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AUDIT REPORT

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OFFICE OF AUDITS

# NASA'S PAYMENTS FOR ACADEMIC TRAINING AND DEGREES

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OFFICE OF INSPECTOR GENERAL

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National Aeronautics and  
Space Administration

Final report released by:



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Inspector General

## Acronyms

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DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
FAR	Federal Acquisition Regulation
GAGAS	Generally Accepted Government Auditing Standards
NPD	NASA Policy Directive
NSSC	NASA Shared Services Center
OHCM	Office of Human Capital Management
SATERN	System for Administration, Training, and Educational Resources for NASA

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## OVERVIEW

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# NASA'S PAYMENTS FOR ACADEMIC TRAINING AND DEGREES

## The Issue

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NASA offers its employees a variety of training and educational opportunities to complement work experiences and achieve better organizational and individual performance. Given the size of NASA's workforce – over 18,500 civil service employees – this training poses a significant organizational cost: NASA officials estimate that between fiscal years 2006 and 2010 the Agency spent approximately \$250 million on employee training. A subset of this total expenditure was for academic training at colleges and universities. Specifically, between July 2006 and September 2010, NASA spent approximately \$17 million to pay for more than 10,120 academic courses for 2,460 NASA employees.

Federal law prohibits NASA from funding academic degrees for civil service personnel except through planned, systemic, and coordinated employee development programs that contribute significantly to meeting an identified training need, resolving an identified staffing problem, or accomplishing the Agency's strategic goals. In light of these restrictions, NASA established academic degree programs designed to encourage the acquisition of new knowledge in support of the Agency's mission and strategic goals and to provide eligible employees with the opportunity to obtain an undergraduate or graduate degree that will help build competencies toward an identified training or staffing need related to the Agency's mission. Outside of these programs, NASA employees may attend individual college courses that improve individual and organizational performance, relate to the employee's current duties or anticipated duties, and assist in achieving the Agency's mission and performance goals.

The Workforce Management and Development Division in the Headquarters Office of Human Capital Management is responsible for general oversight of NASA's training, leadership, and organizational development programs, including NASA's academic training programs. While the Division allocates Agency-wide training funds, it has little oversight of Center-specific training budgets or programs. By design, Center Training Offices are responsible for program execution at their respective locations, handling everything from training budget requests to expenditures. Moreover, Center directorates can apportion program funds for directorate employees to attend academic courses. Although Center Training Offices have final approval authority of academic training Center-wide, they generally rely on the employee's supervisor to ensure classes are

related to the employee's duties and, in most cases, do not question the use of directorate funds.

NASA also pays for academic training for contractor employees as negotiated in a company's contract with NASA. Academic training costs are included in a contractor's overhead account as part of employee fringe benefits. The Federal Acquisition Regulation (FAR) states that in order to be an allowable expense, the cost of training and education must be related to the field in which the employee is working or may reasonably be expected to work. Procedures governing the use of contract funds for contractor employee training are addressed by company policy.

In this audit, we examined NASA's controls over its academic training program. In particular, we reviewed whether funds spent on academic training appear to be reasonable, whether approved courses relate to employees' duties and the Agency's mission, and whether controls are in place to ensure effective management of academic training expenditures. Details of the audit scope and methodology are in Appendix A.

## Results

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Some NASA employees are circumventing the Agency's established procedures to obtain payment for academic degrees outside of formal degree programs. The Agency's decentralized management structure, coupled with a lack of strong internal controls surrounding NASA's payment for employees' undergraduate and graduate degrees, has increased the potential for abuse. Consequently, NASA's management of its academic training program needs significant improvement.

Employee training at NASA is decentralized with each Center autonomously designing and implementing the training program, including formal undergraduate and advanced degree programs, that best fits its needs. The decentralized nature of the training creates challenges for NASA in ensuring that the Agency is not improperly paying course expenses for employees who are not enrolled in the Agency's academic degree training programs, tracking expenditures for academic training, and ensuring that training funds are used judiciously.

We found that NASA has not established adequate internal controls to address these challenges. As a result, from July 2006 through September 2010, NASA paid \$1.44 million for 57 employees to pursue academic degrees outside of NASA's established degree programs – all without service commitments to the Agency for the degree.<sup>1</sup> Moreover, we found that NASA is not able to quantify the total amount it spends on

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<sup>1</sup> A service commitment is an agreement that an employee will continue working at NASA for a specified period of time after completion of a training course or program. If the employee fails to fulfill the requirements of the agreement, the Agency has a right to recover the training costs. Under NASA's formal academic degree programs, employees generally commit to remaining at NASA for 1 year after receiving tuition reimbursement for an undergraduate degree and 3 years after receiving reimbursement for a masters or doctorate degree.

academic training for its civil service employees. In addition, because NASA does not limit tuition rates or annual spending per employee, employees have no incentive to seek training from less expensive public institutions as opposed to more expensive private or for-profit schools. We also found that NASA policy does not address the issue of payment for college credits awarded based on employees' life experience. Further, the Agency could not consistently provide evidence of course completion and the documentation that was provided was not consistently reliable. Finally, NASA provides no oversight of academic training provided to its contractor employees.

**NASA's Academic Training Program Lacks Appropriate Internal Controls.** NASA employees are circumventing the Agency's formal programs to obtain payment for academic degrees. Specifically, during this audit we found that NASA spent \$1.44 million on 57 employees at four NASA Centers and Headquarters who are pursuing degrees outside of NASA's established degree programs and are therefore not subject to the stringent application requirements of the established programs, including degree plan approval. In addition, these employees lack a service commitment to the Agency in exchange for tuition reimbursement, as required in NASA's formal degree programs. Eighteen of these employees each received over \$30,000 in academic training and one employee received over \$60,000 – all without a continued service commitment to NASA. Because it is unclear what benefit NASA received for its \$1.44 million investment in these employees, we question the Agency's expenditure of these funds. Moreover, because this \$1.44 million represents tuition payments for only a sample of employees at the four Centers and Headquarters where we conducted detailed audit work, we believe an examination across all NASA Centers likely would result in substantially higher questioned costs.

Because NASA's academic training program is so decentralized, NASA is unable to identify the total amount it spends on academic training for its civil service employees. In addition, the Agency has not structured its academic training program to encourage cost savings. Specifically, NASA does not cap tuition rates or establish annual spending limits per employee. Accordingly, employees have little incentive to attend less expensive schools. We found that 11 of the top 20 universities NASA employees attended were private or for-profit institutions that are on average 3.6 times and 1.6 times, respectively, more expensive than public universities. In addition, the Agency has not consistently leveraged its buying power to obtain discounts on tuition at frequently attended institutions.

Furthermore, we identified internal control weaknesses that allowed NASA to reimburse employees for academic training even though the Agency did not have evidence of course completion. Based on our statistical projections, we estimate that NASA paid \$892,490 in tuition costs without proper supporting documentation. Finally, NASA accepts documentation such as Internet screen captures and unofficial transcripts as evidence of course completion – documentation that can easily be manipulated.

**NASA Has Limited Oversight of Academic Training Provided to Contractor Employees.** We reviewed three NASA contractors who combined spent more than

\$24 million on academic training courses for their employees between fiscal years 2006 and 2010. NASA reimburses contractors for these costs as part of the employee benefits included in the overhead rate charged by the contractor. To be allowable, these costs must comply with the FAR requirements that training relate to the field in which the employee is working or may reasonably be expected to work and that the cost must not exceed that which would be incurred by a prudent person in the conduct of competitive business.

We identified the top 20 institutions attended by employees of two of the three selected NASA contractors and determined that, similar to NASA civilian employees, these contractor employees are attending private and for-profit institutions more often than public institutions. As discussed previously, the cost of attending a private or for-profit university is significantly higher than that of a public university.<sup>2</sup>

NASA does not review information about contractor academic training to verify if the costs are reasonable or if the courses taken relate to the field in which the employees are working or may reasonably be expected to work. Instead, NASA contracting officers rely on annual audits performed by the Defense Contract Audit Agency (DCAA) to determine whether contractors comply with FAR requirements. However, DCAA audits do not test all costs on a consistent basis and specific to this review do not compare the costs of courses at a private or for-profit institution to the costs for the same courses at a public university.

Finally, we noted that two of the three NASA contractors we reviewed reimbursed employees for academic credits earned for prior life or work experience. We question whether spending taxpayer money for these credits meets the requirements of the FAR that funds are spent for training related to the field in which the employee is working or may be reasonably expected to work. While we noted that NASA contractors have paid for these types of credits, we did not identify NASA civil service personnel earning college credit for prior life or work experience. However, NASA policy is silent on payment of these credits and at least 2 of the top 20 universities attended by NASA employees offer these types of credits.

## Management Action

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NASA should strengthen the policies, procedures, and internal controls for its academic training program. Specifically, NASA should only pay for academic courses for college degrees to employees who have been accepted into the Agency's established academic degree programs. In addition, NASA should ensure that academic training expenses are adequately justified and tracked.

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<sup>2</sup> However, unlike NASA's rules for its civil service employees, each of the three contractors we examined limits the amount of tuition reimbursement available to its employees to a set sum either by calendar year or per credit hour in their corporate policy.

