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Office of Audits

NASA'S MANAGEMENT OF UNIVERSITIES SPACE RESEARCH ASSOCIATION'S COOPERATIVE AGREEMENTS

July 14, 2021

Report No. IG-21-022





Office of Inspector General

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RESULTS IN BRIEF

NASA's Management of Universities Space Research Association's Cooperative Agreements

July 14, 2021

IG-21-022 (A-20-006-00)

WHY WE PERFORMED THIS AUDIT

Cooperative agreements are legal instruments of financial assistance between a federal awarding agency and a non-federal entity to support or stimulate a public purpose. They differ from contracts in that they provide greater flexibility to the awardee and less stringent deliverable and oversight requirements. Among the multitude of organizations to whom NASA awards cooperative agreements (as well as grants and contracts) is Universities Space Research Association (USRA)—an independent, nonprofit research corporation established in 1969 to conduct collaborative research in astronomy, astrophysics, lunar science, planetary science, heliophysics, Earth science, and computer science and technology. USRA outsources much of this research to hundreds of universities and nonprofit organizations across the country through subcontracts or grants. Historically, USRA has ranked in the top five recipients of the more than \$1 billion the Agency awards annually to educational and nonprofit entities. Examples of USRA's most significant research for NASA is operation of the Stratospheric Observatory for Infrared Astronomy (SOFIA) program, the Keck Remote Observation Center (operation of Mauna Kea telescopes in Hawaii), and the Goddard Earth Sciences Technology and Research (GESTAR) partnership. In addition, NASA has cooperative agreements with USRA to recruit, identify, and place interns across the Agency.

In this audit, we evaluated NASA's management of cooperative agreements, specifically the management of USRA cooperative agreements relative to meeting Agency requirements. We focused on NASA's management and oversight of 21 active cooperative agreements valued at approximately \$476 million that the Agency had with USRA from fiscal year (FY) 2017 through April 2020. We selected this timeframe to increase the probability that the cooperative agreements would still be active. While this report focuses on cooperative agreements between NASA and USRA, the issues identified are similar to those we found in prior audits of other recipients of NASA cooperative agreements.

To complete this work, we analyzed NASA and USRA documentation, including original cooperative agreements and relevant supplements; annual progress reports; quarterly reports; payroll and other financial data files; and evaluated the USRA general ledger using a keyword search to identify potential unallowable transactions. Additionally, we obtained publicly available tax documentation and other records to review executive compensation. We also interviewed NASA management and personnel from the Office of Procurement, Office of the Chief Financial Officer, Office of STEM Engagement, NASA Shared Services Center (NSSC), Center grant officers, and USRA management.

WHAT WE FOUND

NASA needs to take additional steps to improve its management and financial oversight of cooperative agreements given the limited recipient reporting requirements outlined in the Agency's Grant and Cooperative Agreement Manual (GCAM) and the transactional approach the NSSC takes when processing cooperative agreement actions. Under this transactional approach, multiple grant officers complete individual actions (e.g., extensions or augmentation approvals) limiting any one grant officer's overall oversight and familiarity with the agreements. While USRA plays an important role in many NASA science missions, we found that the Agency does not have adequate management or financial oversight of USRA's cooperative agreements—shortcomings similar to those we identified in previous audits of other

recipients of NASA cooperative agreements. For instance, we found the total funded extensions and augmentations increased the overall value of USRA's 21 agreements from \$200.8 million to \$475.6 million. Moreover, we found a lack of information available to support these increases and award decisions. In addition, the financial reports NASA receives from USRA do not contain sufficient information to determine whether funds are being spent appropriately. We identified approximately \$6.8 million in transactions on 17 cooperative agreements that met our keyword search criteria for potential unallowable costs. We also identified that for FYs 2015 through 2020, USRA overcharged the government a total of \$246,060 for its President/Chief Executive Officer's compensation package because USRA relied on an opinion from its independent auditors as to what portion of the President/CEO's total compensation should be allocable to NASA awards, an error USRA has since corrected in its general ledger.

Federal and NASA policy state that the primary factor in determining whether an agreement should be a cooperative agreement or contract is the principle purpose of the work—whether it is stimulating a public purpose or providing a direct benefit to the Agency. The criteria for both cooperative agreements and contracts is outlined in the GCAM. However, we found that 12 of the 21 USRA cooperative agreements we reviewed—specifically, GESTAR and 11 internship agreements—should have been awarded as contracts because they provide direct benefits to NASA. As such, NASA is violating its own policy governing the determination of whether an award should be a contract or cooperative agreement and its oversight of USRA is more limited than it would have been had the Agency used a contract vehicle. While using cooperative agreements provided greater autonomy to USRA, NASA assumed greater risk in the performance of these awards. Moving forward, NASA officials said they plan to transition the internship cooperative agreements to contracts beginning in 2022, but GESTAR will remain a cooperative agreement despite our belief that it should be a contract.

WHAT WE RECOMMENDED

To increase management and financial oversight accountability for cooperative agreements, we made 11 recommendations to the Acting Chief Financial Officer and the Executive Director of the NSSC, including (1) revise the GCAM to add criteria and review approval thresholds for cooperative agreement extensions and augmentations, and new requirements for periodic sampling of supporting documentation to validate the accuracy and completeness of expenditures charged to the Agency; (2) ensure that the follow-on GESTAR cooperative agreement is assigned to a specific grant officer and not subject to transactional processing; (3) assign individual grant officers to specific agreements; (4) conduct periodic reviews of cooperative agreements to ensure the work performed is consistent with agreements and not contracts; (5) develop a plan for retaining NASA's performance evaluation reports in a centralized database; and (6) review USRA expenditures for allowability and recover any expenditures deemed unallowable, including the excess in executive compensation. In addition, in order to increase accountability over NASA agreements we made one recommendation to NASA's Associate Administrator for STEM Engagement to complete planned actions to transition internship cooperative agreements to contracts before the USRA cooperative agreement extensions end in August 2022.

We provided a draft of this report to NASA management, who concurred or partially concurred with 10 of our 12 recommendations and described actions they plan to take. We consider management's comments responsive and therefore the recommendations are resolved and will be closed upon completion and verification of the proposed corrective actions. Management did not concur with our recommendations to reevaluate and reassign individual grant officers to specific agreements or to ensure excess executive compensation USRA charged NASA was credited back to the Agency. Those two recommendations will remain unresolved pending further discussion with the Agency.

