping system that meets OMB requirements. We have summarized UCAR's comments and provided our response after the recommendations in the report. Also, UCAR's comments in its entirety are included in the appendix.

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ACRONYMS

COSO	Committee of Sponsoring Organizations
FY	Fiscal Year
NCAR	National Center for Atmospheric Research
NSF	National Science Foundation
OIG	Office of Inspector General
OMB Circular A-110	U.S. Office of Management and Budget Circular A-110
OMB Circular A-122	U.S. Office of Management and Budget Circular A-122
OMB Circular A-133	U.S. Office of Management and Budget Circular A-133
UCAR	University Corporation for Atmospheric Research
UOP	UCAR Office of Programs

BACKGROUND

The University Corporation for Atmospheric Research (UCAR), a nonprofit corporation located in Boulder, Colorado, is a consortium of over 100 university members and affiliates. It was founded in 1959 to enhance the computing and observational capabilities of universities and to focus on scientific problems that are beyond the scale of a single university. UCAR's mission also includes understanding the behavior of the atmosphere and the global environment and fostering the transfer of knowledge and technology for the betterment of life on earth. UCAR works with many national and international meteorological institutions through a variety of programs.

The two major research components of UCAR are the National Center for Atmospheric Research (NCAR) and the UCAR Office of Programs (UOP). NCAR is a Federally Funded Research and Development Center sponsored by the National Science Foundation (NSF). NSF and other federal agencies provide funding for NCAR, which has a large scientific staff dedicated to exploring and understanding the atmosphere and its interactions with the sun, the oceans, the biosphere, and human society. In addition to conducting research, NCAR provides members, affiliates, and others with tools such as aircraft and radar to observe the atmosphere and with the technology and assistance to interpret and use these observations, including supercomputer access, computer models, and user support. UOP consists of eight programs which create, conduct, and coordinate projects that strengthen education and research in the atmospheric, oceanic, and earth sciences.

As of October 2006, UCAR employed 1,417 employees: 883 under the NCAR program; 250 under UOP programs; and most of the remaining 284 employees in corporate and administrative offices. For FY 2006, UCAR expended $182 million, of which $168 million was federal funding. NSF is UCAR's primary sponsor, providing $105 million, or 63 percent of the federal funding in that year. Nine other federal agencies provided the remaining $63 million.[1] We have summarized UCAR's expenditures below.

Total Expenditures
For Fiscal Year Ending 09/30/2006

	NCAR	UOP	OTHER UCAR PROGRAMS	GRAND TOTAL
NSF Expenditures	$90,791,662	$14,447,295	$409,562	$105,648,519
Other Federal Agency Expenditures	37,623,940	24,982,788	281,385	62,888,113
Subtotal Federal Expenditures	$128,415,602	$39,430,083	$690,947	$168,536,632
Non-Federal Expenditures	10,226,082	2,700,862	969,629	13,896,573
Totals	$138,641,684	$42,130,945	$1,660,576	$182,433,205

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[1] The nine other federal agencies include: Department of Commerce, National Aeronautics and Space Administration, Department of Defense, Department of Energy, Department of Transportation, Department of State, Department of Agriculture, Department of Interior, and the Environmental Protection Agency.

Concern with Internal Controls over UCAR's Purchase Card Program

Rules and regulations governing federal funding require UCAR to establish and maintain effective internal controls that help detect and prevent illegalities related to its federally funded programs. In July 2004, UCAR discovered the fraudulent use of one of its purchase cards,[2] and referred the matter to the NSF Office of Inspector General's (OIG's) Office of Investigations.

With UCAR's assistance and cooperation, the OIG completed its investigation of the purchase card fraud and concluded that a former UCAR employee violated criminal statutes. The OIG investigators referred the matter to the United States Attorney's Office for the District of Colorado, and on June 7, 2007 the former employee was sentenced to 16 months incarceration and ordered to make restitution in the amount of $18,214. The perpetrator fraudulently purchased over 90 items, which included Apple® iPods®, numerous books, camping supplies, household items such as hand-painted bowls, a swimming pool cover, and a dog bed. Subsequently, many of the items were sold through eBay®. The fraud began on November 18, 2003, and continued approximately 8 months until finally detected on July 22, 2004. Purchases were made and entered in UCAR's accounting system with false descriptions and received by the perpetrator without any UCAR's staff involvement or knowledge. Concerned with the potential for serious internal control deficiencies, OIG investigators referred the matter to the OIG Office of Audit.

In FY 2006, UCAR's purchasing card program involved 150 cardholders and transactions totaling $5 million of goods and services. Cards are only allowed for authorized business purposes and personal use is prohibited. Most cardholders are authorized to spend up to $5,000 per transaction without prior approval and monthly spending limits range from $5,000 to $25,000 but are typically set at $10,000. The responsibility for ensuring cards are appropriately used extends beyond the cardholder to management, as immediate supervisors are required to review and approve card purchases of their subordinates on a monthly basis to authenticate the business purpose of the items acquired.

Interest in Internal Controls over UCAR's Salary and Wage Charges

Similar to funds spent on procurement, UCAR has the responsibility to establish and maintain effective internal controls to protect the integrity of its $58 million annual payroll, a majority of which is charged directly to federal awards. Since FY 2000, UCAR has used an electronic timecard to allocate staff costs to its federal and non-federal research projects. Employees access their timecards, which cover a two week period, using a log in identification and password. Salaried employees can only record 8 hours worked per day or 80 hours for each two week pay period. However, non-salaried (hourly) employees, with supervisory approval, can record more than 8 hours worked per day. Supervisory approval of timecards is required for hourly employees but optional for salaried employees. Because a significant amount of UCAR's payroll is allocated to over 400 federal awards and the OIG had not previously audited UCAR's timecard system, we included it in the scope of our review.

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[2] UCAR has several types of credit cards such as travel cards, which are used by staff for their official travel costs and paid by them through reimbursements, and purchase cards, which are paid by UCAR for acquiring goods and services.

OBJECTIVES, SCOPE AND METHODOLOGY

The objectives of our audit were to evaluate whether UCAR internal controls are adequate to properly manage, account for, and monitor purchases made with purchase cards, and whether salaries and wages were properly and accurately charged to federal awards in accordance with award requirements. Our review focused only on controls over UCAR's purchasing and payroll systems and did not address other UCAR grant management and accounting processes.

To achieve our objectives, we reviewed federal regulations along with UCAR's policies and procedures related to purchase card operations and labor effort accounting and reporting. We interviewed UCAR staff to gain an understanding of its processes to account for both purchase card acquisitions and labor effort activity, and to determine if the accounting processes were in compliance with UCAR and federal rules. We interviewed employees involved in the purchase card program to determine the extent and effectiveness of the implementation of UCAR's 2005 purchase card policy. We also interviewed UCAR Property Managers to determine the extent of UCAR's controls over the receipt and maintenance of property acquired using purchase cards. In addition, we reviewed and relied upon computer-processed data and information obtained from UCAR and NSF regarding purchase card and salary and wage transactions. The data included general ledger entries and computer generated worksheets. We evaluated the reliability of this data by comparing it to source documentation obtained as part of our review.

To gain an understanding of the internal controls for recording time and effort to support the allocation of salaries and wages to federal research awards, we selected and interviewed a sample of 20 employees. The sample represented employees that occupied a variety of positions and jobs, along with different pay rates, within the UCAR organization. Our sample contained 15 employees working mainly on NSF awards and five employees receiving funds both from NSF and other sources.