To ensure that academic training funds are spent appropriately and that eligible employees receive degrees only through the established academic degree training programs, we recommended that the NASA Assistant Administrator for Human Capital Management:

- Require that, prior to granting final approval of academic training, Center Training Offices assess the appropriateness of all academic training requests to ensure that employees obtain academic degrees only through established academic training programs;
- Establish a centralized mechanism for tracking the Agency's academic training expenditures;
- Limit payment of academic tuition per credit hour, implement a cap on the total amount that may be reimbursed to an employee during any given year, and establish a formal approval process for consideration of exceptions; and
- Develop a mechanism to leverage the size of NASA's civil service and contractor workforce to negotiate discounted tuition rates at private or for-profit universities.

To strengthen internal controls over academic training, we recommended that the NASA Assistant Administrator for Human Capital Management update NASA policy to:

- Establish the Agency's position on the payment of college credits for life or work experience and the criteria for such payment; and
- Require employees to submit official transcripts to document successful course completion.

In response to a draft of our report, the Acting Assistant Administrator for Human Capital Management concurred with four of our recommendations, partially concurred with a fifth, and non-concurred with the sixth recommendation. The Acting Assistant Administrator said NASA will implement a detailed action plan no later than December 31, 2011, to address our recommendations and update NASA policy by April 30, 2012. The Acting Assistant Administrator also provided technical comments on the draft, which we incorporated as appropriate.

To ensure that academic training funds are spent judiciously, that eligible employees receive degrees only through the established academic degree training programs, and to strengthen internal controls over academic training, the Acting Assistant Administrator stated that the Office of Human Capital Management (OHCM) agreed to: establish a more comprehensive policy that will incorporate all academic training requests into the Agency academic training approval process; coordinate with the NASA Shared Services Center and the Office of the Chief Financial Officer to determine the most efficient method for tracking academic training expenditures; and coordinate with the Center Training Offices to negotiate discounted tuition rates for civil service employees. The

OHCM said it will also consider our recommendation to develop an Agency position on payment for academic credits based on prior work or life experience and incorporate changes in NASA's Employee and Organizational Development policy as appropriate. We consider the Acting Assistant Administrator's proposed actions to these recommendations responsive and will close these recommendations upon completion and verification of the proposed corrective actions.

The Acting Assistant Administrator partially concurred with our recommendation to require employees to submit official transcripts as proof of satisfactory course completion, agreeing to require official transcripts for formal degree programs, while continuing to accept unofficial transcripts that contain the employee's name, name of the educational institution, course name, course dates, and grade received for courses taken outside formal degree programs. Although we believe that requiring official transcripts for all academic courses would be the best practice, we find the proposed action responsive to the intent of our recommendation and will close the recommendation upon completion and verification of the proposed corrective actions. However, because we found that the Agency has not consistently ensured that unofficial transcripts contain all required information, we urge the Agency to take steps to ensure full compliance with this policy.

The Acting Assistant Administrator took exception to limiting payments per credit hour and instituting caps on reimbursement amounts, stating that "the overriding factor in selecting academic institutions should be relevant technical excellence, not cost per credit hour." We consider management's comments unresponsive to this recommendation. Therefore, this recommendation is unresolved and will be resolved when the Agency agrees to institute caps on the cost of tuition assistance or a similar control that addresses our concern. While we acknowledge that technical excellence should be a factor in selecting a college or university, we do not agree that technical excellence is only attainable at the highest cost institutions. Moreover, financial caps on employee tuition reimbursement are common in the Government and private industry, including among NASA contractors who also employ work forces with a high level of technical expertise.<sup>3</sup>

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<sup>3</sup> For example, the Department of Defense caps cost per credit hour at \$250 and maximum funding per employee at \$4,500 per year.



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## INTRODUCTION

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### Background

NASA offers its employees a variety of training and educational opportunities to complement work experiences and achieve better organizational and individual performance. Given the size of NASA's workforce – over 18,500 civil service employees – this training poses a significant organizational cost. NASA officials estimate that between fiscal years 2006 and 2010, NASA spent approximately \$250 million on employee training. A subset of this total expenditure was for academic training at colleges and universities. Specifically, between July 2006 and September 2010, NASA spent approximately \$17 million for 2,460 civil service employees to attend more than 10,120 academic courses at an average cost of \$6,860 per employee.

NASA pays for academic training at colleges and universities for its employees to enhance individual capabilities and competencies; build and retain a skilled and effective workforce; improve organizational performance; and maintain scientific, professional, technical, and managerial proficiency.<sup>4</sup> NASA defines academic training as a course taken at a nationally recognized and accredited educational institution of higher learning for academic credit. Employees may take individual courses related to their NASA duties or may, at NASA's expense, enroll in a slate of courses to earn an academic degree. NASA may pay for or reimburse an employee for courses taken in pursuit of a degree if the degree will contribute significantly to meeting an Agency training need or resolving a staffing problem. Federal law prohibits NASA from paying for academic degrees except through planned, systemic, and coordinated employee development programs linked to accomplishing the Agency's strategic goals.<sup>5</sup>

Consistent with Federal law, NASA has established academic degree training programs that allow employees to pursue undergraduate or advanced degrees in NASA mission-related fields such as aeronautical engineering and astronomy. NASA's graduate degree programs are designed to provide employees the opportunity to pursue approved programs of study related to their job functions, needed competencies, and the Agency's strategic goals. Similarly, the undergraduate degree programs are designed to develop the expertise required to accomplish strategic goals and objectives of the various NASA Centers and to provide an internal source of qualified candidates for occupations in which a shortage exists – specifically, where a Center has identified a continuing future need – and an academic degree is a prerequisite for the position. However, NASA guidance

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<sup>4</sup> Training and development in the Federal Government is generally governed by the Government Employees Training Act, 5 U.S.C. Chapter 41. Regulations are contained in 5 C.F.R Part 410. NASA Policy Directive 3410.2F, "Employee and Organizational Development," April 9, 2009, contains additional NASA-specific guidance.

<sup>5</sup> 5 U.S.C. §4107.

does not detail how the Centers should establish or document a staffing shortage in a particular area.

To participate in one of NASA's established formal degree programs that pay for undergraduate and graduate courses, the employee is required to formally apply for acceptance and have specific coursework approved on an annual basis by their respective Center's Training Office. Furthermore, participants are required to achieve minimum grade requirements, maintain acceptable standing with the college or university and NASA for the duration of enrollment in the program, and also commit to a period of continued service with the Agency after completion of their coursework. The number of employees accepted into a formal degree program varies by Center and is contingent on the Center training budget. In addition, the types of degree programs offered varies based on Center priorities. For example, Goddard Space Flight Center identified a need to increase the pool of qualified candidates in its procurement workforce, whereas Kennedy Space Center funds academic degrees in aerospace technology. NASA employees who do not participate in a formal degree program may request to attend academic training on a course-by-course basis, but each course must relate to the employee's current or anticipated duties and generally be approved by their immediate supervisor, directorate Training Coordinator, and the Center Training Office.

Moreover, whether as part of a formal degree program or on a course-by-course basis, NASA is not permitted to pay for training for the sole purpose of providing an employee an opportunity to obtain an academic degree or to qualify for a particular position for which the academic degree is a basic requirement. In other words, NASA cannot spend taxpayer's funds to send employees to college solely to make them better educated or to enable them to qualify for a better paying position within NASA.

NASA funds academic training through annual budget allocations to each Center. In turn, each Center distributes a portion of those funds to the Center Training Office for allocation and use. This funding supports all Center training, including the formal academic degree programs and academic classes taken on a course-by-course basis. Center directorates may supplement this funding with their own operating funds at their discretion.

The Office of Human Capital Management at NASA Headquarters is responsible for general oversight of NASA's training programs. However, day-to-day authority over the programs rests with the individual NASA Centers under the assumption that Center officials are in the best position to know what competencies they require. Accordingly, each Center and Headquarters has a Training Office responsible for determining and allocating training budgets, developing training programs, and approving requests for attendance at external training.

Examples of several established academic training opportunities offered by NASA are described below:

- Goddard Space Flight Center sponsors the Part-Time Graduate Study Program and the Undergraduate Study Program through which employees may pursue academic study that enhances their ability to make significant contributions to the Center. Goddard also sponsors the Procurement Operations Division Undergraduate Degree Program. This program offers employees an opportunity to pursue undergraduate degrees in contracting and procurement fields to increase the pool of qualified candidates for the procurement workforce.
- NASA Headquarters sponsors the Graduate Study Program and the Continuing Education Program. The Graduate Study Program is designed to provide employees an opportunity to pursue approved graduate study programs on a part-time basis while performing their official duties. The Continuing Education Program provides funding for eligible employees to attend approved college courses that relate to a specific career goal.
- Kennedy Space Center sponsors the Kennedy Undergraduate Studies Program under which eligible employees pursue academic degrees in the field of Aerospace Technology. Additionally, the Kennedy Graduate Fellowship Program enables eligible employees to be reimbursed for masters and doctoral courses that help accomplish the Center's strategic goals and objectives.