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Acronyms

| | |
|--------|---|
| CEO | Chief Executive Officer |
| C.F.R. | Code of Federal Regulations |
| CPAR | Contractor Performance Assessment Report |
| FAR | Federal Acquisition Regulation |
| FY | fiscal year |
| GAO | Government Accountability Office |
| GCAM | NASA Grant and Cooperative Agreement Manual |
| GESTAR | Goddard Earth Sciences Technology and Research |
| GISS | Goddard Institute for Space Studies |
| NSBRI | National Space Biomedical Research Institute |
| NSSC | NASA Shared Services Center |
| OCFO | Office of the Chief Financial Officer |
| OIG | Office of Inspector General |
| OMB | Office of Management and Budget |
| OSTEM | Office of STEM Engagement |
| PMS | Payment Management System |
| SOFIA | Stratospheric Observatory for Infrared Astronomy |
| STEM | Science, Technology, Engineering, and Mathematics |
| USRA | Universities Space Research Association |

INTRODUCTION

Cooperative agreements are legal instruments of financial assistance between a federal awarding agency and a non-federal entity to support or stimulate a public purpose, such as collaborative scientific research efforts, technology development, and information technology services. They differ from contracts in that they provide greater flexibility and less stringent deliverable and oversight requirements. NASA awards cooperative agreements, in addition to grants and contracts, to Universities Space Research Association (USRA)—an independent, nonprofit research corporation headquartered in Columbia, Maryland, with additional facilities or operations co-located near NASA Centers in Alabama, California, Maryland, Ohio, and Texas—which conducts research in astronomy, astrophysics, lunar science, planetary science, heliophysics, Earth science, and computer science and technology. USRA outsources much of this research to hundreds of universities and nonprofit organizations across the country through subcontracts or grants. NASA has collaborated with USRA since its inception in 1969 and historically the organization has ranked in the top five funding recipients for the more than \$1 billion the Agency awards annually to educational and nonprofit entities. Specifically, NASA’s \$148.5 million in fiscal year (FY) 2019 awards to USRA represented nearly 8 percent of all awards the Agency made to nonprofit and educational institutions that year. Some of USRA’s most significant research for NASA is performed through the Stratospheric Observatory for Infrared Astronomy (SOFIA) program, the Keck Remote Observation Center (operation of Mauna Kea telescopes in Hawaii), and the Goddard Earth Sciences Technology and Research (GESTAR) partnership.

In this audit, we evaluated NASA’s management of cooperative agreements, specifically the management of USRA cooperative agreements relative to meeting Agency requirements. We focused on NASA’s management and oversight of 21 active cooperative agreements valued at approximately \$476 million that the Agency had with USRA from FY 2017 through April 2020.¹ While in this report we focus on cooperative agreements between NASA and USRA, the issues identified are similar to those we found in prior audits of other NASA cooperative agreements. See Appendix A for details on the audit’s scope and methodology and Appendix B for a list of the USRA cooperative agreements we reviewed.

Background

Cooperative Agreements

NASA has the authority to engage with outside organizations to obtain research and procure systems development and other services using a variety of procurement vehicles, including contracts, grants, and

¹ In April 2020 the audit team identified 21 active cooperative agreements from the previous 3 years as its sample size.

cooperative agreements.² According to the Grant and Cooperative Agreement Manual (GCAM), cooperative agreements should not be used to acquire property or services for the federal government's direct benefit or use. Rather, cooperative agreements should be used for collaborative scientific research efforts, instrument technology development, and information technology services to carry out a public purpose. Unlike contracts governed by the Federal Acquisition Regulation (FAR), cooperative agreements with educational and nonprofit entities provide both the Agency and the recipient greater flexibility in conducting research because specific competition, deliverable, and oversight requirements are not required. Certain FAR requirements only apply to grants and cooperative agreements if they are issued to a for-profit organization.

Cooperative agreements also differ from grants in that they provide for substantial involvement between the federal awarding agency and the non-federal entity when carrying out actions to meet award requirements. This substantial involvement relates to programmatic involvement rather than administrative oversight. For instance, substantial involvement and contributions could include:

- the Agency plays an active role in collaborative efforts;
- government personnel, property, facilities, equipment, or research capabilities are used or shared;
- the recipient works for a substantial amount of time at a NASA Center or NASA personnel work at the recipient's facility, provided the shared facility arrangements are at no cost to either party; or
- the collaboration serves to produce or enhance a jointly authored report or educational product.

Our prior work has shown that the flexible nature of cooperative agreements can present management challenges in terms of oversight and cost control at NASA. For example, in our audit of the National Space Biomedical Research Institute (NSBRI), the Agency improperly permitted NSBRI to use \$7.8 million of cooperative agreement research funds to renovate and pay rent for laboratory space in a private building during the final 7 years of its agreement.³

² A contract is an agreement between parties creating mutual obligations enforceable by law. A grant is federal financial assistance provided by the government that funds projects to provide public services. A cooperative agreement is a type of grant where there is substantial involvement from both NASA and the awardee. To be consistent with NASA's GCAM that states, "unless otherwise indicated, throughout this manual the term 'grant' includes cooperative agreements," in this report the terms "grant" and "cooperative agreement" are synonymous. NASA makes awards through full-and-open competition and non-competitive selections. For full-and-open competition, all eligible sources are permitted to submit sealed bids or competitive proposals. Non-competitive awards are generally from unsolicited or sole-source proposals. Unsolicited proposals for grants and cooperative agreements are applications for financial assistance for support of an idea, method, or approach to carry out a project for a public purpose relevant to NASA's mission and are not submitted in response to a formal or informal NASA announcement. A sole-source award is made when the Agency determines only one source is capable of delivering the required product or service.

³ NASA OIG, *Audit of the National Space Biomedical Research Institute* ([IG-18-012](#), February 1, 2018). NSBRI was formed in 1997 to partner with NASA, academia, and industry to advance biomedical research focused on long-term human presence in space. Headquartered at the Baylor College of Medicine in Houston and funded through a cooperative agreement with NASA, NSBRI seeks to bridge the gap between the technological and clinical expertise of the biomedical community and the scientific, engineering, and operational expertise of NASA.

NASA's Cooperative Agreement Policy and Process

The cooperative agreement life cycle has three major stages: pre-award, award, and post-award. The pre-award phase begins when the agency plans for a solicitation through a Notice of Funding Opportunity and ends after applications have been reviewed and scored.⁴ The award phase ends once an award has been made. The post-award phase begins when a successful applicant expends awarded funds and starts work on achieving the outcome of the cooperative agreement. This phase encompasses ongoing monitoring of the funded project. The post-award phase concludes after the period of performance ends and closeout activities are completed. Cooperative agreements transition to closeout when the final financial data has been received, all payments are made to the recipient, all reimbursements have been received and reconciled, and any remaining unused balance has been deobligated from the cooperative agreement. Additionally, the grant officer must verify copies of all required deliverables are included in the cooperative agreement file.