We also selected and reviewed 45 labor cost transfer entries from October 2004 through May 2007 to test for compliance with federal regulations and UCAR's policies and procedures. Our initial sample contained 30 cost transfer entries from NCAR. We selected an additional 15 from UOP including five that were recently completed. We determined the purpose of the labor cost transfer by interviewing division administrators and employees whose labor was transferred.

Our review period was from October 2004 through May 2007. We conducted our audit work from August 2006 through July 2007 at various UCAR offices in Boulder, Colorado. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Our audit included tests of accounting records and audit procedures we deemed necessary to address the audit objectives.

1. UCAR Needs to Improve Internal Controls over Purchase Cards

Federal regulations require entities receiving federal awards to establish and maintain effective internal controls that help ensure taxpayers' dollars are properly spent and to detect and prevent fraud, waste and abuse. This includes ensuring effective management and use of purchase cards. UCAR's internal controls over its purchase card program were not effective in preventing or detecting approximately $18,000 of fraudulent purchases in 2004. In response to the fraud, UCAR revised its purchase card policy in 2005 and again in 2007 to address many significant deficiencies. However, more improvements are needed to ensure the $5 million of goods and services purchased annually with UCAR purchase cards are for authorized business purposes.

Internal Controls Need Improvement to Safeguard Purchase Card Procurements

OMB Circular A-110, *Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-profit Organizations*, requires entities receiving federal awards to establish and maintain effective internal controls that help detect and prevent fraud, waste, and abuse in federal programs. Furthermore, OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*, includes guidance in its compliance supplement to assist non-profit entities, such as UCAR, establish and maintain an effective system of internal control. OMB guidance describes five characteristics of an effective internal control system that were initially developed and promulgated in 1992 by well known executive management groups and audit organizations. These entities, as part of a private sector organization, the Committee of Sponsoring Organizations (COSO), studied fraud in business accounting systems and made recommendations to reduce its occurrence. The COSO study took more than three years and included extensive research and discussions with corporate leaders and the academic community. While OMB does not mandate that non-profit grant recipients use COSO's integrated framework for internal controls, it is an industry standard used by public, private, and non-profit organizations as an effective model to help detect and prevent fraud. OMB describes the five elements of COSO's integrated framework for internal controls as follows:[3]

Control Activities: The policies and procedures that help ensure management's directives are carried out.

Information and Communication: The processes that identify, capture, and exchange information in a form and time frame that enable staff to carry out their responsibilities.

Monitoring: The processes that assess the quality of internal control performance over time.

Risk Assessment: The entity's identification and analysis of risks relevant to achievement of its objectives, forming a basis for determining how the risks should be managed.

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[3] OMB Circular A-133, Compliance Supplement, Part 6, "Internal Control" dated March 2007

Control Environment: The tone of an organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure.

Although UCAR's internal control structure for its purchase card program addressed all of the components of COSO's suggested framework, we found deficiencies in each area that contributed to the fraud not being detected. UCAR's policies and procedures established control activities for its purchase card program, but some of these controls were not implemented. Information was collected to assist management in detecting purchase illegalities, but some key information was not provided to the appropriate staff to carry out their responsibilities. Monitoring activities over purchases also needed improvement. UCAR conducted a risk assessment of the purchase card program at the time the fraud was discovered but should periodically conduct assessments for determining how new risks should be managed. Overall, improving all the control areas as suggested would set the proper tone in providing discipline and structure for the UCAR staff to detect and prevent fraud in the purchase card program.

The next section specifically identifies the deficiencies that UCAR needed to correct at the time the fraud occurred. Following it, we identify the corrections that UCAR has implemented and list outstanding corrective actions needed to strengthen the purchasing card program by implementing COSO's framework for an effective internal control system.

Control Activities

We noted deficiencies in three UCAR control activities that each contributed to the fraud not being detected in a timely manner. Internal control effectiveness was diminished as a collaborative result of control activities not being performed.

➤ *Supervisors Were not Required to Review Receipts*

A key control activity mandated by UCAR's policies and procedures at the time of the fraud in 2003 was that an approving official (AO), who may or may not be the employee's direct supervisor, review and approve each cardholder's purchases monthly. To help ensure the validity of purchases, cardholders were required to maintain receipts supporting each purchase. Receipts are source documentation that provide an independent description, amount, and cost of items purchased. Each month, cardholders were required to download an electronic list of their transactions and reconcile it with their records.

While AOs were required to approve these transactions each month, they were not specifically required to review the receipts as part of their process. Furthermore, in the specific instances involving the fraud, the responsible AO did not review, in a timely manner, the list of purchases and the receipts of the cardholder who made the fraudulent purchases. Rather, the AO requested all receipts for a seven-month period at one time. The cardholder used the time delay advantageously in claiming to have lost the supporting receipts. Had ■ requested and reviewed receipts each month to verify the purchases, he would have realized the purchases were misrepresented in the accounting system. The cardholder concealed the fraudulent purchases by entering into the accounting system misleading descriptions of the purchased items. For

example, ▮ entered "Apple® computer equipment" into the accounting system for Apple® iPods®. The AO approved these purchases by relying on the descriptions included in the UCAR accounting system since the cardholder claimed to have lost the receipts. Because the AO was not required to review receipts and timely approve purchases, this materially degraded the effectiveness of UCAR's internal controls to prevent or detect the fraudulent purchases.

The opportunity increases for cardholders to make fraudulent purchases without being detected, when purchases are not independently approved by reviewing source documentation or not approved in a timely manner. This opportunity is significant due to the number of cardholders and amount of funds spent by cardholders. In FY 2006, approximately 153 UCAR purchase cardholders purchased over $5 million of items.

➢ *Responsibility for Ordering Not Segregated from the Receiving Process*

Separating key responsibilities amongst different staff, such as ordering and receiving goods and services, is another control activity that helps decrease the likelihood of fraud. Such segregation of ordering and receiving limits an organization's exposure to staff purchasing, accepting, and recording goods and services that are unauthorized by management. Separating the ordering and receiving responsibilities is a fundamental principle of an effective internal control system and particularly critical in purchase card programs, such as UCAR's, where the cardholder is responsible for ordering the goods, processing the invoices, and assigning descriptions to purchase transactions in the accounting system.

However, UCAR's purchase cardholders are able to order and receive delivery of items they purchase. Regarding the 90 fraudulent purchases, UCAR's policy in effect during the 2004 fraud did not require receiving reports. The fraud was discovered after the employee was dismissed for reasons unrelated to the fraud and resold Apple® iPods® were returned by their buyers to UCAR's shipping and receiving department. Thus, there was an increased risk of fraudulent purchases since the person making the purchases did not have to collaborate with another person involved in receiving the purchases.

UCAR's past and current policy does not require the segregation of ordering and receiving of items acquired with purchase cards. Furthermore, UCAR's receiving department does not have access to the purchase card system to verify items received match the description of the items entered by the purchase cardholder into the UCAR purchase card system and recorded as an expense in the accounting system. Therefore the lack of an effective approval process combined with inadequate segregation of duties allowed the employee and potentially others to misuse purchase cards and not be detected.

➢ *Inventory of Equipment is Not Required for Items Prone to Theft and Costing Under $5,000*

Taking inventory of equipment is an effective control activity to ensure all purchased equipment is accounted for. It assists management in identifying missing and unnecessary equipment. OMB Circular A-110 requires awardees to conduct a physical inventory of all equipment and to reconcile the results with the equipment records at least once every two years. Any differences between quantities determined by the physical inspection and those shown in the accounting

records must be investigated to determine the causes of the missing equipment. This inventory requirement applies to all equipment with an acquisition cost of $5,000 or more per unit but lower limits may be established.