The NASA Shared Services Center (NSSC) is responsible for processing, procuring, and collecting employee training data, including data related to academic training courses. This data is submitted, tracked, and recorded in an electronic training application known as the System for Administration, Training, and Educational Resources for NASA, or SATERN. Employees initiate the training approval process by entering a request in SATERN. The employee's supervisor, the directorate Training Coordinator, and the Center Training Office must approve all academic training requests. NSSC obligates funds and submits payment for the training after verifying that all required information and approvals have been submitted. Upon completion of the academic course, employees are required to provide a copy of their grade. If the grade does not meet NASA's minimum requirements, NASA may pursue reimbursement of the funds from the employee.

NASA also pays for academic training for contractor employees if such training is part of the company's contract with NASA. Academic training costs are included in a contractor's overhead account as part of employee fringe benefits. The overhead account includes not only academic training but also other employee benefits such as medical benefits, life insurance, state and federal taxes, childcare, retirement, and stock options.

The Federal Acquisition Regulation (FAR) governs whether particular costs are allowable in Government contracts. With respect to a contractor paying for academic training for employees, the FAR provides that the cost of training and education related

to the field in which the employee is working or may reasonably be expected to work are allowable.<sup>6</sup> Additionally, the FAR specifies that a cost is reasonable if, in its nature and amount, it does not exceed that which a prudent person in the conduct of competitive business would incur.<sup>7</sup>

## Objective

The objective of our audit was to examine NASA's controls over its academic training program. In particular, we reviewed whether costs are reasonable, if courses relate to employees' duties and the Agency mission, and if controls are in place to ensure effective management of academic training expenditures. To conduct our audit, we reviewed relevant documentation and interviewed staff at NASA Headquarters, the NSSC, and four NASA Centers. See Appendix A for details of the audit's scope and methodology, our review of internal controls, and a list of prior audit coverage.

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<sup>6</sup> FAR pt. 31.205-44, Training and Education Costs.

<sup>7</sup> FAR pt. 31.201-3, Determining Reasonableness.

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## **NASA LACKS APPROPRIATE CONTROLS OVER ITS ACADEMIC TRAINING**

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NASA lacks the internal controls necessary to properly monitor and execute its academic training program. As a result, NASA paid \$1.44 million for 57 employees at Headquarters and the four Centers we tested to obtain academic degrees outside of its established program that requires formal application and approval. At least one of these employees had applied for acceptance into a formal degree program and was rejected. Because these employees bypassed NASA's formal degree programs, they were not required to sign continued service agreements with the Agency and therefore had no obligation to continue to work for NASA despite the Agency's substantial investment in their educations. Moreover, without a formal review and approval of their academic plans, NASA may be funding a course of study for these employees that is not aligned with the Agency's priorities. We also found that, unlike other Federal agencies, NASA generally does not limit the amount of money it will pay for each employee's academic training or the amount it will reimburse per academic credit. Nor does NASA policy address payment for credits based on life or work experience. We also found instances in which NASA paid for employee academic training without adequate documentation of course completion. In addition, NASA could not identify the total amount it spent providing academic training to civil service employees. Finally, although Center training officials approve all training requests, they do not have authority over the use of directorate funding or insight into the appropriateness of particular training requests. Consequently, NASA's academic training program is vulnerable to abuse.

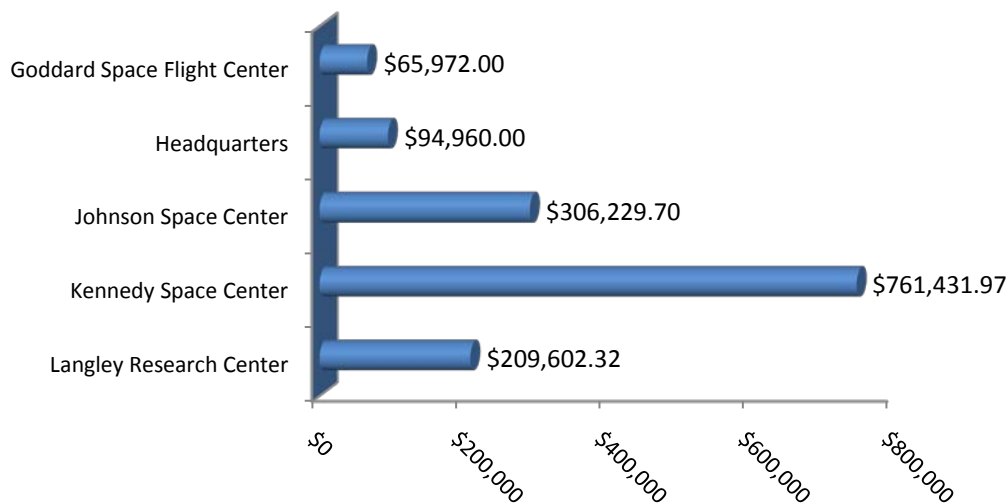
### **NASA Employees Are Circumventing Established Programs to Obtain Academic Degrees**

NASA is paying for employees to obtain academic degrees outside of the Agency's established academic degree programs. We identified 57 employees at Headquarters and the four Centers we visited – Goddard, Johnson, Kennedy, and Langley – who are pursuing or have obtained academic degrees outside of NASA's established degree programs at a cost to the Agency of \$1.44 million (see Figure 1). For 18 of those 57 employees, NASA paid over \$30,000 per employee for academic courses, while one employee received over \$60,000.

Under Federal law and NASA policy, the Agency may pay for or reimburse employees for the cost of an academic degree only as part of an Agency employee development program linked to accomplishing the strategic goals of the Agency. Moreover, the course of study must contribute significantly to meeting an identified Agency training need or

resolve a staffing problem.<sup>8</sup> Furthermore, the Agency cannot use taxpayer's funds for the sole purpose of providing an employee an opportunity to obtain an academic degree or qualify for appointment to a particular position. Headquarters and each of the four Centers we visited have established formal academic degree programs for employees to obtain advanced degrees. In addition, Goddard and Kennedy have implemented academic degree programs for employees to pursue undergraduate degrees.

**Figure 1. Expenditures for the 57 NASA Employees Pursuing Degrees Outside of Established Programs at Headquarters and the Four Centers Reviewed**



To test whether employees who either did not apply or were not accepted into formal degree programs were actually pursuing degrees, we judgmentally selected 40 academic courses taken by 37 NASA employees, such as religion and humanities courses, that did not appear related to NASA's mission. We then met with Center Training Officials, directorate training coordinators, and the supervisors of the employees to determine whether the courses we identified related to the employees' job functions and NASA's mission. We determined that 3 out of 37 employees from this sample were attending courses unrelated to their job functions and therefore appeared to be pursuing college degrees outside of NASA's established degree programs.

Based on these results, we expanded our testing to all academic courses attended by NASA employees at Kennedy, Johnson, Goddard, Headquarters, and Langley between July 2006 and September 2010. We removed from this data set all civil service personnel participating in established degree programs. From this smaller group we identified all employees who had taken eight or more courses with a total cumulative cost of at least \$15,000. This resulted in our identification of an additional 54 employees who were not participating in the formal academic degree programs offered by their Centers but were

<sup>8</sup> 5 U.S.C. §4107.



nevertheless pursuing academic degrees. We believe this figure is conservative as we only performed detailed testing at four NASA Centers and Headquarters. Had we reviewed all NASA Centers, we believe this number would be substantially higher.

We found that NASA managers were permitting employees to circumvent NASA's formal degree programs by using program or directorate funds to finance individual classes on a course-by-course basis in pursuit of an academic degree. Center Training Officials told us they have historically lacked authority to question courses taken with program or directorate funds because they are not responsible for such funding. The Center-based Training Office's only visibility over academic training paid for with program or directorate funds is approving training requests in SATERN on a course-by-course basis. The Center Training Office has limited visibility of an employee's complete body of academic work, and in most cases will approve academic training if the course is first approved by the directorate and generally appears related to the employee's official duties. Moreover, Center Training Officials said they generally rely on employees' supervisors to ensure that academic courses relate to employees' official duties.

Several approving officials who had approved courses outside of formal degree programs told us they felt pressure to do so from senior management. One official readily admitted that there was no alignment between the academic courses the employees we identified had taken and the critical needs of the Center or NASA as a whole. In addition, officials told us that in some instances individual academic training courses were approved and paid for by NASA after the employees were denied entry into NASA's established academic degree programs. Indeed, we identified one employee in our sample who had been rejected for participation in a formal degree program yet NASA paid for eight academic courses over a 2-year period.

Center Training Officials claimed that several of the employees we identified had obtained their degrees as a by-product of attending multiple single courses related to their official duties. However, several factors lead us to believe these employees were actively pursuing degrees. First, as noted above, 54 of the 57 individuals we identified attended at least eight courses at a single institution between July 2006 and September 2010 at a cost to NASA of over \$15,000 each. Second, some of these employees took courses like College Mathematics, English Composition, and Introduction to Philosophy that do not appear to be related to their official duties. While we understand that such classes may be prerequisites to a degree and therefore might be paid for by NASA as part of a formal degree program, we do not believe they qualify for reimbursement on a stand-alone basis. Similarly, NASA paid for 39 thesis project or dissertation courses for a total cost of \$101,347 for 16 individuals who were not participating in a formal degree program. Again, a thesis or dissertation is a requirement of a degree program and is therefore, in our judgment, an indication that the employee was seeking an advanced degree.