The recipient and awarding agency have specific roles in each stage of the life cycle. As shown in Figure 1, NASA initiates a cooperative agreement through a Center, Office, or Headquarters by issuing a solicitation for the research or work that it requires. The NASA Center or Office that issues the solicitation provides the funding for the cooperative agreement award. Entities submit proposals in response to the solicitation. The Office that issues the solicitation reviews and selects the proposals, notifies recipients, and sends a completed selection package to the NASA Shared Services Center (NSSC), which includes the recipient's budget proposal.⁵ NASA policy states that NSSC must award and administer all cooperative agreements with the exception of those that have been approved in writing by the NASA Headquarters' Office of Procurement.⁶ NSSC checks for completeness, processes the file, awards, and distributes the cooperative agreement funds. Lastly, the recipient begins work, maintains a record of costs incurred, and requests payments through the Department of Health and Human Services' Payment Management System (PMS) for costs incurred.⁷

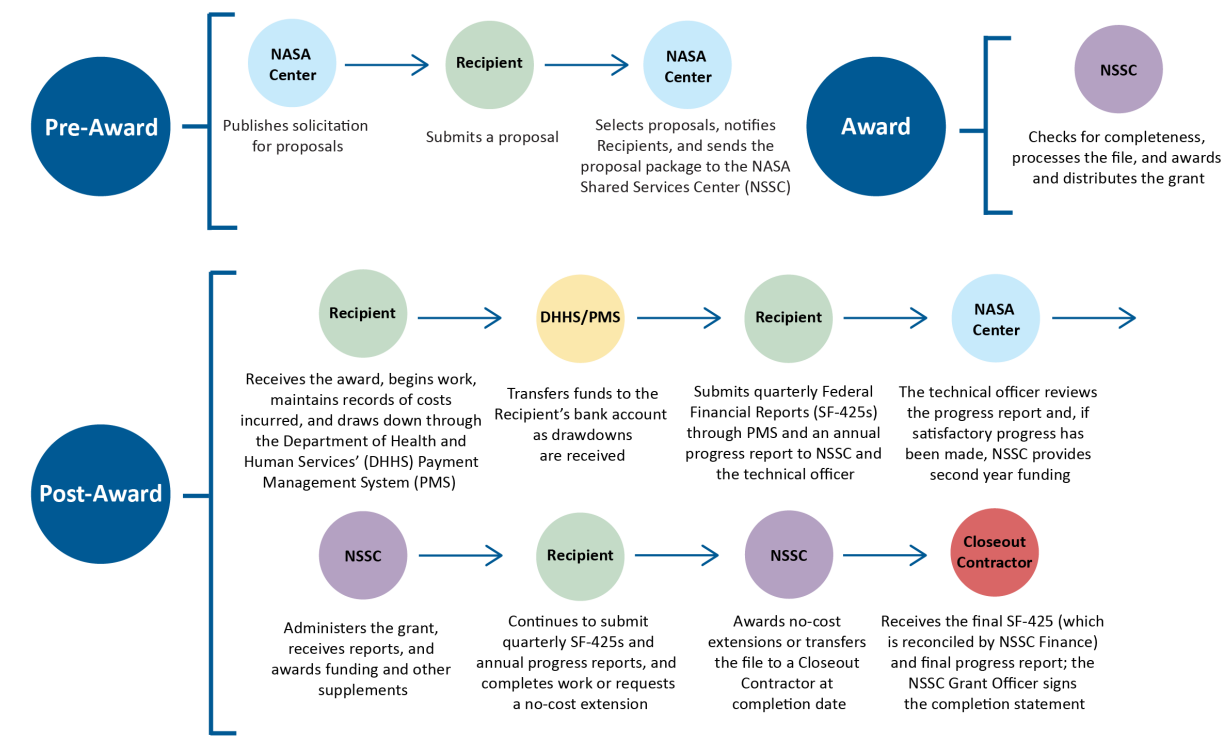
⁴ A Notice of Funding Opportunity is an awarding office's formally issued announcement of the availability of federal funding through one of its financial assistance programs. The announcement invites applications and provides such information as eligibility and evaluation criteria, funding preferences and priorities, how to obtain application kits, and the submission deadline.

⁵ A selection package includes copies of the solicitation, proposals selected for the award to include budget justifications, selection statements, technical evaluations, and the funded procurement requests.

⁶ NASA Grant Information Circular 11-04, *Center Retention of Authority to Award and Administer Certain Cooperative Agreement Actions* (December 21, 2011). The GCAM replicates this requirement by stating all cooperative agreement actions be processed, awarded, managed, and administered by the NSSC and open awards issued at Centers will remain with the Center until the period of performance, which varies depending on the nature of the project, has ended.

⁷ PMS is an online grants payment platform that transfers funds into the grant recipient's bank account as payment requests are received.

Figure 1: Overview of NASA’s Cooperative Agreement Award Process



Source: NASA Office of Inspector General (OIG) presentation of Agency information.

NASA’s Office of the Chief Financial Officer (OCFO), Grants Policy and Compliance Branch is responsible for developing the NASA GCAM.⁸ The GCAM provides policy guidance to NASA grant officers, technical officers, program managers, and all other grant management-related personnel to implement government-wide and NASA-specific regulations for awarding and administering grants and cooperative agreements with educational and nonprofit organizations; state, local, and Indian tribal governments; and for-profit organizations.⁹ Policies established in the GCAM are based on Title 2 of the U.S. Code of Federal Regulations (C.F.R.) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*. The requirements in this part are applicable to all federal agencies that make awards to non-federal entities.

According to the GCAM, the decision whether to use a contract, grant, or cooperative agreement as an award instrument must be based on the principal purpose of the relationship or arrangement, regardless of the type of business entity or nonprofit organization implementing the work. Normally, this decision is made by the program manager, in consultation with the technical officer, who must consider whether NASA could be directly harmed in furthering a specific mission or program requirement if the research or project is not accomplished, and whether the work performed by the recipient will be primarily for the Agency’s own purposes. If NASA mission requirements do not rely on the work being completed and the work is not primarily for the Agency’s own purposes, a grant or cooperative agreement is the appropriate instrument. Conversely, if the principal purpose of a

⁸ In June 2018, NASA transferred responsibility for grants and cooperative agreements from the Office of Procurement to the OCFO. Specifically, the OCFO Grants Policy and Compliance Branch became responsible for administering the GCAM.