Consistent with OMB policy, UCAR set lower limits for items vulnerable to theft. UCAR's Property Manual encourages, but does not require, that each division's property administrator maintain property records accounting for purchased items costing less than $5,000. UCAR allows this flexibility to avoid the burden of tracking small dollar items not vulnerable to theft.

However, we found that UCAR did not conduct inventories for items costing less than $5,000 which are susceptible to theft. Knowing that an inventory would not be conducted enabled the dishonest purchase cardholder to re-sell purchased goods with little concern that they would be identified as missing. Also, the lack of an inventory to verify the existence of small dollar equipment prone to theft increases the likelihood of theft or loss of other equipment. Furthermore, although we did not identify divisions not maintaining a list of inventoried items costing less than $5,000, property managers within each division have the discretion to maintain records of this equipment. Having this discretion could allow managers to decide in the future to not maintain records of the equipment susceptible to theft.

The UCAR Property Manual does not require an inventory be conducted to verify the existence of vulnerable property, and does not require that each division's property administrator maintain property records accounting for purchased items costing less than $5,000. As evidenced by the fraud, allowing managers to exercise such discretion, especially unchecked, results in inconsistent, incomplete, and inadequate accountability of equipment under $5,000.

Information and Communication

➢ *Available Reports Not Provided to Users*

An important part of the COSO framework for an effective internal control system is the process of timely identifying, collecting, and disseminating information that managers need to carry out their responsibilities, including properly monitoring and overseeing the purchase card activity. To ensure all purchases and transactions are authorized and necessary, supervisors of cardholders, division managers, and other managers of the purchase card program must receive and review reports about the purchases that have been made. These reports should be used by employees at different stages in the purchase process and contribute to the overall effectiveness of UCAR's internal control system.

UCAR staff had key information to assist supervisors of cardholders and other managers in detecting improper and illegal purchases but it was not provided to the appropriate staff. For example, UCAR's Finance and Administration generated informational reports maintained by the purchase card vendor, JP Morgan Chase®, which identify spending patterns, denied transactions, and disputes. However, UCAR did not provide these reports to supervisors, division managers, or purchase card managers for their use in overseeing and monitoring purchase card acquisitions. In addition, Finance and Administration generated reports showing

the status of monthly purchases that had not been approved by the supervisors; however, these were not distributed either.

This ineffective communication contributed to the fraudulent purchases. The purchase card reports could have highlighted irregular or unusual purchase activity by the cardholder as well as lapses in supervisory review and monitoring that might have exposed the fraud. Information must not only be properly distributed, but also used, analyzed, and reviewed by supervisors, division managers, and purchase card managers. They must receive a clear message from top management of the importance of control responsibility and understand their role in the internal control system.

Monitoring

➢ *Monitoring of Compliance with Purchasing Card Policy Is Minimal*

Another important part of the COSO framework for effective internal controls is monitoring the quality of performance of each control activity over time. For the purchase card program, the monitoring process, as part of its routine operations, should periodically verify whether employees are competently performing their control activities to help prevent and detect fraudulent purchases. Deficiencies identified should be promptly brought to management's attention for action.

However, UCAR's Contracts Department performed minimal monitoring of purchase cardholders or division level compliance with program policy. UCAR managers and supervisors did not actively monitor purchase cardholders to ensure that only authorized purchases were made. There were no periodic checks of supervisor and cardholder compliance with purchase guidelines, which could have identified if supervisors were timely approving transactions, and cardholders were collecting and maintaining receipts for purchases or splitting purchases to avoid purchase threshold limitations. As a result of minimal monitoring of the purchase card program, there were increased opportunities for fraudulent uses of the purchase cards. The lack of a monitoring program helped preclude UCAR from detecting the fraud that occurred.

Risk Assessment

➢ *Periodic Risk Assessment Not Scheduled*

A risk assessment provides management with knowledge of vulnerabilities and weaknesses in program operations. It assesses the associated risk of changes in economic, industry and internal operating conditions and the adequacy of the control activities currently in place to address or mitigate these risks. As such, a regular scheduled risk assessment of the purchase card program would likely have identified the inadequate segregation of cardholder duties and supervisor and management oversight and monitoring.

However, UCAR has not conducted periodic assessments of the risks to its purchase card program. As a result, weaknesses in the purchase card process as described herein were not identified and corrected. Furthermore, these weaknesses were exploited by the fraudulent

purchase cardholder. UCAR's management has not developed a systematic manner of analyzing risks, including identification and evaluation of significant threats or the likelihood of their occurrence.

Control Environment

➢ *Purchase Cardholders and Supervisors Not Sufficiently Trained*

Cardholders and supervisors need to understand their purchase card responsibilities and stewardship roles in order to effectively execute their duties. This requires that they not only receive training before assuming their duties, but also receive periodic refresher training thereafter. Additionally, it is important that UCAR management recognize the importance of training and committing the necessary resources and time for staff to attend purchase card training.

Purchase cardholders and supervisors did receive initial training. However they did not receive any follow up refresher training. Without periodic reminders of their purchase card responsibilities, supervisors and staff became lax in their duties and appeared to lose sight of the importance of internal control checks and balances. In turn, this created an environment conducive to errors and abuse and contributed to the fraud that occurred in the purchase card program.

UCAR's Actions in Response to the Discovery of Fraud

In response to learning of the fraud in its purchase card program, UCAR performed a risk assessment in 2005 and had its internal auditor conduct a review of the purchase card controls. Both identified many vulnerabilities and weaknesses in the UCAR purchase card program. UCAR has taken steps to correct some of the more significant deficiencies; however, more improvements are needed to ensure federal funds are used solely for authorized business purposes. In July 2005 and again in August 2007, UCAR made revisions to its purchase card policy. Notable changes to the policy included the following requirements:

1. Supervisors approve lists of purchases by reviewing and initialing the receipts to authenticate the business purpose of the items acquired each month;

2. Divisions maintain property lists of sensitive items valued under $5,000 (more specific guidance defining sensitive items was provided to help ensure staff consistently track items vulnerable to theft);

3. Finance and Administration obtain and review reports from the purchase card vendor that may expose suspicious activities such as unusually high spending patterns, denied transactions, and disputes;

4. Finance and Administration and Contracts jointly perform random compliance checks of cardholders to ensure that the purchase card policy requirements are followed;

5. Cardholders and their supervisors receive annual refresher training (UCAR has developed an in-depth training course for this refresher training); and,

6. Management periodically review the on-going need of each purchase card to keep the number of cardholders to the minimum necessary.

UCAR has moved toward implementing four of these six new requirements by a) informing the supervisors to review and initial the receipts by the 20th of each month to authenticate the business purpose of the purchases, b) providing guidance to departments regarding the definitions of sensitive property and working with departments in an effort to attain consistency among UCAR departments in tracking sensitive items vulnerable to theft, c) obtaining and reviewing reports from the purchase card vendor that may expose suspicious activities, and d) reducing the number of cardholders from over 200 down to 150 along with establishing a requirement to periodically review cardholders' need to have a purchase card.