To illustrate the types of degrees employees pursued outside of formal programs, we list several examples and include the cost to NASA between July 2006 and September 2010:

- A secretary at Headquarters pursued a bachelor's degree in business administration at Strayer University at a cost to NASA of \$37,025. Unlike some other Centers, NASA Headquarters has no formal program under which Headquarters-based employees can be reimbursed for pursuing an undergraduate degree.
- A secretary at Johnson Space Center pursued a bachelor's degree in business administration at the University of Phoenix at a cost to NASA of \$13,770. Like NASA Headquarters, Johnson Space Center has no formal undergraduate degree programs.
- A management and program analyst at Kennedy Space Center obtained a master of science degree in software engineering from the Florida Institute of Technology at a cost to NASA of \$18,240.
- A program analyst at Kennedy Space Center obtained a master of arts degree in human resources management at Webster University at a cost to NASA of \$15,705.

By funding academic degrees outside of its established programs, NASA is violating Federal law and its own requirements that such funding must be part of a planned, systemic, and coordinated Agency employee development program linked to accomplishing the Agency's strategic goals. Moreover, NASA has no assurance that degrees funded outside of its formal programs will contribute, as required by Federal law, to meeting an identified training need or resolving an identified staffing problem.

**Continued Service Agreements.** A continued service agreement commits an employee to working for NASA for a pre-established period in exchange for Agency funded training or education. NASA employees who attend any training course that takes more than 80 hours to complete are required to accept a continued service agreement. If the employee voluntarily leaves NASA before completing the service obligation, the employee must repay NASA all or some of the costs of the training. According to Agency policy, NASA may waive its right to recover the money if repayment would be against equity and good conscience or is in the public interest.

NASA generally does not require a service commitment from employees who take individual academic courses that take less than 80 hours. Conversely, employees in NASA's formal degree programs are generally required to sign a service commitment obligating them to stay with the Agency for at least 1 year after obtaining an undergraduate degree and 3 years after obtaining a graduate degree. Employees who pursue academic degrees at NASA's expense outside of NASA's formal programs avoid the continued service commitment required of their counterparts in the formal programs.

We identified two employees who attended 16 academic training courses outside of a formal program and left the Agency within 6 months of completing their last course. One employee at Kennedy transferred to another Federal agency after attending 10 courses at Embry Riddle Aeronautical University over a 2-year period at a cost of approximately \$10,000. We compared the courses taken by this employee to the graduate degree programs offered by the University. Nine of the 10 courses were part of the core requirements for a master's degree in aeronautical science. The remaining course was titled "Methods and Procedures for the Graduate Capstone Project." Another employee at Johnson resigned from the Federal Government after attending six courses over a 1-year period at Capella University at a cost to NASA of approximately \$12,000. These courses consisted of the core requirements for a doctorate degree in leadership. Based on our analysis, we believe both of these employees were pursuing graduate degrees at NASA's expense outside of the Agency's formal program. Because neither employee signed a 3-year service commitment that is typically required of graduate degree program participants, we question the benefit to NASA of providing \$22,000 in tuition reimbursements to these former employees.

We verified with the Center Training Offices that none of the 57 employees we identified as working toward academic degrees outside of NASA's established degree programs had signed continued service agreements for the degree. Had these employees pursued their degrees through the established programs, a continued service agreement would have been required. Without a commitment by these employees to continued service or repayment, NASA's \$1.44 million investment is at risk.

Because it is unclear what benefit NASA received for its \$1.44 million investment in these employees, we question the Agency's expenditure of these funds (see Appendix C for a Schedule of Questioned Costs). In addition, because this \$1.44 million figure only represents tuition payments for a sample of employees at Headquarters and the four Centers where we conducted detailed audit work, we believe an examination across all NASA Centers likely would result in substantially higher questioned costs.

### **NASA Cannot Identify the Total Cost of Providing Academic Training to Its Civil Service Employees**

NASA does not know how much it spends on academic training for civil service employees. The Workforce Management and Development Division, Office of Human Capital Management, NASA Headquarters is responsible for general oversight of NASA's training program. However, overall training budgets are provided as part of each Center's operating budget and these funds are distributed to the Center Training Office for allocation and use. Accordingly, the Workforce Management and Development Division does not centrally manage NASA's academic training programs and has little oversight of academic training expenses or activities from an Agency-wide perspective. Moreover, because individual directorates at the Centers can subsidize training funds with program funds, control over training funds is further decentralized.

Compounding the problem, NASA does not separately track academic training expenditures in its financial system. Currently, only overall training expenses are recorded, and the Agency has no way to separate an academic training expenditure from other types of training. Although academic training requests (including estimated costs) are separately tracked in SATERN, SATERN was not designed as a financial system and does not track actual expenditures. Accordingly, the figures attributed to academic training in SATERN do not necessarily reflect the amount NASA actually expended. After the training has taken place, NASA manually reconciles the figure reported in SATERN with actual expenditures. However, the lack of an automated reconciliation process increases the likelihood that the SATERN data is inaccurate.

Nevertheless, NASA relies on the data in SATERN to report employee training information to the Office of Personnel Management. Accordingly, we used this data to estimate that NASA spent approximately \$17 million on employee academic training between July 2006 and September 2010.

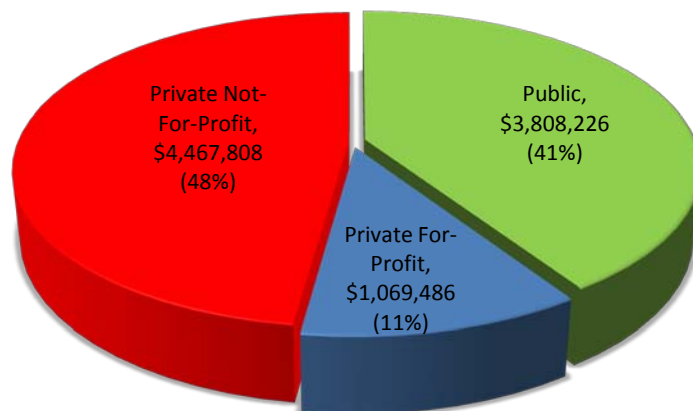
### **NASA Has Not Structured Its Academic Training Program to Maximize Potential Savings**

NASA neither caps tuition rates nor places an annual spending limit per employee on academic training. As a result, NASA employees have no incentive to seek academic training from less expensive public educational institutions and instead often attend more expensive private or for-profit universities.

The cost of academic training varies depending on a number of factors including the specific course of study, the type of institution attended, and whether employees are attending college courses as part of an established academic degree program or on a class-by-class basis. For example, one employee at Langley pursued a doctorate degree through the Center's full-time, graduate study program at the Georgia Institute of Technology at a total cost to NASA of \$140,000. Likewise, through the formal degree program at Kennedy an employee pursued a master's of science degree at the Massachusetts Institute of Technology at a total cost of \$74,000. Conversely, NASA paid \$3,020 for a Dryden employee to attend a graduate level Accounting Information Systems course at a for-profit institution and \$1,284 for a Headquarters employee to attend a similar course at a public institution.

As previously discussed, we determined that NASA spent approximately \$17 million for 2,460 employees to attend 10,120 academic training courses between July 2006 and September 2010 at an average cost of \$6,860 per employee. We identified the top 20 universities attended by NASA employees based on the amount of tuition paid and found that 11 of the top 20 universities attended were private or for-profit institutions (see Figure 2 and Table 1).

**Figure 2. Categories of the Top 20 Institutions, by Expenditure, Attended by NASA Civil Service Personnel July 2006-September 2010**

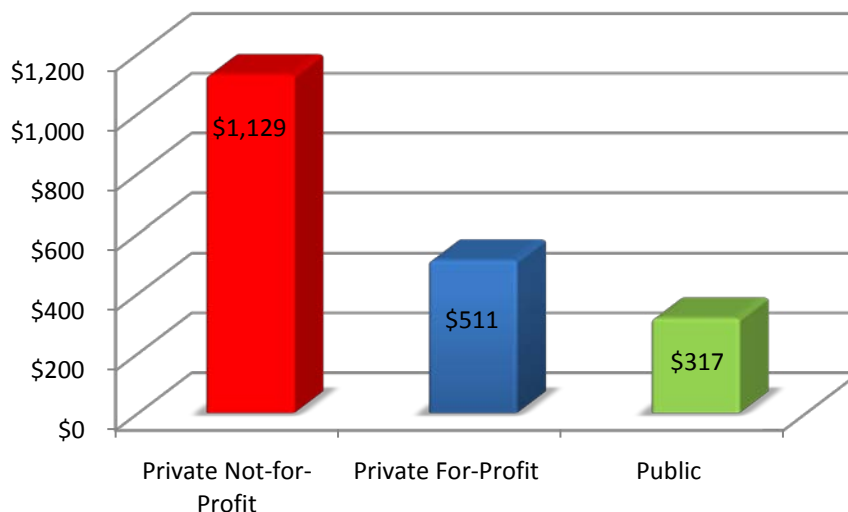


**Table 1. Top 20 Institutions, by Expenditure, Attended by NASA Civil Service Personnel July 2006-September 2010**

Institution	Type	Expenditures FY 2006-2010
University of Alabama at Huntsville	Public	\$708,236
Johns Hopkins University	Private Not-for-Profit	\$666,219
Stevens Institute of Technology	Private Not-for-Profit	\$644,171
Stanford University	Private Not-for-Profit	\$593,994
University of Maryland University College	Public	\$593,739
Florida Institute of Technology	Private Not-for-Profit	\$592,210
University of Phoenix	Private For-Profit	\$589,866
George Washington University	Private Not-for-Profit	\$564,617
Georgia Institute of Technology	Public	\$529,079
Case Western Reserve University	Private Not-for-Profit	\$480,285
Strayer University	Private For Profit	\$479,620
University of Southern California	Private Not-for-Profit	\$455,542
University of Central Florida	Public	\$430,586
University of Houston at Clear Lake	Public	\$396,922
University of Maryland	Public	\$356,192
University of Florida	Public	\$337,106
Cleveland State University	Public	\$247,085
Embry-Riddle Aeronautical University	Private Not-for-Profit	\$236,511
Massachusetts Institute of Technology	Private Not-for-Profit	\$234,259
Purdue University	Public	\$209,281
<b>Total</b>		<b>\$9,345,520</b>