⁹ As previously noted, cooperative agreements are technically considered grants. Therefore, they are administered by grant officers who are required to follow the policies outlined in the NASA GCAM.

transaction is to accomplish a NASA need, requirement, or service (in other words, to produce something for NASA’s use or to obtain a direct service for NASA’s use or benefit), a contract should be used as the award instrument. Proposers may request a contract or grant, but NASA procurement officials—either a grant officer or contracting officer, depending on where the award will be managed—determines the correct award instrument based on the above factors and Agency requirements.

Cooperative Agreement Oversight Responsibility

Oversight of NASA’s cooperative agreements is a shared responsibility between the NSSC and program offices.¹⁰ Although NSSC issues and has oversight of all awards, personnel at NASA Headquarters and Centers serve as technical officers on awards. Their responsibilities include drafting Notices of Funding Opportunities, conducting proposal reviews, and submitting technical review packages to NSSC. Technical officers are also responsible for reviewing progress reports and responding to technical assistance questions.

Office of the Chief Financial Officer

The OCFO Grants Policy and Compliance Branch provides internal guidance to NASA technical officers, grant officers, grant management specialists, and program managers implementing government-wide and NASA-specific regulations for awarding and administering grants and cooperative agreements with educational and nonprofit organizations; state, local, and Indian tribal governments; and for-profit organizations. The OCFO Policy Division is required to approve any deviation from the GCAM. In addition, cooperative agreements that exceed \$5 million and have a period of performance in excess of 5 years require approval of the OCFO’s Director of Policy prior to award.

NSSC Roles and Responsibilities

NSSC supports NASA research and the science and education communities through the award and administration of research-related grants and cooperative agreements. NSSC is responsible for awarding and administering grants and cooperative agreements to nonprofit organizations; processing successor grant awards; awarding and administering unsolicited and single-source proposals resulting in a grant or cooperative agreement; receiving all annual and final reports from recipients; and providing a publicly accessible website for pre-award and post-award status on grants and cooperative agreements.

Grant officers play an integral part in helping NSSC meet its objectives.¹¹ The GCAM specifies the roles and responsibilities of NSSC grant officers and states:

- The NSSC grants team is responsible for issuing awards, monitoring awards after issuance to ensure compliance with applicable statutes and regulations, issuing award amendments,

¹⁰ In December 2011, NASA transferred responsibility for awarding and monitoring grants and cooperative agreements to the NSSC from the Centers. By moving this oversight to the NSSC, the Agency hoped to achieve better standardization and streamlining of the process, thereby increasing overall efficiency. Centers may request a waiver to administer specific awards.

¹¹ Due to the NASA requirement for NSSC to administer cooperative agreements, grant officers are typically located at NSSC. Regardless of physical location, the grant officers are required to follow roles and responsibilities outlined in the NASA GCAM. For the purposes of this report, we did not make a distinction regarding the location of the grant officers in our evaluation of the cooperative agreements.

approving post-award actions, providing administrative assistance, and closing out awards after a project has concluded.

- Only a grant officer (who may also be a contracting officer) may issue new awards, amend awards, and provide prior approval for certain post-award actions.
- Grant officers are also the only personnel that are able to make the final determination regarding the allowability, allocability, and reasonableness of a recipient's expenditures charged to an award.
- If an award must be terminated, grant officers are the final approving official on such termination decisions.

In addition to their roles and responsibilities, grant officers are also involved in evaluating proposal requirements for competitive awards; analyzing recipient budget proposals; determining the number of incremental funding actions that will be allowed on a particular cooperative agreement; and conducting a risk assessment for each award applicant.

NASA annually awards at least \$1 billion to educational and nonprofit entities, and USRA has historically ranked in the top five organizations based on funding. For example, in 2017, 2018, and 2019 (the latest years for which information is available), USRA ranked third, fourth, and first, respectively, among institutions that received the most funding from NASA, to include Johns Hopkins University Applied Physics Laboratory, Southwest Research Institute, University of California, and University of Colorado.¹² Because of the size of USRA and fact that its primary funding source is NASA awards, we selected this organization to examine the Agency's management of its cooperative agreements.

USRA History and Governance Structure



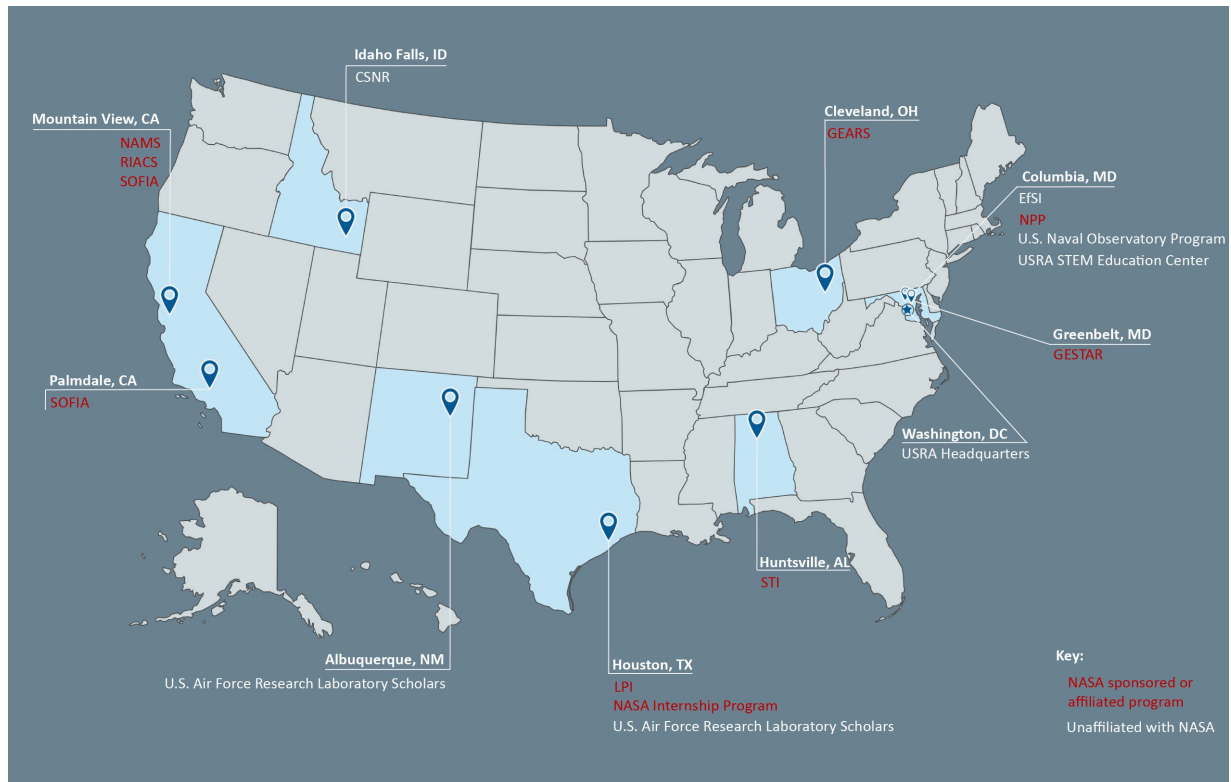
In 1966, the National Academy of Sciences created a committee to study how to improve coordination of research efforts between NASA and U.S. colleges and universities at a time when the Academy considered developing an institute to facilitate academic and public-sector space research. The following year, the committee recommended forming the Lunar Science Institute, which would be operated by a consortium of universities and strengthen ties between NASA and