While these changes should improve the accountability of the cardholders, more work is needed. UCAR has not implemented random checks of purchase cardholders and their supervisors for compliance with the current purchase card policy. UCAR also has not implemented the refresher training program. Furthermore, the requirement to obtain reports from the purchase card vendor, along with reports showing the status of monthly approvals of cardholders purchase activity should be expanded beyond Finance and Administration to be more effective in helping managers oversee the purchase card program. UCAR needs to expand these requirements to ensure cardholder supervisors, division managers, and other managers of the purchase card program receive and review these reports that identify whether cardholders are attempting to make unauthorized purchases and whether supervisors are approving purchases in a timely manner. Dissemination of this information about suspicious purchases and unapproved purchases to all managers having responsibilities over purchase cards helps ensure purchase transactions are authorized and necessary.

Additionally, the revised policy did not address a number of weaknesses that contributed to the fraud not being detected as follows:

1. Key responsibilities for ordering and receiving are not separated for equipment acquired with purchase cards including other compensating controls for items that are not sent through UCAR's shipping and receiving department;

2. Items costing less than $5,000 which are susceptible to theft are not inventoried; and,

3. Periodic risk assessments are not performed to identify potential risks in the purchase card program.

In addition, while UCAR's internal auditor completed a review of the purchase card program and issued a draft report to UCAR's management in December 2006, the auditor left UCAR in February 2007 and the final report has yet to be issued. The draft report reflected the performance of a comprehensive and detailed review, containing over 30 findings and recommendations. Many of the report findings substantiate the conditions identified in our review as previously discussed, including a finding that purchase cardholders were able to both order and receive delivery of items they purchased. The draft report states that 50 percent of the

transactions tested did not include documentation verifying receipt by the UCAR central receiving unit, which is independent of the cardholder. The internal auditor also reported 8 percent of, or 13 of 165, vendor-provided purchase lists tested were not approved by the supervisor or were not in the purchase files, and 29 percent of, or 18 of 62, cardholders tested had at least one monthly purchase list that had not been reviewed and approved by the supervisor. In a couple of instances the listings were approved by individuals who did not have authority to approve purchases, and some supervisors, who were cardholders, improperly approved their own purchases. The internal auditor resigned ▮ position before reviewing and responding to UCAR's reply to the audit findings and recommendations. Because the internal auditor position remains vacant, the draft audit report has yet to be finalized and issued to the UCAR Board of Trustees.

An effective internal control environment includes providing for independent reviews and assessments of the business operations, which an internal auditor is professionally trained to perform. UCAR's size, volume of federal awards, and administrative and business environment complexity warrant having an internal auditor. UCAR's Board of Trustees established the Internal Auditing Department and its responsibilities are defined by the Board's Audit and Finance Committee, which approved the Department's Charter on May 16, 2006. In accordance with its charter, the Internal Auditing Department provides for independent and objective assessments and recommendations that improve the operations of UCAR. The charter requires all internal audit activities to remain free of influence from any source in order to maintain independence and objectivity. The charter also requires all reports to be distributed to the Chair of the Audit and Finance Committee, the Vice President of Finance and Administration, and other interested parties if appropriate. The Audit and Finance Committee, along with input from UCAR management, is responsible for staffing and overseeing work performed by the internal auditor. The internal auditor reports administratively to the Vice President of Finance and Administration and functionally to the Audit and Finance Committee. The internal auditor assists UCAR in accomplishing its objectives by bringing a systematic and disciplined approach to evaluate and improve the effectiveness of the organization's risk management, control, and governance processes.

However, the internal auditor position remained vacant through the end of our audit field work in July 2007. Also, previous to UCAR hiring the most recent internal auditor, the position was unfilled for five years. If, during this gap, an internal auditor had been present, he or she may have identified the weaknesses in the purchase card program to management for action and possibly have prevented the fraud. Having the internal auditor position filled on a permanent basis is an important preventative control and could help UCAR avoid the potential cost and embarrassment of future frauds.

Recommendations:

We recommend that NSF direct UCAR to:

1. Fully implement the requirements of its purchase card policy and monitor compliance. Specifically;

   a. Complete the development of the monitoring process to ensure staff follow purchase card policy and procedures; and,

   b. Implement the refresher training program.

2. Continue to develop and improve its purchase card policy in the following areas:

   a. Separate key responsibilities for ordering and receiving items acquired with purchase cards;

   b. Conduct periodic inventories of items under $5,000 that are vulnerable to theft;

   c. Ensure key information is provided to the appropriate staff enabling them to carry out their responsibilities; and,

   d. Perform periodic risk assessments.

3. Address the internal audit concerns by:

   a. Staffing the internal auditor position as soon as possible;

   b. Requesting periodic internal audits of the purchase card program;

   c. Completing and issuing the draft Purchase Card internal audit report; and,

   d. Developing and implementing a corrective action plan to address all internal audit recommendations contained in the final audit report regarding the purchase card program.

UCAR Comments and OIG Response

UCAR stated their corrective actions to address all the above recommendations but disagreed to conduct inventories of sensitive items costing less than $5,000 (recommendation 2b). UCAR corrective actions should address the intent of our recommendations to implement a refresher training program (recommendation 1b), ensure key information is provided to the appropriate staff (recommendation 2c), fill the vacant internal auditor position (recommendation 3a), issue a final internal audit report on purchase cards (recommendation 3c) and, develop and implement a corrective action plan for the final audit report (recommendation 3d). Regarding the remaining recommendations, we are less assured that UCAR's proposed actions would sufficiently address the recommendations and corresponding inadequacies we noted with internal controls involving

monitoring the use of purchase cards (recommendation 1a), separating the receiving function from the ordering function (recommendation 2a), performing periodic risk assessments (recommendation 2d), and conducting audits by the internal auditor on the purchase card program (recommendation 3b).

UCAR stated that after careful consideration, it concluded that conducting inventories of sensitive items costing less than $5,000 is not cost effective. UCAR believes its current process of tracking sensitive items, reporting annually the items on inventory lists (which UCAR stated were current as of January 2008), and recovering property from separating employees is sufficient to safeguard such property. Although, UCAR stated that it plans to continue assessing the risks involved with sensitive property, we do not believe that enough has been done to address our concerns. UCAR needs to provide their cost analysis that should sufficiently explain how they concluded conducting inventories was not effective for these inventories, which are valued at a total cost of $5 million. We believe it is imperative to conduct a minimum number of inventories to determine whether UCAR has a problem with missing items that are vulnerable to theft.

Regarding our recommendation 1a to complete the development of the monitoring process, UCAR comments did not specifically address enforcing its written policy to have the Contract Department conduct random checks of supervisors and cardholders' compliance with purchase card policies. Instead, it appears that UCAR is tasking the internal auditor to perform such reviews. We are concerned that in taking on the responsibilities of the Contracts staff, the internal auditor will be left with less time to provide independent reviews including a comprehensive review of the purchase card system, along with assessments of other UCAR business operations, as the internal auditor is professionally trained to evaluate and improve the effectiveness of the organization's risk management, control, and governance processes (see recommendation 3b below regarding UCAR's comments on conducting audits on the purchase card program).

Regarding our recommendation 2a for separating key responsibilities amongst different staff for ordering and receiving goods and services, UCAR stated that it has separated purchasing and receiving responsibilities by requiring shipments of purchases to be centrally received, except for field projects and where a cardholder directly makes a purchase at a local store. UCAR stated that it will also provide additional training regarding separation of duties for receiving department personnel. However, UCAR's proposed actions for separating the ordering and receiving responsibilities is incomplete in that it does not address whether UCAR's receiving department would be given access to the purchase card system to verify items received match the description of the items entered by the purchase cardholder into the UCAR purchase card system and recorded as an expense in the accounting system. Without this capability, the receiving department would not be able to detect a cardholder concealing fraudulent purchases by entering misleading descriptions of the purchased items into the purchase system. We maintain that separating the ordering and receiving responsibilities is a fundamental principle of an effective internal control system and particularly critical in purchase card programs, such as UCAR's, where the cardholder is responsible for ordering the goods, processing the invoices, and assigning descriptions to purchase transactions in the accounting system.