We determined the tuition rates for graduate and undergraduate studies for each of these institutions for the fall 2010 or spring 2011 sessions. Using these tuition rates, we calculated an average rate for each university by adding their graduate and undergraduate rates together and dividing by two. We then grouped all of the average rates calculated by category (public, private for-profit, or private not-for-profit) to get an average rate per category and compared the three categories.<sup>9</sup> By comparing the average rate per category, we determined that the average cost per credit hour for private not-for-profit universities and private for-profit universities were 3.6 times and 1.6 more expensive, respectively, than public universities. Based on these calculations, for every credit hour paid by NASA at a private not-for-profit university or private for-profit university, the Agency could have paid for 3.6 or 1.6 credits, respectively, at a public university (see Figure 3).

**Figure 3. Average Tuition Rate, per Credit, at the Top 20 Institutions, by Expenditure, Attended by NASA Civil Service Personnel**



In addition, we found that the Agency funded multiple academic degrees for nine employees. Six of these employees pursued an undergraduate degree followed by a graduate degree, while the other three employees pursued both a master's and a doctorate degree at a total cost of \$136,284 for all nine employees.

Other Federal agencies place limits on the tuition assistance available to employees. For example, the Department of Defense (DOD) caps cost per credit hour at \$250 and maximum funding per employee at \$4,500 per year. By instituting similar caps, NASA could provide academic training to more employees or possibly save a significant amount of money over time.

<sup>9</sup> For example, the rates per credit hour at the University of Alabama at Huntsville are \$344 (undergraduate) and \$514 (graduate). We added \$344 and \$514 and divided by 2 to determine an average per-credit tuition rate of \$429 for this university.

**NASA Is Not Leveraging Its Economies of Scale to Obtain Discounts at Private or For-Profit Universities.** NASA is not consistently seeking opportunities to obtain discounted tuition rates at the private and for-profit universities most frequently attended by its employees and contractors. Consequently, the Agency may be paying higher tuition rates than necessary. For example, between 2006 and 2010 NASA civil service personnel and employees at two of NASA’s prime contractors spent approximately \$2 million to attend courses at the Florida Institute of Technology. The school currently offers discounts ranging from 5 to 10 percent off the cost of tuition through their “cohort” program. Had NASA and the contractors worked together to negotiate an agreement with the university, NASA and its contractors could have saved from \$100,000 to \$200,000 in tuition costs. In contrast, Goddard entered into Space Act Agreements with two for-profit universities to leverage a 5 percent discount on academic training for civil service personnel.<sup>10</sup> Because NASA does not track academic training expenditures or universities attended from an Agency-wide perspective, NASA is missing opportunities to leverage tuition discounts and stretch its training dollars.

### **NASA Policy Silent on Academic Credit for Life or Work Experience**

At some colleges and universities, students can receive academic credit based on their life experiences, their professional training, or licenses or certificates they already hold. Some institutions will grant as many as 30 such life or work experience credit hours toward an undergraduate degree without testing. In such cases, employees are not acquiring new information, skills, or expertise but instead receive credit for skills they already possess. While we did not identify any NASA civil service personnel who may have received life or work experience credits at NASA’s expense, at least two of the universities most frequently attended by NASA employees offer these credits.

NASA’s policy is silent on the issue of payment for credits for prior life or work experience. However, NASA Headquarters training officials expressed the view that such credits may be cost effective by helping an employee complete his or her degree in a shorter timeframe. Outside of pursuing an academic degree, it is unclear how earning these types of credits enhances employee performance or the Agency’s mission. The lack of policy combined with the weak internal controls that permitted 57 employees to obtain degrees outside of formal programs suggest that it is also possible that NASA may be paying for these credits outside of formal degree programs. In our judgment, NASA should provide clear guidance to define when the Agency will pay for such credits. Further, Center Training Offices should perform a thorough review of these credits to ensure that payment for this purpose is the best use of academic training funds.

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<sup>10</sup> NASA uses Space Act Agreements with people and organizations in the private and public sector to advance NASA program objectives. The Agreements establish a set of legally enforceable promises between NASA and the other party.

## **Grades Were Not Consistently Supported by Appropriate Documentation**

NASA policy states that the Agency will only pay for academic coursework that is successfully completed. For undergraduate courses this means a grade of “C” or better and for graduate courses a grade of “B” or better.<sup>11</sup> Employees are expected to repay the Agency if they do not obtain a passing grade or fail to complete the course. To show successful course completion, employees are required to submit a copy of their transcript, report card, or Internet screen capture of the online grade record within 20 days of course completion.

We reviewed 97 randomly selected training requests to determine whether employees had met NASA’s requirements for grade reporting. Of the 97 records we tested, NASA was able to provide supporting grade submissions for 90 courses. However, NASA was unable to provide evidence of grade submissions to support the other seven requests, even though the Agency paid a total of \$8,555 for six of the seven courses.<sup>12</sup> Based on our statistical projections, we estimate that during the timeframe of our audit, NASA paid \$892,490 in tuition costs without proper documentation of course completion. (See Appendix B for the Sampling Methodology and Projection of Results and Appendix C for a Schedule of Questioned Costs.)

Moreover, for the 90 cases in which grades had been submitted, we question the reliability of some of the evidence accepted by NASA. The majority of the 90 submissions consisted of Internet screen captures from university websites, many of which did not include identifying information such as employee name or university attended. By accepting such unofficial records, NASA risks paying for courses that were not successfully completed. For example, in 2009 the OIG obtained a criminal conviction of a NASA contractor employee who altered a grade document in order to obtain payment for classes she had not successfully completed. See Appendix D for examples of grade submissions accepted by NASA.

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<sup>11</sup> NASA Policy Directive 3410.2F, “Employee and Organizational Development,” April 9, 2009.

<sup>12</sup> NASA was unable to determine whether it had paid for the seventh course.



## **Recommendations, Management's Response, and Evaluation of Management's Response**

We recommended that the NASA Assistant Administrator for Human Capital Management:

**Recommendation 1.** Require that, prior to granting final approval of academic training, Center Training Offices assess the appropriateness of all academic training requests to ensure that employees obtain academic degrees only through established academic training programs.

**Management's Response.** The Acting Assistant Administrator for Human Capital Management concurred with our recommendation and stated that the Office of Human Capital Management (OHCM) will coordinate with the Center Training Offices to establish a more comprehensive policy which will incorporate all academic training requests into the Agency academic training approval process and help ensure that academic training is in alignment with Agency mission objectives.

**Evaluation of Management's Response.** Management's proposed actions are responsive to the intent of the recommendation; therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed action.

**Recommendation 2.** Establish a centralized mechanism for tracking the Agency's academic training expenditures.

**Management's Response.** The Acting Assistant Administrator concurred, stating that OHCM will coordinate with the NASA Shared Services Center and the Office of the Chief Financial Officer to determine the most efficient method for tracking academic training expenditures.

**Evaluation of Management's Response.** Management's proposed actions are responsive to the intent of the recommendation; therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed actions.

**Recommendation 3.** Limit payment of academic tuition per credit hour, implement a cap on the total amount an employee may receive for academic training during any given year, and establish a formal approval process for consideration of exceptions.

**Management's Response.** The Acting Assistant Administrator did not concur with our recommendation, stating that "the overriding factor in selecting academic institutions should be relevant technical excellence, not cost per credit hour." However, the Acting Administrator also stated that OHCM will utilize the policy changes made in response to Recommendation 1 to ensure that NASA is procuring academic training that best meets the needs of the Agency and that, when reviewing academic training requests, Center Training Offices will consider school quality, best value for the Government, and whether courses are available at a lower-cost institution. In addition, OHCM said it will

benchmark other Government agencies and private companies to determine best practices in this area.

**Evaluation of Management's Response.** We consider management's comments unresponsive to this recommendation. Therefore, this recommendation is unresolved and will be resolved when the Agency agrees to institute caps on the cost of tuition assistance or a similar control that addresses our concern. While we acknowledge that technical excellence should be a factor in selecting a college or university, we do not agree that technical excellence is only attainable at the highest cost institutions. Moreover, while applying the policy changes referenced in management's response to Recommendation 1 should help ensure that academic courses are aligned with NASA's mission, the proposed action does not address the cost of these courses.