the academic community. In October 1968, 45 universities met to discuss the committee's recommendation, leading to the formation of USRA in March 1969. USRA initially concentrated on managing the Lunar Science Institute (renamed the Lunar and Planetary Institute in 1978), but by 1970 began to support other NASA research efforts through contracts, grants, and cooperative agreements. Using these arrangements, USRA has supported NASA research and development efforts for more than 50 years.

Today, USRA facilitates cooperation between universities and other research organizations with the federal government, foreign governments, and other private-sector organizations on space-related science, technology, and engineering projects. In FY 2019, USRA scientists were involved in 857 research collaborations at 292 organizations, including over 400 universities. More than 480 scientific, technical, professional, and administrative staff are employed at USRA's research locations and headquarters office. Figure 2 identifies USRA locations and their associated government programs.

¹² Ranking information was obtained from NASA's Annual Procurement Reports for FYs 2017 through 2019. As of April 23, 2021, NASA has yet to release the report for FY 2020.

Figure 2: USRA Locations and Associated Government Programs



Source: NASA OIG depiction of USRA data.

Note: See Appendix C for details on the specified programs.

Key to USRA’s ability to identify and place scientists and interns to conduct NASA research is the role of universities. USRA’s business model involves engaging a wide range of expertise across varied university faculty and their students to support government research sponsors in multiple areas including science, technology research and development, science facility management and operations, and educational and workforce development. Specifically, as part of its governance structure, 114 Ph.D.-granting universities help USRA ensure that it meets its public purpose. Each member university appoints a representative to serve on a Council of Institutions that establishes bylaws and elects a Board of Trustees that appoints the USRA President/Chief Executive Officer (CEO).¹³ USRA’s President/CEO oversees several senior vice presidents and vice presidents in science, technology research and development, finance, corporate strategy and development, and human resources.

NASA and Other Federal Awards to USRA

As shown in Table 1, from FY 2017 through FY 2020 NASA awarded USRA between \$139 million and \$148 million annually to support the Agency’s programs and research efforts, accounting for

¹³ The Board has 15 members, including 9 regional trustees (one for each of the regional groups of the member universities) and 4 at-large trustees. The President and the Chair of the Council of Institutions serve on the Board, ex officio. Each Trustee serves a 3-year renewable term. USRA also has numerous science councils for each of its disciplines. Members are selected from government, academic, and public entities external to USRA and are appointed by the Board of Trustees based upon significant standing within their respective fields. The science councils provide independent advice to USRA’s President, Board, and program directors while providing their respective communities a means to review and assess USRA activities.

approximately 88 and 93 percent of all USRA revenue in FY 2017 and 2018, respectively.¹⁴ Examples of programs funded by NASA include the NASA Postdoctoral Programs and science, technology, engineering, and mathematics (STEM) workforce development utilizing the NASA internship program, which has provided approximately 2,000 annual internships during the past 4 years.¹⁵

Table 1: Total NASA Awards to USRA, Fiscal Year (FY) 2017 through FY 2020

| FY 2017 | FY 2018 | FY 2019 | FY 2020 | Total NASA Provided Funding (in dollars) |
|-------------|-------------|-------------|-------------|--|
| 139,071,707 | 146,130,774 | 148,472,845 | 144,062,828 | 577,738,154 |

Source: NASA OIG analysis of obligations from the annual Office of Procurement reports and NASA Procurement Data View database.

While NASA is its most significant funding source, USRA also has federal contracts and agreements with the Defense Advanced Research Projects Agency, Defense Threat Reduction Agency, Department of Commerce, Department of Energy, the U.S. Army, U.S. Air Force, U.S. Navy, U.S. Geological Survey, National Oceanic and Atmospheric Administration, and the National Science Foundation totaling approximately \$12.3 million per year.

NASA Procurements Awarded to USRA

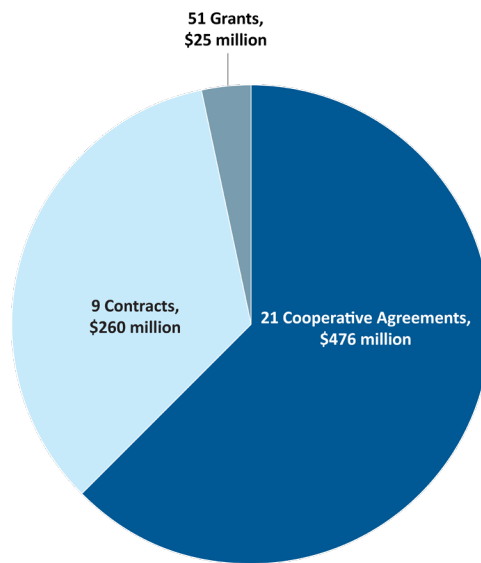
NASA has the authority to engage with outside organizations for research or other services using a variety of procurement vehicles. The Agency works with USRA by awarding cooperative agreements as well as contracts and grants. As of April 2020, NASA had 81 active procurement vehicles with USRA valued at approximately \$760 million.¹⁶ Figure 3 shows the number of active awards by procurement type and the associated dollar value.

¹⁴ Percent of revenue is based on 2017 and 2018 tax records, which are the latest 2 years available.

¹⁵ NASA’s Postdoctoral Program provides early-career and more senior scientists the opportunity to support NASA’s mission. NASA Postdoctoral Fellows work on 1- to 3-year assignments with NASA scientists and engineers at NASA centers and institutes to advance NASA’s missions in Earth science, heliophysics, planetary science, astrophysics, space bioscience, aeronautics, engineering, human exploration and space operations, astrobiology, and science management.