Regarding our recommendation 2d for performing risk assessments, UCAR stated that a risk assessment of the purchase card program is a high priority in its development of the annual internal audit plan. However, UCAR comments on conducting risk assessments was incomplete in omitting management's involvement in developing the risk assessment, which is important given management's knowledge of vulnerabilities and weaknesses in program operations. Regularly scheduled risk assessments conducted by management is essential to achieve the effectiveness of a COSO compliant system of internal controls. While we applaud the idea of involving the internal auditor in developing the risk assessment to maximize the synergy gained from the knowledge of both the internal auditor and management working together, having management involved in the process will make it a more effective assessment.

Regarding our recommendation 3b that UCAR request periodic internal audits of the purchase card program, UCAR stated the internal auditor provided two reports on some of UCAR's control activities involving supervisors actively monitoring purchase cardholders to ensure that only authorized purchases were made.   While these reviews addressed important controls activities, a thorough independent audit should address all of UCAR controls activities and the four other elements of COSO's integrated framework for internal controls, which is an effective model to help detect and prevent fraud. Furthermore, rather than UCAR having the internal auditor perform these limited reviews, a more effective use of the internal auditor would have the auditor, as part of its next audit of the purchase card program, review the Contract Manager's random checks whether supervisors actively monitored purchase cardholders as part of auditor's risk assessment of the UCAR purchase card program. If the internal auditor finds the random checks sufficiently completed, less testing would be required as part of the audit needed to sufficiently review the purchase card program.

It is also important that the corrective actions UCAR describes in its response be included in policies by assigning responsibility to individual positions, and establishing timeframes for completing the corrective actions contained in the policies. Written policies and procedures will help ensure the continued success in controlling the very high risk involved in purchase card programs. NSF should work with UCAR to ensure that it develops an acceptable corrective action plan to timely and completely resolve each audit recommendation.

2. UCAR Needs to Enhance Processes for Recording and Reporting Labor

Federal cost principles require that timekeeping systems accurately reflect the activity of each employee and accounting systems show a valid reason for transferring labor costs to another project. However, we found that UCAR was not adequately recording and supporting labor charges including labor transfers. Specifically, 75 percent of the salaried UCAR employees we interviewed were not recording all of their hours worked, 25 percent of the employees we tested charged their time using budgeted rather than actual hours, 10 percent of the employees we tested earned and used compensatory time without recording the hours in the timekeeping system, and two employees stated that they were aware of staff on leave who recorded their time as being at work. Furthermore, UCAR did not have detailed written justification to support 89 percent of the labor cost transfers we tested. Without a reliable basis of support, UCAR's $58 million of labor costs charged to NSF and other federal agencies annually are at risk of not being accurately allocated. UCAR needs to develop a timekeeping system to accommodate salaried employees that work more than 80 hours in a pay period, provide its employees specific guidance on timecard completion, and provide more oversight of accounting for leave and labor cost transfers.

Incomplete Accounting for Time

OMB Circular A-122, "*Cost Principles for Non-Profit Organizations*," states that time reporting must reflect the actual work activity of the employees. However, twelve, or 75 percent, of the sixteen salaried employees we interviewed did not record all hours that they worked.[4] These employees, who are exempt from receiving overtime pay, recorded only 80 hours of labor effort for each two week pay period even though they worked more. Most of the individuals interviewed explained that they often volunteered to work in excess of 80 hours to accomplish interesting and challenging research objectives.

Although most of these employees stated that they accounted for the extra time by distributing 80 hours between projects and other activities in proportion to their actual hours worked during the pay period, a more capable time reporting system would accurately track actual hours or percentages of time worked on projects and other activities. The system limitation creates the possibility for overcharging and undercharging projects or other administrative activities. For example, an employee spends 80 hours of his time on a project and charges that project 80 hours. However, during the same pay period the employee also works 20 hours on a new research project and administrative activities. The distribution of the employee's labor charge is actually 80 percent on the original project as opposed to 100 percent as charged. The remaining 20 percent should be split between the new research project and administrative activities. If the employee's biweekly salary is $4,000, the 20 percent difference equates to $800 that is overcharged to the original project and which should have been divided and charged to the new research project and administrative activities.

Regarding the same example, another possibility exists of inappropriately lowering UCAR's indirect cost rates. When employees charge all of their time to research activities and do not

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[4] We interviewed 16 salaried and 4 hourly employees.

account for administrative time, UCAR's indirect costs will be understated and direct charges will be overstated. As direct labor costs are incorrectly overstated and charged on awards, the indirect cost rate will decrease because the rate is calculated by dividing indirect costs by direct research costs. In effect, UCAR is recovering indirect costs as direct costs when it understates indirect costs and overstates direct labor costs. An artificially low indirect cost rate incorrectly overstates direct costs on awards and understates the administrative costs to operate UCAR facilities.

UCAR, by not requiring its employees to record all the hours worked on their time card, increases its risk of not accurately allocating salaries to over 400 federal awards provided by ten federal agencies and departments. Since salaried employees make up a majority of UCAR's $58 million annual labor costs, there is a high likelihood that a substantial amount of labor cost could be mischarged to specific awards.

UCAR's electronic timekeeping system does not allow salaried employees to account for more than 8 hours a day or 80 hours every two weeks. In contrast, UCAR's non-salaried staff, who are eligible to receive overtime pay, are allowed to record hours in excess of 8 hours a day. UCAR decided not to develop a time reporting system that would track actual hours or percentages of time worked on projects and other activities, contending that the existing timekeeping system is adequate as long as employees distribute the 80 hours in proportion to their actual hours worked during the pay period. However, employees often are under the misconception that if they charge the first 80 hours to projects, the extra hours are gratuitous and do not have to be accounted for on timecards. Thus, they incorrectly believe that not accounting for the extra hours has no effect on distributing costs to various awards. Specifically, they do not realize that as they spend more time on other activities, a smaller portion of their salary should be distributed to the original 80 hours and a proportionate share of the salary should be distributed to the awards benefiting from the extra or gratuitous hours. Therefore, to help ensure an accurate distribution of salary to federal awards, employees need to account for all time worked. This full accounting of hours would help prevent mischarging some awards and ensure employees' salaries are proportionately distributed across all awards.

Budgeted Labor, Instead of Actual, Charged

Federal cost principles require that timekeeping systems accurately reflect the actual activity of each employee and specifically state that "budget estimates do not qualify as support for charges" to federal awards. Contrary to these requirements, five UCAR employees, or 25 percent, of 20 employees included in our sample charged their time to federal awards based on budget estimates of the labor effort they planned to spend on individual projects.

Prior to the beginning of the fiscal year, each division develops budgets based on the estimated amount of time that each employee expects to spend on individual projects and other activities. Periodically, UCAR revises these budget estimates during the year to more accurately reflect actual employee effort. These revised estimates are also used by some employees to record their time. However, if employees are using budgeted hours without considering actual time spent on projects and other activities, employees are not accurately recording their time. By recording budgeted rather than actual labor effort, UCAR is potentially overstating or understating the labor costs it charges to individual federal awards and agencies. Based on our sample, UCAR

recorded and charged as much as $14.5 million of labor costs to federal awards based on budgets without assurance that they represented actual costs benefiting those awards.