Instituting financial caps on employee tuition reimbursement is common in the Government and private industry. As part of our audit, we benchmarked tuition reimbursement practices at the Department of Defense, which caps cost per credit hour at \$250 and maximum funding per employee at \$4,500 per year. We also reviewed the practices of three large businesses with NASA contracts totaling over \$1 billion. Each of these private companies provides space-related services and products to NASA that require high levels of technical expertise. Yet each of these businesses limits the amount it will reimburse employees for academic training either by calendar year or by credit hour. By instituting similar caps, NASA could provide academic training to more employees or possibly save a significant amount of money over time.

**Recommendation 4.** Develop a mechanism to leverage the size of NASA's civil service and contractor workforce to negotiate discounted tuition rates at private or for-profit universities.

**Management's Response.** The Acting Assistant Administrator concurred, stating that OHCM will coordinate with the Center Training Offices to negotiate discounted tuition rates for civil servant employees. However, he noted that in the past such negotiations have sometimes been unsuccessful because Centers could not meet the guaranteed minimum number of enrollments the institutions required.

**Evaluation of Management's Response.** Management's proposed actions are responsive to the intent of the recommendation; therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed actions. We believe that the decentralized nature of NASA's academic training program, including the lack of centralized reporting on total expenditures or institutions attended, may have contributed to the difficulty the Agency has experienced in past attempts to negotiate discounts. Implementing Recommendation 2 should provide the Agency with the information necessary to overcome some of these obstacles. In addition, we suggest that NASA involve the NSSC in this process, as the negotiation of discounts for employee training is one of the services NSSC provides to NASA.

**Recommendation 5.** Establish the Agency's position on the payment of college credits earned for life or work experience and the criteria for such payment.

**Management's Response.** The Acting Assistant Administrator concurred and stated that OHCM will examine the issue and incorporate any necessary changes into NASA policy.

**Evaluation of Management's Response.** Management's proposed actions are responsive to the intent of the recommendation; therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed actions.

**Recommendation 6.** Require employees to submit official transcripts to document successful course completion.

**Management's Response.** The Acting Assistant Administrator partially concurred, stating that although OHCM agrees with the intent of this recommendation, it does not believe the "expense and extra logistics" of obtaining an official transcript should be required for all courses. The Acting Administrator proposes that an official transcript only be required at the culmination of a degree program and that for individual courses the Agency continue to require unofficial transcripts and/or grade reports that include the employee's name, name of the educational institution, course name, course dates, and grade received.

**Evaluation of Management's Response.** The Acting Assistant Administrator partially concurred with this recommendation, and instead proposed requiring official transcripts only for degree programs. Although we believe that requiring official transcripts for all academic courses would be the best practice, we consider the Agency's proposed action to be responsive to our recommendation provided that the Agency also takes steps to ensure compliance with its existing policy that unofficial transcripts and/or grade reports be provided prior to payment and include the employee's name, name of the educational institution, course name, course dates, and grade received. As noted in the report, we found instances in which payment was made by the Agency in the absence of complete information. Nevertheless, the recommendation is resolved and we will close the recommendation upon completion and verification of this corrective action.

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## NASA HAS LIMITED OVERSIGHT OF ACADEMIC TRAINING PROVIDED TO CONTRACTOR EMPLOYEES

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NASA funds academic training for contractor employees if the cost is negotiated as part of the company's contract with NASA. However, we found NASA provides no oversight of academic training provided to its contractor employees. The FAR provides that the "cost of training and education that are related to the field in which the employee is working or may reasonably be expected to work are allowable," but NASA contracting officers have no knowledge of the types of academic training attended by contractor employees or their associated costs.

### Oversight of Contractor Academic Training

NASA funds academic training for contractor employees by reimbursing tuition costs included in the contractor's overhead account as part of employee fringe benefits. On NASA's behalf, the Defense Contract Management Agency (DCMA) negotiates the overhead costs with audit support from the Defense Contract Audit Agency (DCAA). These costs must comply with the FAR to be allowable. According to the FAR, to be an allowable cost the training must relate to the field in which the employee is working or may reasonably be expected to work and must not exceed that which would be incurred by a prudent person in the conduct of competitive business.<sup>13</sup>

During the initial phase of the audit, we reviewed academic training at United Space Alliance, a large NASA contractor. In addition, we judgmentally selected two other NASA contractors, Alliant Techsystems and Wyle Laboratories. The value of these three companies' contracts with NASA exceeds \$1 billion. Each of the contractors provided us with their tuition assistance policy, internal audits conducted on academic training, and information concerning academic training attended by their employees who worked on NASA contracts between fiscal years 2006 and 2010. Based on our analysis of the data, we determined that the three contractors spent a total of \$24 million to provide academic training for their employees during this period. Specifically:

- United Space Alliance spent \$18,754,983 for 2,109 employees to attend academic courses at an average cost of \$8,893 per employee.<sup>14</sup>
- Alliant Techsystems spent \$5,118,601 for 597 employees to attend academic courses at an average cost of \$8,574 per employee.

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<sup>13</sup> FAR 31.205-44, Training and Education Costs and FAR 31.201-3, Determining Reasonableness.

<sup>14</sup> United Space Alliance provides employees with a onetime cash award for completion of a degree.

- Wyle Laboratories spent \$207,271 for 63 employees to attend academic courses at an average cost of \$3,290 per employee.

Similar to our examination for NASA civil service employees, we identified the top 20 institutions attended by employees at United Space Alliance and Alliant Techsystems (Wyle Laboratories provided information on classes attended but not by institution). We determined that, like civil service personnel, these contractor employees are attending private and for-profit institutions at a higher rate than public institutions. For example, for employees of one contractor, 15 of the top 20 institutions attended were private or for-profit, while for employees of the second contractor, 12 of top 20 institutions attended were private or for-profit. As demonstrated with the civil service workforce, the cost of attending a private or for-profit institution is significantly higher than that of a public institution.<sup>15</sup>

While NASA contracting officers do not review and approve the rate for overhead costs, they have the authority to enter into, administer, and terminate contracts and make related determinations and findings. NASA contracting officers are also responsible for ensuring performance of all necessary actions for effective contracting, ensuring compliance with the terms of the contract, and safeguarding the interests of the United States in its contractual relationships. However, we found that NASA is not reviewing contractor academic training costs, even on a sample basis, to determine if the costs are reasonable or if the courses taken relate to the field in which the employee is working. Instead, NASA contracting officers rely on annual “incurred cost audits” conducted by DCAA to determine whether contractors comply with the FAR.

However, relying solely on DCAA audits is problematic because these audits do not test all contractor costs on a consistent basis and do not necessarily compare the costs of courses at a private or for-profit institution to the costs for the same courses at a public university. Further, a DCAA representative told us that DCAA has not audited academic training costs because, in relation to the overall employee fringe benefit account, these costs were not significant enough to warrant a detailed review. As a result of our inquiry, DCAA has included academic training in its incurred cost audit of one of the contractors we identified. DCAA has not yet released the results of its audit.

We also determined that United Space Alliance and Alliant Techsystems reimbursed employees for college credit earned for prior life or work experience. From fiscal years 2006 through 2010, United Space Alliance provided \$112,079 in tuition reimbursement for this type of college credit. While we were unable to determine the total costs incurred at Alliant Techsystems, the company’s policy states that “life experiences earning credit and tests in lieu of courses are reimbursable, if part of an approved degree program.” As discussed previously, employees earning credits for life learning or experience are not

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<sup>15</sup> However, unlike NASA’s rules for its civil service employees, each of the three contractors we examined limits the amount of tuition reimbursement available to its employees to a set sum either by calendar year or per credit hour in their corporate policy.

acquiring new information, skills, or expertise, but are rather receiving college credit for skills they already possess. It is unclear how credits awarded for prior experience and without classroom attendance enhance job capabilities, improve employee performance, or meet the requirements of the FAR.

We are not making any recommendations in relation to contractor academic training. Instead, we are providing this information to NASA to make the Agency aware of the issues we identified during our audit. We encourage NASA to consider this information during future reviews of contractor activities.

## Scope and Methodology

We performed this audit from October 2010 through August 2011 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.

We performed work at NASA Headquarters, the NASA Shared Services Center (NSSC), and four NASA Centers: Goddard Space Flight Center, Johnson Space Center, Kennedy Space Center, and Langley Research Center.<sup>16</sup> We interviewed NASA Chiefs, Leads, and Specialists within the Workforce Management and Development Division, the Human Resources Development Divisions, and contractor employees within the Center Training Offices to learn about academic training programs, processes, budgets, expenditures, and the controls over each. We also interviewed Directorate Training Coordinators and Supervisors at each of the NASA Centers to determine how the processes and program controls were implemented. For information related to NASA contractors, we interviewed NASA officials within the Office of Procurement including Contracting Officers and Specialists who oversee the three contracts reviewed. We also interviewed representatives from the Defense Contract Management Agency and the Defense Contract Audit Agency.