¹⁶ The number of active procurement vehicles is approximate because three contracts did not provide estimated completion dates. For purposes of our analysis, the category of “contracts” includes delivery orders, definitive contracts, purchase orders, and indefinite-delivery contracts.

Figure 3: USRA Awards by Procurement Vehicle, Fiscal Year 2017 through April 2020



Source: NASA OIG presentation of Agency information.

Note: Data is as of April 7, 2020. For the 21 cooperative agreements, 19 were awarded through full-and-open competition and 2 were non-competitive (1 unsolicited and 1 sole-sourced).

NASA’s Cooperative Agreements with USRA

NASA utilizes cooperative agreements with USRA to manage various Agency activities, the most significant being NASA’s internship and GESTAR programs.

NASA Internship Program

NASA’s internship program provides students with the opportunity to participate in research or other experiential learning under the guidance of a NASA mentor. USRA oversees the implementation and administration of internships for high school, undergraduate, and graduate students with placements throughout NASA. Since its inception in April 2013, 14,649 interns representing 1,489 high schools, colleges, and universities have participated in the NASA Internship Program—including 2,052 interns in 2020 alone. NASA administers its internship program through 11 cooperative agreements with USRA worth \$124.9 million through August 2022.



Goddard Earth Sciences Technology and Research (GESTAR)



USRA began managing GESTAR in May 2011 when NASA awarded a cooperative agreement valued at \$95.8 million to USRA and its partners, Morgan State University, I.M. Systems Group, Johns Hopkins University, Ball Aerospace and Technologies, and the Institute for Global Environmental Strategies.¹⁷ GESTAR conducts collaborative research, mainly within Goddard Space Flight Center's (Goddard) Earth Sciences Division, but also with the Solar Systems Exploration Division, the Office of Education, and the Office of Public Affairs.¹⁸ Scientists and staff at GESTAR, in collaboration with NASA and other investigators, develop new space-based missions; provide mission requirements; conduct research that explains the behavior of Earth and other planetary systems; and create engagement media that tell NASA's story of exploration and discovery on Earth and beyond.

Table 2 lists the 21 cooperative agreements we reviewed, 19 of which are administered by NSSC. Goddard and Marshall Space Flight Center (Marshall) administer one each.¹⁹ See Appendix B for additional details.

¹⁷ In May 2016, NASA extended GESTAR for another 5 years (through May 2021) to the team of USRA, Morgan State University, I.M. Systems Group, Johns Hopkins University, and Global Science and Technology, Inc. Morgan State University, founded in 1867, is a historically Black public research institution that provides instruction to a multiethnic, multiracial, multinational student body. Founded in 1987, I.M. Systems Group helps governments and businesses worldwide predict, prepare, and respond to climate change and environmental risks. Johns Hopkins University was established in 1876 as America's first research university. Ball Aerospace and Technologies (Ball Aerospace), founded in 1956 and a wholly owned subsidiary of Ball Corporation, provides aerospace and other technologies and services to commercial and government customers. The Institute for Global Environmental Strategies was established in March 1998 under an initiative of the Japanese government. The institute conducts policy development and strategic research for environmental measures and transitioned to a Public Interest Incorporated Foundation in April 2012. Global Science and Technology, Inc. provides service in the fields of science, engineering, information technology, and technical support to worldwide government, industry, and academic clients.

¹⁸ NASA's Office of Education was renamed the Office of STEM Engagement in 2018.

¹⁹ The GESTAR cooperative agreement was awarded by Goddard prior to the requirement to obtain a waiver. Marshall received a waiver to administer its cooperative agreement.

Table 2: Cooperative Agreements Reviewed

| Agreement Number | Cooperative Agreement Description | Short Title | Administration |
|------------------|---|-------------------------------|----------------|
| 80MSFC17M0022 | Collaborative Research | Marshall | Marshall |
| 80NSSC17M0004 | Support of Astromaterials Research and Exploration Services | ARES | NSSC |
| 80NSSC18M0086 | Multi-Decadal Nitrogen Dioxide and Derived Products from Satellites | MINDS | NSSC |
| 80NSSC19M0111 | Vulnerability of the Taiga-Tundra Ecotone | TTE | NSSC |
| 80NSSC20M0016 | Transformative Lunar Science and Exploration | Lunar Science and Exploration | NSSC |
| NNG11HP16A | Goddard Earth Sciences Technology and Research | GESTAR | Goddard |
| NNX11AP82A | Mars Science Laboratory Investigations | MSL | NSSC |
| NNX13AJ37A | NASA Internships (Master Agreement) | NASA Internships | NSSC |
| NNX13AJ38A | NASA Internships (Ames Research Center) | EDU CAN | NSSC |
| NNX13AJ39A | NASA Internships (Armstrong Flight Research Center) | Props-2 | NSSC |
| NNX13AJ40A | NASA Internships (Glenn Research Center) | NASA Internships | NSSC |
| NNX13AJ41A | NASA Internships (Goddard Space Flight Center) | Props-2 | NSSC |
| NNX13AJ42A | NASA Internships (NASA Headquarters) | EDU CAN | NSSC |
| NNX13AJ44A | NASA Internships (Johnson Space Center) | EDU CAN | NSSC |
| NNX13AJ45A | NASA Internships (Kennedy Space Center) | Props-2 | NSSC |
| NNX13AJ46A | NASA Internships (Langley Research Center) | EDU CAN | NSSC |
| NNX13AJ47A | NASA Internships (Marshall Space Flight Center) | NASA Internships | NSSC |
| NNX13AJ48A | NASA Internships (Stennis Space Center) | Props-2 | NSSC |
| NNX15AL12A | Lunar and Planetary Institute Operations | LPI | NSSC |
| NNX16AR31A | Fermi Gamma-ray Space Telescope | FERMI | NSSC |
| NNX17AD69A | Goddard Earth Observing System, Version 5 | GEOS-5 | NSSC |

Source: NASA OIG presentation of Agency data.