Our interviews of UCAR employees from a variety of positions, jobs, and pay rates found a general belief that recording budgeted estimates instead of actual labor effort was an acceptable means to allocate labor costs to federal awards. UCAR policies did not specifically restrict employees from recording budget estimates as actual costs and employees were not sufficiently trained on how to record time accurately. UCAR did not have regularly scheduled refresher training or provide reminders to employees of the importance of accurate timekeeping.

Guidance Needed on Tracking Time Worked

In contrast to federal requirements to record actual time, two salaried employees, or 10 percent of our sample, were earning and using compensatory time without recording the extra hours earned and actual leave taken on their timecards. Because there was no record of compensatory hours worked, the employees did not have any formally recognized earned hours against which to charge leave. Accordingly, when they took leave, their timecards inaccurately indicated that the employees were at work. The use of "unofficial" time off for extra hours worked is neither acceptable nor permitted under the OMB requirements or UCAR's own policies.

When employees do not record compensatory time earned, UCAR is at risk of mischarging salaries to its federal awards, since there is little assurance that the extra hours are correctly allocated to the benefiting federal awards. Furthermore, there is no documentation to evidence that the earned compensatory time equals the compensatory time actually used by the employee. Based on our sample, as much $5.8 million of UCAR salaries involved the use of compensatory time without any formal documentation of actual hours worked or leave taken. Employees' ability to record themselves on their timecards as "at work" when they are actually using compensatory leave could lead to abuse by employees, especially those who do not have sufficient vacation or sick leave balances.

UCAR does not officially allow employees to earn or use compensatory time and its automated timekeeping system is not programmed to recognize it. UCAR needs to recognize the importance of having accountability over actual hours worked and leave taken by establishing a policy and procedure providing guidance to staff in what is allowable and not allowable and then educate employees on the issue.

Leave Recording Needs Improvement

Salaried employees were also using sick and annual leave without recording leave on their timecards. Two of the salaried employees we interviewed stated that they were aware of employees taking time off for vacation or sick leave without recording the associated leave in the timekeeping system. The employees' rationale is that leave does not have to be accounted for if 80 hours in a pay period have been worked and recorded. Similar to the practice of not recording hours worked in excess of 80 hours in a pay period, employees are working 80 hours and not recording leave; or, similar to the unrecorded compensatory leave, this is another instance where

timecards report employees to be working on research projects and other activities when in fact they are not.[5] Both situations are contrary to federal requirements.

This practice of not recording leave on time cards increases UCAR's risk of making inaccurate salary allocations to its federal awards. To ensure all awards receive an equitable charge for leave, UCAR uses a fringe benefit cost pool to track and allocate benefit costs. When employees do not account for leave, fringe benefit costs will be understated and results in misallocated costs. Because the salary will be allocated entirely to direct research activities and none to fringe benefits, direct charges will be overstated and the fringe benefit rate understated. With over 1,000 salaried employees incurring approximately $5.3 million in annual and sick leave, the potential exists for a sizable mischarge. An artificially low fringe benefit rate incorrectly allocates costs to awards and understates the fringe benefit costs to operate UCAR facilities. Furthermore, the ability of employees to record themselves as "at work" on their time cards when they are actually on leave could lead to abuse, especially by employees who do not have sufficient vacation or sick leave balances.

UCAR does not have a process that helps ensure requested leave is recorded on time cards for salaried employees. Salaried employees are allowed to use vacation or sick leave with only a verbal approval from their supervisor. UCAR does not use a leave request form. Therefore, the only written documentation of leave taken is what the employee records on their time card. Further, each organizational unit at UCAR has been given the discretion to decide whether a supervisor must approve salaried employees' time cards. As such, UCAR has entrusted most salaried employees to accurately record their leave. In accordance with federal guidelines, UCAR's timekeeping policy allows salaried employees to complete and approve their own timesheets without obtaining supervisory approval. However, if an employee chooses not to record leave, there is no written accountability of either the leave requested or taken. Accountability for reporting leave taken is left to the salaried employees.

Improved Support Needed for Labor Transfers

OMB Circular A-122 states that for a cost charged to an award to be allowable, it must be adequately documented and specifically benefit the award. As such, any transfers of costs between awards must be clearly justified and explained with written documentation.

UCAR did not sufficiently document reasons for 89 percent ($53,000) of the 45 labor cost transfers we tested. The only documentation we found for many transfers were emails from division administrators to project managers stating that the transfers were necessary in order to charge costs to correct accounts. Project managers approved the labor transfers by responding simply that they agreed without providing any additional reasons for the transfers. We learned through interviews that often project managers did not understand why labor costs were being transferred. We found no better explanation for labor cost transfers that used the standard UCAR transfer form instead of an email. While we determined that 54 percent of the transfers were appropriate and necessary to correct for charges made to closed award accounts, UCAR could

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[5] UCAR timekeeping system for salaried employees allowed employees to record 80 hours for administrative activities and research projects for each pay period without identifying the day of week the employee worked.

not provide reasons for the remaining 35 percent of the tested transfer entries. In addition, UCAR does not have a time limit for the labor cost transfer process. Some of the transfers were for charges occurring over six months before UCAR personnel initiated the transfer.

During our sampled period of 9 months, UCAR processed approximately 2,600 cost transfers totaling $3.5 million. Without documentation to explain and support these labor cost transfers, UCAR cannot ensure that costs were properly charged to the benefiting awards. UCAR did not enforce its own requirement of providing supporting documentation for cost transfers between awards. Furthermore, employees did not realize the importance of accurately recording their labor effort or that federal regulations require supporting documentation to ensure that labor is accurately charged to federal awards.

Timekeeping System Should Prevent the Use of Closed Accounts

Twenty-four of the 45 labor cost transfers we reviewed were for corrections because UCAR's timekeeping system allowed employees to charge labor effort to closed accounts. UCAR processed an average of 300 labor adjustments a month ($400,000 worth) and based on our sample results, it is likely that over half were related to charges to a closed account. As a result, we estimate that UCAR spent approximately $12,000 a month, or $144,000 per year correcting errors that its timekeeping system could have prevented. This occurred because the timekeeping system allowed employees to record time to closed accounts. Also in some instances, the current account codes were not communicated to employees.

Recommendations:

We recommend that NSF require UCAR to:

1. Develop training, with regularly scheduled refresher updates, to better ensure labor effort is charged to federal awards accurately.

2. Develop detailed policy and procedures that require:

   a. Actual (as opposed to budgeted) time be recorded on time cards, and

   b. All time earned and used be recorded on time cards.

3. Implement a timekeeping system that allows all employees to record hours worked exceeding 80 hours per pay period.

4. Develop a policy requiring employees to accurately record all leave taken.

5. Require labor transfer requests be fully explained in writing and properly approved to better prevent unauthorized transfers of cost between awards.

6. Limit the time allowed for labor cost transfer by requiring a higher level of approval.

7. Implement programming checks into the timekeeping system to prevent employees from being able to charge closed or invalid accounts.

UCAR Comments and OIG Response

UCAR generally agreed with our recommendations but in one instance, proposed an alternative corrective action. In lieu of concurring with our recommendation to implement a timekeeping system that allows all employees to record hours worked exceeding 80 hours per pay period, UCAR agreed to research other systems that will record all hours worked by employees along with surveying other organizations including other federal laboratories and universities to identify how they meet this requirement.