In order to test NASA's controls over the academic training, we obtained the universe of academic training data from July 2006 through September 2010 from SATERN. This universe contained all academic training taken by NASA employees and funded through employee reimbursement or direct payment to the institution using NASA appropriations. This universe of data is the basis for the testing, analysis, and summaries of NASA employee academic training presented in this report. We used a random sample to select 97 training records for testing (see Appendix B for Sampling Methodology and Projection of Results). We obtained a copy of the original Authorization, Agreement & Certification of Training Form, SF-182, from NSSC and verified that the information on the SF-182 matched the information included in the universe of academic training during the timeframe of the audit. The SF-182 requires three levels of approval prior to being submitted to the NSSC: "Initial Approval" which is normally the first line supervisor, the

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<sup>16</sup> The headquarters location in Washington, DC operates as a Center in terms of providing academic training to employees' duty stationed at that location but also serves as the Headquarters office for Agency-wide training. For the purposes of this audit, we reviewed the process for providing academic training to Headquarters employees the same as for other NASA Centers.

“Training Coordinator” approval, each Directorate normally has one person that performs this duty, and the “Training Office” approval, which is performed by the Center Training office. We interviewed individuals included in this approval process for each item tested. We also traced grade submissions to SATERN to verify that grades were submitted and properly recorded.

To evaluate NASA’s funding of contractor academic training, we obtained a universe of academic training data from three NASA contractors each with a total award value over \$1 billion. These three individual universes totaled \$24 million expended on academic training taken by contractor employees working specifically on NASA contracts for the period of October 2005 through September 2010. These universes are the basis for the testing, analysis, and summaries of NASA contractor academic training presented in this report.

We researched multiple college and university websites to determine their undergraduate and graduate tuition rates and the training curriculum for various degree programs. We also met with admissions officers at two institutions located near a NASA Center to obtain information on the admissions process and standards.

We reviewed Federal laws and regulations and NASA policies related to training for civil service personnel and contractor employees. We also reviewed the following as applicable to our audit objectives:

### **Federal Laws, Regulations, Policies, and Guidance**

Government Employees Training Act of 1958, as amended  
United States Code, Title 5, Part III, Subpart C, Chapter 41, “Training”  
Code of Federal Regulations, 5 C.F.R. 410, “Training”  
OPM Guide for Collection and Management of Training Information, August 2008  
OPM Fact Sheet on Continuing Service Agreements, September 4, 2009  
Federal Acquisition Regulation 31.201-3, “Determining Reasonableness”  
Federal Acquisition Regulation 31.205-44, “Training and Education Costs”

### *NASA Policies and Procedures*

NPD 3410.2F, “Employee and Organizational Development,” April 9, 2009  
NSSC-HR-SDG-0019 (Revision A), “Registration-Reimbursement for External Training Service Delivery Guide,” May 31, 2007  
SATERN Rules and Process Guide for Administrators (Version 2.0), December 2009  
NASA Workforce Planning Desk Guide Version 2, September 2008  
KSC-UG-1104 (Revision C), “Kennedy Space Center Training & Organizational Development Information Guide,” September 1, 2010



NASA Personnel Bulletin 2007-24-DM, "Passing Grades and Recordkeeping for Academic Courses," May 30, 2007

**Use of Computer-Processed Data.** To assess the reliability of the NASA's academic training data between July 2006 through September 2010, we (1) reviewed the System for Administration, Training, and Educational Resources for NASA (SATERN) administration manual, (2) reviewed the query parameters used to extract the data universe of academic training from SATERN, (3) randomly selected a sample of 97 training records to test and verify completeness and accuracy of the data, and (4) interviewed agency officials. We determined that the computer-based data obtained through the course of the audit is sufficiently reliable for the purposes of this report.

## Review of Internal Controls

We reviewed and evaluated the internal controls associated with established academic degree training programs, individual academic course approvals, academic training expenditures, and grade documentation. We found internal control deficiencies as discussed in this report. Our recommendations, if implemented, should correct the weaknesses we identified.

## Prior Coverage

During the last five years, the NASA Office of Inspector General has not issued any reports related to NASA's tuition assistance; however, the U.S. Government Accountability Office (GAO) issued one report related to the subject of this report. Unrestricted reports can be accessed at <http://www.gao.gov>.

**GAO 11-300, "DoD Education Benefits: Increased Oversight of Tuition Assistance Program is Needed," March 1, 2011.** GAO reported on DoD's oversight of schools receiving tuition assistance funds and the extent to which DoD coordinates with accrediting agencies and the U.S. Department of Education in its oversight activities. In accordance with DOD policy, tuition assistance covers up to \$250 per credit hour, with a maximum of \$4,500 per year. In order to receive tuition assistance funds, DOD requires postsecondary institution to be accredited by an agency recognized by Education. Tuition assistance funds are paid directly to schools and if service members do not meet grade point average requirements or complete their courses, service members are responsible for paying back the money for these courses.

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## SAMPLING METHODOLOGY AND PROJECTION OF RESULTS

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For this audit, we used the attribute sample design with the method of selection being simple random sample. We selected 97 academic training requests from a universe of 10,120 academic training courses attended by NASA civil service personnel from July 2006 through September 2010. The value of the universe of academic training courses totaled \$16,875,078. We performed two substantive tests to determine whether (1) grades were properly documented; and (2) the grade submitted met NASA's grade requirements. Based on our analysis of documentary evidence, we determined that NASA had supporting grade submissions for 90 courses that met the grade requirements; however, seven grade submissions were missing. We validated that NASA paid for six of the seven courses totaling \$8,554.50 without documentation that the employee met the grade requirement; NASA was unable to determine whether a \$378.00 payment was made for the seventh course.

Based on the results of our statistical analysis, we are 90 percent confident that between 219 and 1,033 of the universe of academic training requests would fail both substantive tests, resulting in a projected dollar amount between \$284,291 and \$1,500,689 with a mean of \$892,490.<sup>17</sup>

Projections Based on 90 Percent Confidence Level						
Timeframe	Universe	Sample	Errors	Projected Lower Bound	Projected Mean	Projected Upper Bound
July 1, 2006- September 30, 2010	10,120	97	6	219	626	1033
July 1, 2006- September 30, 2010	\$16,875,078.28	\$171,680.75	\$8,554.50	\$284,291.10	\$892,490.10	\$1,500,689.11

<sup>17</sup> We performed the statistical sampling, analysis and projections using WinStat Version 1.0.

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## SCHEDULE OF QUESTIONED COSTS

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Questioned Costs*	Amount	Page
<b>Unallowable Costs:</b>		
NASA-funded employee degrees outside of established programs	\$ 1,438,196	5-8
<b>Unsupported Costs:</b>		
Projected tuition payments with no supporting documentation	\$ 892,490	14
<b>Total Questioned Costs</b>	<b>\$ 2,330,686</b>	

\* Questioned Costs are expenditures that are questioned by the OIG because of a possible violation of legal, regulatory or contractual requirements, are not supported by adequate documentation at the time of the audit, or are unauthorized or unallowable.

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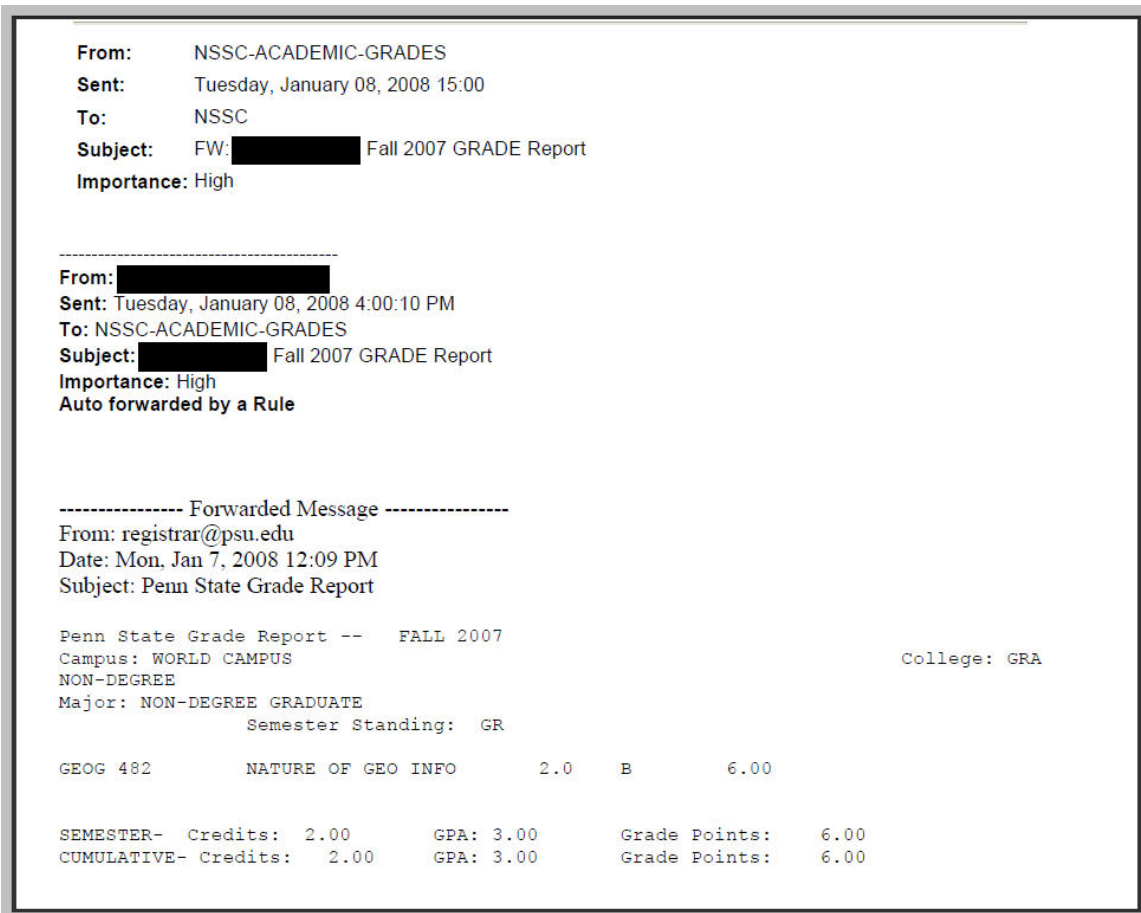