NASA DOES NOT PROVIDE SUFFICIENT MANAGEMENT AND FINANCIAL OVERSIGHT OF USRA COOPERATIVE AGREEMENTS

From an Agency-level perspective, NASA needs to take additional steps to improve its management and financial oversight of cooperative agreements given its limited recipient reporting requirements in the Agency's GCAM and transactional approach to processing cooperative agreement actions—meaning individual actions (e.g., extensions or augmentation approvals) on specific cooperative agreements are potentially handled by multiple grant officers limiting grant officers' oversight and familiarity with agreements.²⁰ Specifically, while USRA plays an important role in many NASA science missions, we found that the Agency does not have adequate management or financial oversight of USRA's \$475.6 million in cooperative agreements—shortcomings similar to those we identified in previous audits of other recipients' cooperative agreements. We found significant increases in the duration and value of USRA's cooperative agreements and a lack of information available to support these increases and award decisions.²¹ In addition, the financial reports NASA receives from USRA after agreements are awarded do not contain sufficient information to determine whether funds are being spent appropriately.²² Collectively, these issues may have resulted in NASA paying USRA up to \$6.8 million in potentially unallowable costs on 17 of the 20 cooperative agreements we reviewed.²³

Management Oversight

While cooperative agreements are designed with additional flexibilities compared to contracts and grants, it is important for agencies to provide proper oversight to ensure that the objectives of the agreement are achieved. We found NASA's lack of management oversight and guidance for its portfolio of cooperative agreements has resulted in inadequate review of significant USRA extensions and augmentations and an absence of performance information that could be used to inform future Agency awards. Neither GCAM nor NSSC policy requires management approval beyond the grant officer for what can be substantial extensions and augmentations. As a result, significant increases in agreement values are made without higher level consideration and scrutiny. We found that 14 of the 21 USRA

²⁰ GCAM policies are based primarily on 2 C.F.R. § 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, and 2 C.F.R. § 1800, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*.

²¹ Funded extensions are supplements used to extend grants that require additional funding beyond their expiration dates. Funded extensions must be supported by a proposal and a new technical evaluation and are required to be submitted at least 3 months in advance of the expiration date. Augmentations are supplements that can be used at any time for work outside the scope of the approved proposal.

²² Detailed budget information is reviewed prior to initial and augmentation awards.

²³ As mentioned previously, the audit sample included 21 cooperative agreements, but only 20 of the 21 agreements were included in USRA's general ledger as one agreement (80NSSC20M0016) was awarded outside the date range requested.

cooperative agreements we reviewed were extended beyond the recommended 5-year period of performance (see Table 3).

Table 3: Duration of Cooperative Agreements as of March 2021

| Agreement Number | Short Title | Duration (in years) | No-Cost Extensions | Funded Extensions | Augmentations |
|------------------|-------------------------------|---------------------|--------------------|-------------------|---------------|
| 80MSFC17M0022 | Marshall | 5 | 0 | 0 | 19 |
| 80NSSC17M0004 | ARES | 5 | 0 | 0 | 1 |
| 80NSSC18M0086 | MINDS | 5 | 0 | 0 | 0 |
| 80NSSC19M0111 | TTE | 3 | 0 | 0 | 0 |
| 80NSSC20M0016 | Lunar Science and Exploration | 4 | 0 | 0 | 0 |
| NNG11HP16A | GESTAR | 10 | 0 | 1 | 0 |
| NNX11AP82A | MSL | 9 | 2 | 4 | 1 |
| NNX13AJ37A | NASA Internships | 9 | 0 | 2 | 2 |
| NNX13AJ38A | EDU CAN | 9 | 0 | 2 | 1 |
| NNX13AJ39A | Props-2 | 9 | 0 | 2 | 1 |
| NNX13AJ40A | NASA Internships | 9 | 0 | 2 | 0 |
| NNX13AJ41A | Props-2 | 9 | 0 | 2 | 1 |
| NNX13AJ42A | EDU CAN | 9 | 0 | 2 | 1 |
| NNX13AJ44A | EDU CAN | 9 | 0 | 2 | 1 |
| NNX13AJ45A | Props-2 | 9 | 0 | 2 | 1 |
| NNX13AJ46A | EDU CAN | 9 | 0 | 2 | 1 |
| NNX13AJ47A | NASA Internships | 9 | 0 | 2 | 1 |
| NNX13AJ48A | Props-2 | 9 | 0 | 2 | 1 |
| NNX15AL12A | LPI | 6 | 2 | 0 | 0 |
| NNX16AR31A | FERMI | 5 | 4 | 0 | 0 |
| NNX17AD69A | GEOS-5 | 5 | 1 | 0 | 0 |

Source: NASA OIG analysis.

Note: See Appendix B for complete descriptions of the cooperative agreements.

We also found that 5 of the 21 agreements tripled their original value from a total of approximately \$111.8 million to \$366.2 million—with all, except Marshall and GESTAR, executed without receiving additional approval beyond the grant and technical officers (see Table 4). While cooperative agreements are designed to have flexibility, we believe NASA’s lack of an approval requirement does not provide for adequate justification and oversight of requested cost increases.

Table 4: Increase in Values from Award through March 2021

| Agreement Number | Short Title | Original Award Value | March 2021 Value |
|------------------|------------------|----------------------|------------------|
| 80MSFC17M0022 | Marshall | \$4,964,045 | \$20,520,802 |
| NNG11HP16A | GESTAR | 95,811,856 | 291,489,245 |
| NNX13AJ41A | Props-2 | 6,000,000 | 19,931,998 |
| NNX13AJ46A | EDU CAN | 3,000,000 | 24,831,895 |
| NNX13AJ47A | NASA Internships | 2,000,000 | 9,420,649 |

Source: NASA OIG analysis.

Note: See Appendix B for complete descriptions of the cooperative agreements.

Furthermore, although the GCAM was recently updated to include requirements for NASA to measure award recipients' performance, additional improvements are needed to standardize the format of performance evaluations and provide a consistent approach for the Agency's technical and grant officers to measure recipient performance.

GCAM Guidance

The GCAM provides limited guidance for extending the period of performance and augmenting or increasing the overall value of a cooperative agreement.²⁴ Specifically, the GCAM describes (1) no-cost extensions, which extend the agreement beyond the expiration date at no additional cost; (2) funded extensions, which extend the expiration date and provide additional funding supported by a proposal and new technical evaluation; and (3) augmentations, which adjust the scope of the agreement and also require a revised budget proposal and new technical evaluation.

Additionally, according to the GCAM, the duration of an award should not typically exceed 5 years unless it is in the best interest of the government or is otherwise specified by a program's unique needs, policies, or procedures. Moreover, the GCAM specifies that cooperative agreements that exceed \$5 million and have a period of performance in excess of 5 years require the approval of the Headquarters OCFO, Director of Policy prior to award.²⁵

Extension and Augmentation Reviews

Our review found that the process used by NSSC to process extensions and augmentations for cooperative agreements allows them to occur with a low level of oversight and lack of supporting documentation. This, combined with NASA's history of a lack of oversight over cooperative agreements, presents a risk of the Agency failing to achieve maximum benefit from the agreements.