We are concerned that UCAR's actions may not sufficiently address our recommendation regarding developing a timekeeping system that meets OMB Circular A-122 *"Cost Principles for Non-Profit Organizations.* While we agree with UCAR's idea of surveying other federal laboratories, UCAR should be aware that universities are required to follow unique OMB guidance that is significantly different than OMB guidance for non-profit organizations. Additionally, as UCAR researches potential solutions in developing and implementing an acceptable time and effort system, UCAR's $58 million of labor costs charged to NSF and other federal agencies annually are at risk of not being accurately allocated.

For the remaining recommendations, UCAR agreed to develop an employee training program to better ensure labor effort is accurately charged to federal awards, strengthen its policy and procedures regarding the requirement to record actual (as opposed to budgeted) time on timecards, improve its existing policy and procedures requiring employees to accurately record all leave taken, develop a policy that will limit the time allowed to submit labor cost transfers, and agreed to better manage closing its financial accounts to reduce the number of corrections performed every pay period. Furthermore, UCAR has already taken action on our recommendation to require labor transfer requests be fully explained in writing and properly approved to better support the legitimacy of costs transfers between awards.

It is important that UCAR's corrective action plan include timeframes for the completion of proposed policies, and these policies include assigning responsibility to individual positions for completing procedures contained within the policies. Written policies and procedures will help ensure the continued success in controlling the proper allocation of labor costs. NSF should work with UCAR to ensure that it develops an acceptable corrective action plan to timely and completely resolve each audit recommendation.

UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH

NATIONAL CENTER FOR ATMOSPHERIC RESEARCH | UCAR OFFICE OF PROGRAMS

January18, 2008

James Noeth
Office of the Inspector General
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

Subject: Draft Report on UCAR's Purchase Card and Timekeeping System

Dear Mr. Noeth,

Thank you for the opportunity to review and comment on the subject report. UCAR's response is enclosed. Please let me know if you have further questions or need clarification.

Sincerely,

UCAR Response to OIG 08-1-003, Draft dated 12/21/07

As a general comment, you might want to consider putting the two pieces of the document, Purchasing Card and Labor Reporting in the same format.

Executive Summary

Page i, Paragraph 2, refers to a 2003 OIG survey that identified concerns with UCAR's internal controls over time and effort reporting and cost transfers between awards. We cannot find a copy of this survey in our files. We do have a 2004 OIG Survey entitled "Internal Audit Risk Assessment & Audit Plan Development," but we do not see concerns raised in it regarding time and effort reporting and cost transfers.

Page i, Paragraph 4, states that the internal auditor left "after less than one year of employment." In fact, the auditor was employed by UCAR from January 23, 2006 through February 28, 2007.

Page i, Paragraph 5, states that the IG auditors found that employees "inaccurately reported their time as worked when they were on leave." When this issue is discussed later in the report, it does not state that the auditors actually found evidence of this, only that they were told that other employees had heard it happened.

Background

The following chart corrects errors in the chart in the draft audit report. The totals remain the same.

Total Expenditures
For Fiscal Year Ending 9/30/2006

	NCAR	UOP	Other UCAR	Grand Total
NSF Expenditures	90,791,662.00	14,447,295.00	409,562.00	105,648,519.00
Other Federal Agency Expenditures	37,623,940.00	24,982,788.00	281,385.00	62,888,113.00
Subtotal Federal Expenditures	128,415,602.00	39,430,083.00	690,947.00	168,536,632.00
Non-Federal Expenditures	10,226,082.00	2,700,862.00	969,629.00	13,896,573.00
	138,641,684.00	42,130,945.00	1,660,576.00	182,433,205.00

1. UCAR Needs to Improve Internal Controls over Purchase Cards

Finding: "Supervisors Were not Required to Review Receipts"

UCAR Position: This finding should read "Approving Officials were not required to review receipts." As part of our reforms to the UCAR Purchasing Card system after the fraud, we began requiring that the Approving Official be the cardholder's supervisor. This was not the case when the fraud occurred.

We agree with the finding and implemented a requirement that receipts be reviewed in March 2005.

Finding: "Responsibility for ordering not segregated from the receiving process"

UCAR Position: This finding is addressed in the response to Recommendation 2a.

Finding: "Inventory of Equipment is Not Required for Items Prone to Theft and Costing Under $5,000"

UCAR Position: This finding is addressed in the response to Recommendation 2b.

Finding: "Available Reports Not Provided to Users"

UCAR Position: This was true prior to discovery of the fraud but has since been changed; see the response to Recommendation 2c.

Finding: "Monitoring of Compliance with Purchasing Card Policy is Minimal"

UCAR Position: This finding is addressed in the response to Recommendation 1a.

Finding: "Purchase Cardholders and Supervisors Not Sufficiently Trained"

UCAR Position: This finding is addressed in the response to Recommendation 1b.

Recommendation 1: Fully implement the requirements of its purchase card policy and monitor compliance. Specifically,

a. Complete the development of the monitoring process to ensure staff follow purchase card policy and procedures and,

b. Implement the refresher training program.

UCAR Response:

1a. Starting in January 2006 the following monthly reports were generated for the Contracts Manager for use in monitoring the UPC Program. These reports were done to ensure that cardholders were in compliance with the UPC Policy and Procedures.

1. Unusual Activity Analysis
2. Disputes by Hierarchy
3. Transaction Summary
4. Suspicious Activity

Once suspicious transactions are identified by the Contracts Manager the cardholder is notified by the UPC Administrator to provide additional supporting documentation in the form of a receipt as well as a short explanation of the purpose of the purchase. Random transactions are pulled based upon possible split charges, discretionary keys and questionable vendors, etc. Once a thorough review is completed, the findings are then passed on to the Vice President for Finance and Administration for review.

If there is a UPC violation, the Contracts Manager sends a memo to the cardholder notifying them of the violation and the appropriate disciplinary action. A copy of the memo is sent to the cardholder's Division Director and Approving Official, the Vice President for Finance and Administration, the Internal Auditor, and the UPC Administrator.

1b. In August 2007 the UCAR Contracts Office conducted four Mandatory UPC Refresher Training sessions. All UPC cardholders were required to attend as well as Approving Officials. Those cardholders located in remote locations or unable to attend due to conflicting field projects etc. were given the opportunity to watch a recorded session directly from their computers. This session can be

viewed by clicking on the direct link located at:
http://www.fin.ucar.edu/it/mms/webcasts/fanda/ucar_upc_training_07

Topics covered during the session included FY05-06 UPC Activity by Division, Audit Findings, Updated Contact Information, and Year End UPC Procedures.

Cardholders and AOs who did not complete the training session in a timely fashion were sent several email reminders and eventually had their cardholder privileges temporarily revoked until the training was completed. As of 11/08/07 all cardholders and Approving Officials completed the mandatory training.

We are currently reviewing whether the refresher training should be required every year or every other year. Training of new cardholders and Approving Officials is done on an ongoing basis.

Recommendation 2: Continue to develop and improve its purchase card policy in the following areas:

a. Separate key responsibilities for ordering and receiving items acquired with purchase cards;

b. Conduct periodic inventories of items under $5000 that are vulnerable to theft;

c. Ensure key information is provided to the appropriate staff enabling them to carry out their responsibilities; and,

d. Perform periodic risk assessments.

UCAR Response:

2a. With the exception of field projects and instances where the cardholder makes a purchase directly at a store, responsibilities for ordering and receiving are separated. Incoming shipments are received centrally by UCAR Logistics Operations. We will provide additional training to Logistics personnel and cardholders on the separation of responsibilities in this area and their respective roles.