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## SAMPLES OF GRADE SUBMISSIONS ACCEPTED BY NASA

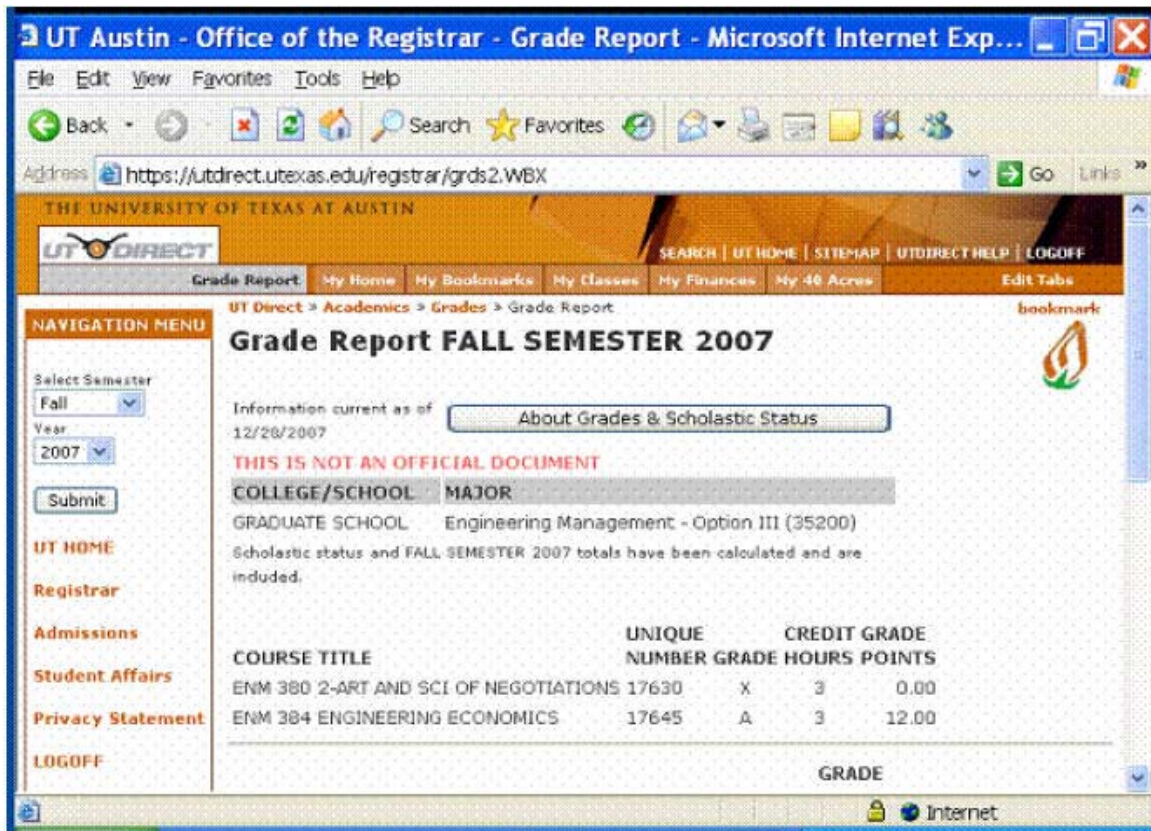
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NASA accepts various types of documentation as proof that an academic course was successfully completed. In this example, the employee submitted an e-mail from the university that does not list the name of the student or other information to indicate who took the course and received the grade.



Source: NASA Shared Services Center.

In this example, the employee submitted an Internet screen capture from the university website as evidence of receiving a passing grade. Note that the employee's name is not listed on the screen capture.



Source: NASA Shared Services Center.

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## MANAGEMENT COMMENTS

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National Aeronautics and Space Administration  
Headquarters  
Washington, DC 20546-0001



AUG - 3 2011

Reply to Attn of:

Office of Human Capital Management

TO: Assistant Inspector General for Audits

FROM: Assistant Administrator for Human Capital Management (Acting)

SUBJECT: OIG Draft Report, "NASA's Payments for Academic Training" (Assignment No. A-11-002-00)

The Office of Human Capital Management (OHCM) appreciates the opportunity to review and provide comments on the draft audit report entitled "NASA's Payments for Academic Training" (Assignment No. A-11-002-00). The Agency's participation in academic programs helps to ensure that NASA's employees are well equipped to meet the strategic goals of the Agency. OHCM welcomes the opportunity to strengthen the current policies and procedures that govern academic training and will partner with the Center Training Offices to implement a detailed action plan no later than December 31, 2011, to address the six recommendations outlined in the Office of the Inspector General (OIG) draft audit report. Additionally, NASA Policy Directive (NPD) 3410.2 (Employee and Organizational Development) will be updated no later than April 30, 2012, to reflect any necessary changes to the academic training policy.

NASA's response to the OIG's recommendations is as follows:

**Recommendation 1:** Require that, prior to granting final approval of academic training, the Center Training Offices assess the appropriateness of all academic training requests to ensure that employees obtain academic degrees only through established academic training programs.

**Management's Response:** Concur. OHCM agrees that NASA should only fund academic training that is in alignment with the mission of the Agency. In order to facilitate this effort, OHCM will coordinate with the Center Training Offices to establish a more comprehensive policy which will incorporate all academic training requests into the Agency's academic training approval process. The policy updates will also help to ensure that academic training is in alignment with the Agency's mission objectives.

**Recommendation 2:** Establish a centralized mechanism for tracking the Agency's academic training expenditures.

**Management's Response:** Concur. OHCM will coordinate with the NASA Shared Services Center (NSSC) and the Office of the Chief Financial Officer to determine the most efficient method for tracking academic training expenditures.

**Recommendation 3:** Limit payment of academic tuition per credit hour, implement a cap on the total amount that may be reimbursed to an employee during any given year, and establish a formal approval process for consideration of exceptions.

**Management's Response:** Non-concur. Consistent with NASA's role as one of the preeminent technical organizations in the Federal Government, the overriding factor in selecting academic institutions should be relevant technical excellence, not cost per credit hour. We will, however, utilize the policy changes referenced in Recommendation #1 to ensure that NASA is procuring academic training that best meets the needs of the Agency. In addition to cost, the Center Training Offices will consider school quality, best value for the Government, or if courses taken at a more expensive institution are available at a lower-cost institution. OHCM will also benchmark other Government agencies and private companies to determine best practices in this area.

**Recommendation 4:** Develop a mechanism to leverage the size of NASA's civil service and contractor workforce to negotiate discounted tuition rates at private or for-profit universities.

**Management's Response:** Concur. OHCM will coordinate with the Center Training Offices to negotiate discounted tuition rates for civil servant employees. In the past, however, the Center Training Offices were unsuccessful in negotiating discounted tuition rates, because many of the educational institutions require a guaranteed minimum number of enrollments each term in exchange for such discounts. Given the breadth of the Agency's mission requirements and the geographical disbursement of NASA's workforce, it is difficult to meet the minimum requirements.

**Recommendation 5:** Establish the Agency's position on the payment of college credits for life or work experience and the criteria for such payment.

**Management's Response:** Concur. As indicated in the report, the auditors did not identify any NASA civil service employees who had earned college credit for prior life or work experience. OHCM will, however, take the recommendation under consideration and incorporate any changes as deemed appropriate in NPD 3410.2.

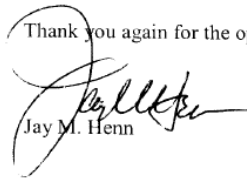
**Recommendation 6:** Require employees to submit official transcripts to document successful course completion.

**Management's Response:** Partially concur. While OHCM agrees with the intent of this recommendation, we do not believe the expense and extra logistics of an "official" transcript is required for each course completed. Instead, we propose that an official transcript only be required at the culmination of a degree program. For individual courses, as required in the current policy, unofficial transcripts and/or grade reports (which include the employee's name, name of the educational institution, course name, course dates, and grade) must be submitted to the NSSC within twenty (20) business days of course completion. NPD 3410.2 will be updated to reflect the appropriate changes.

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In addition to the recommendations outlined above, the report included questioned costs associated with employees who pursued academic degrees outside of the Agency's formal degree programs and tuition costs without proper documentation of course completion. The Center Training Offices are in the process of reviewing the individual cases associated with the costs cited in the report. This review will be completed by August 31, 2011.

Thank you again for the opportunity to review and comment on the draft audit report.



Jay M. Henn



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