2b. The current procedure is that Divisions and Programs are required to track sensitive property under $5000 and provide a complete listing of sensitive property to the UCAR Property Administrator annually. These lists are current as of January 17, 2008. After careful evaluation, we believe that requiring

inventories of this property is not cost effective. We believe that the annual review of the listing of sensitive property as well as other safeguards, e.g. the "Recovery of Corporate Property" process that is required for any separating employee, provide adequate controls over UCAR's sensitive property. We will continue to assess the risk involved with sensitive property on an ongoing basis and make adjustments as necessary.

2c. In August 2007, a UPC Annual Review was sent to all Lab/Division/Program Directors including the following information: (1) a current division hierarchy with cardholders, AOs, spending limits and contact info, (2) a current year transaction summary report with the number of transactions and the total amount spent on the card, (3) the upcoming UPC training schedule with information on the penalties for not attending the mandatory training and (4) the delinquent cardholder list identifying all cardholders not in compliance with the UPC procedures for submitting their original monthly statement to the Finance Office Representative by the 20th of the month   Directors were to take an inventory of the number of cards in their Division and, if appropriate, eliminate cards with limited activity. We will provide this information on an annual basis as well as alerting Lab/Division/Program Directors to any suspicious activities on an ongoing basis as described in the response to Recommendation 1a.

2d. We are beginning the development of the Annual Internal Audit Plan, which will be discussed with the UCAR Board of Trustees Audit and Finance Committee at their February meeting. A risk assessment of the UPC program is a high priority for this plan.

Recommendation 3: Address the internal audit concerns by:

a. Staffing the internal audit position as soon as possible;

b. Requesting periodic internal audits of the purchase card program;

c. Completing and issuing the draft Purchase Card internal audit report; and,

d. Developing and implementing a corrective action plan to address all the internal audit recommendations contained in the final audit report regarding the purchase card program.

UCAR Response:

3a. The internal audit position has been staffed since November 2007.

3b. The Internal Auditor (IA) has completed a review of two cardholders' monthly statements to date. The first cardholder was a random selection and the second was a more targeted selection. In both instances, one month's transactions were selected and reviewed for compliance with the UPC procedures. The IA has provided reports for both reviews to UCAR Management for the final review and acceptance including any additional follow up that may be necessary with the cardholder or the applicable AO.

3c. The Internal Auditor will review the draft audit report and the work papers left by the former Internal Auditor to determine what parts of the draft audit can be completed. UCAR's response to the draft audit raised substantive questions about the data and findings contained in the draft and it is unclear whether the work papers are sufficient to resolve these questions.

3d. UCAR has already implemented a number of actions recommended in the draft audit, including the following:

- The approval of the Division or Program Director is required on all UPC applications so that they are aware of any new cardholder or AO requests. In addition, we are providing the information discussed in Response 2c annually and requiring Division/Program Director approval of all cardholders and AOs annually.
- In response to the recommendation for symmetry between the ethics program and the contracts department, a link to the UCAR Ethics webpage was added to the UPC procedures. The Ethics webpage provides a means for providing anonymous input about suspicious activity. The availability of the reporting avenue is also highlighted in the refresher training.
- A Frequently Asked Questions (FAQ) link was added to the UCAR Contracts website to cover such questions as the procedures for sending in the Statement of Account (SOA) when an Approving Official is in the field, the Dispute Process, etc.
- The draft audit report cited an internal control weakness that allowed approving officials who were also cardholders to approve their own purchases. This was a problem in card-provider JP Morgan Chase system and has been fixed. This important internal control has been tested in depth and is functioning as required.
- The UPC training and refresher classes address the importance of the role of Logistics operations in the segregation of duties between ordering and receiving.

- AOs are required to review invoices and vouchers to verify receipt of the item as well as the allowability/allocability aspects of the purchase.
- AOs are required to be the supervisor of the cardholder. Any exceptions must be approved in writing by the UCAR Vice President for Finance and Administration.
- Disciplinary action has been taken with regard to cardholders that are not complying with UPC procedures. Cards have been cancelled, and in other cases suspended until appropriate corrective action has been taken.

We will review any other recommendations coming out of the review of the draft audit report by the new internal auditor and take action as appropriate.

2. UCAR Needs to Enhance Processes for Recording and Reporting Labor

Page 13, Paragraph 1 states that "UCAR was not recording and supporting labor charges including labor transfers." This statement implies that there was no recording of labor charges or supporting documentation for transfers, which is not the case. Suggest inserting "adequately" before recording and "in all cases," after charges.

The findings contained in this part of the report are all addressed in response to the recommendations.

Page 14, Paragraph 5, states that UCAR revises budget estimates. This is actually done by the NCAR Budget and Planning Office.

Recommendation 1: Develop training, with regularly scheduled refresher updates, to better ensure labor effort is charged to federal awards accurately.

UCAR Response: UCAR agrees with this recommendation. We plan to begin conducting this training during FY 2008.

Recommendation 2: Develop detailed policy and procedures that require:

a. Actual (as opposed to budgeted) time be recorded on time cards, and

b. All time earned and used be recorded on time cards.

UCAR Response:

2a. Current UCAR payroll procedures require recording of actual time. However, in order to strengthen this requirement, we will amend our policies and procedures and also include in the timecard training.

2b. We assume that this recommendation refers to compensatory time. UCAR does not allow compensatory time. Discussion of this topic will be included in the timecard training content.

Recommendation 3: Implement a timekeeping system that allows all employees to record hours worked exceeding 80 hours per pay period.

UCAR Response: UCAR believes that a strength of its current timecard system is that time and effort reporting are combined in one application. Though it has limitations, this allows for employees to record effort in near-real time, unlike most other approaches that account for time and effort in different systems and at different times.

We are not aware of any commercial off-the-shelf system that provides combined functionality. UCAR plans to take two actions in the near term: first, we will survey available systems to determine whether there is an application available that would meet the needs identified and, secondly, we plan to hold a round table discussion re: Time and Effort Reporting at the April 2008 UCAR-sponsored "Measuring Up" Conference. We are currently seeking representatives from other Federal laboratories and universities to participate in this session.

Recommendation 4: Develop a policy requiring employees to accurately record all leave taken.

UCAR Response: UCAR will strengthen its existing policy and procedures in this area and include this as part of timecard training.

Recommendation 5: Require labor transfer requests be fully explained in writing and properly approved to better prevent unauthorized transfers of cost between awards.

UCAR Response: As noted by OIG staff in discussions with UCAR staff, UCAR has already taken action on this recommendation and the OIG staff pointed out that they had seen significant improvements in this area.

Recommendation 6: Limit the time allowed for labor cost transfer by requiring a higher level of approval.

UCAR Response: UCAR agrees with this recommendation. UCAR is developing a policy that will limit the time allowed to submit labor cost transfers; any transfers submitted beyond the time allotted will require the approval of the Vice President for Finance and Administration.

Recommendation 7: Implement programming checks into the timekeeping system to prevent employees from being able to charge closed or invalid accounts.

UCAR Response: In UCAR's current system, there are controls in place that will not allow a time card to be submitted against a closed account key. However, account keys may be closed after the time card has been submitted but prior to when payroll is processed. To facilitate a successful payroll process, UCAR has elected to turn off the 'flag' that would prevent payroll from successfully processing if a closed account key had been charged. This decision balances the need to reduce subsequent salary transfer entries with the need to successfully complete payroll in a timely manner. With respect to 'invalid' (never existed as an active account key) accounts, time card will not allow an invalid account key to be added to the time card manually. The user selects an account key from a dropdown list of active account keys only. UCAR plans to look for opportunities to reduce the timing between when the time card is submitted and when payroll is processed with respect to closing account keys.

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