In our review of USRA's 21 cooperative agreements, we found that the average duration of agreements was 7.4 years including all performance period extensions. Specifically, 14 of the 21 agreements, or 67 percent, were initiated with periods of performance of no more than 5 years, but exceeded the recommended 5-year period of performance with 13 of the 14 being extended for durations of 9 years or more (see Table 3). These extensions were a mix of no-cost and funded extensions. Additionally, for

²⁴ A period of performance is the total estimated time between the start of the award and the planned end date.

²⁵ The Headquarters Office of Procurement was responsible for approving extensions and augmentations prior to the Headquarters OCFO assuming this responsibility in June 2018.

the 19 agreements administered by NSSC we could not find the required justification detailing why extensions were in the best interest of NASA or specified by a program's unique needs, policies, or procedures. We also could not find any grant officer determinations as to whether these augmentations required separate approval as non-competitive additions to the scope of efforts performed under the grants, as required by the GCAM.

For the 21 agreements we reviewed, we found a total of 9 no-cost extensions, 27 funded extensions, and 32 augmentations (see Table 3). The 59 funded extensions and augmentations totaled \$274.8 million and, while each required technical officer approval for new proposals and technical evaluations, none were submitted to or received OCFO approval.²⁶ The GCAM does not address review and approval levels for funded extensions and augmentations, therefore the grant officers we interviewed stated that extensions and augmentations must exceed \$5 million and 5 years in order to merit OCFO review. The only GCAM statement pertaining to extensions is that requests for approval are not required when the 5-year limitation is exceeded due to a no-cost extension.

We are concerned with the number of grant officer actions extending and augmenting agreements, which have resulted in the durations and values of these cooperative agreements increasing significantly without any OCFO or other higher-level review. Specifically, for USRA, the total funded extensions and augmentations increased the overall value of the 21 agreements from \$200.8 million to \$475.6 million. For the 19 agreements administered by NSSC, extensions and augmentations were completed with no additional review or approval beyond the NSSC grant and technical officers, which in our opinion was not sufficient to justify the adjustments.

Conversely, for cooperative agreements managed at Marshall, we found that personnel use a review and approval matrix to govern contracts, grants, and cooperative agreements requiring additional levels of review based on the dollar threshold of the agreement or contract action. Specifically, cooperative agreements and supplements between \$1 million and \$5 million are reviewed by the Center Policy and Chief Counsel Offices and approved by the Procurement Office Chief prior to issuance.²⁷

Historically, NASA has not provided adequate oversight of cooperative agreements and the OIG has previously found significant issues with other, non-USRA cooperative agreements. For example, in the audit, *NASA's Management of GISS: The Goddard Institute for Space Studies*, we found multiple instances of unallowable use of NASA-appropriated funds by GISS employees, grant recipients, and contractors for salary expenses, subcontracting, and computer equipment.²⁸ Based on our review of these unallowable expenses, we questioned the rationale of \$1.63 million of GISS expenditures. In our opinion, this inappropriate use of NASA funds was largely the result of insufficient oversight by the principal investigators, NASA's technical officers, and approving officials coupled with the absence of a senior-level administrator at GISS to manage the Institute's grants and cooperative agreements. Additionally, in another audit, we found an instance where cooperative agreement research funds were used to renovate and pay rent for laboratory space during the agreement.²⁹ In both cases, we identified areas in which NASA could improve its policies and procedures for managing grant and cooperative agreement awards.

²⁶ Prior to July 2018, Office of Procurement review was required. However, in our testing of transactions, we did not note any level of review higher than the grant officer.

²⁷ Supplements are administrative award documents used to modify grants and cooperative agreements.

²⁸ NASA OIG, *NASA's Management of GISS: The Goddard Institute for Space Studies* ([IG-18-015](#), April 5, 2018).

²⁹ [IG-18-012](#).

Due to the significant dollar value increases of funded extensions and augmentations from initial award through their current periods of performance, we believe additional scrutiny beyond the grant officer level, similar to the procedures Marshall has implemented, will improve NASA's oversight of these actions. This will help ensure that these extensions and augmentations are in the best interest of the government and serve a program's unique needs, policies, or procedures, as required by GCAM for awards made with periods of performance in excess of 5 years.

Grant Officers' Transactional Approach Limits Familiarity with Specific Agreements

Because of the breadth and scale of their responsibilities, grant officers are expected to possess detailed knowledge of all cooperative agreements assigned to them. This contrasts with other organizations, such as the National Science Foundation, that use a portfolio approach based on functional areas to assign grant officers. NSSC does not assign a specific grant officer to a specific cooperative agreement for general oversight or processing. Rather, it has been a long-standing practice that NSSC works on a transactional basis and instead of maintaining responsibility for the overall administration of a particular cooperative agreement, grant officers are in a "staff pool" wherein they complete transactions as they arise, regardless of which NSSC colleague may have initiated the agreement.

In our opinion, this transactional approach can limit the general oversight of a cooperative agreement and the grant officer's familiarity with it. In several instances, when we asked for detailed information about specific cooperative agreement transactions, grant officers could not provide any detailed or specific information about why they processed the actions. In addition, the files we reviewed did not contain information regarding the rationale for the transactions. We believe that grant officers would have more comprehensive knowledge and be able to provide better oversight of transactions if they were assigned to continuously handle specific cooperative agreements. This would also be consistent with how OCFO envisioned cooperative agreements would be administered and how NASA manages contracts. Given that NASA awarded more than \$1.1 billion in cooperative agreements in FYs 2017 through 2019, a management approach similar to that of contracts would be prudent.³⁰

Table 5 highlights the number of different grant officers that completed tasks on the NSSC managed USRA cooperative agreements we reviewed. This includes one cooperative agreement that had 13 different grant officers who processed 49 separate actions, including funding supplements, administrative updates, and extensions. Given the increase in the value of USRA agreements from \$200.8 million to \$475.6 million due to funded extensions and augmentations, NSSC's transactional approach can put grant officers in a position where they make uninformed decisions that could adversely affect NASA from a management and financial perspective.

³⁰ We calculated the total dollar amount from NASA's Annual Procurement Reports for the last 3 fiscal years available, which do not include awards made to the Jet Propulsion Laboratory.

Table 5: Number of NSSC Grant Officers by Cooperative Agreement (through March 2021)

| Agreement Number | Short Title | Grant Officers | Agreement Number | Short Title | Grant Officers |
|------------------|-------------------------------|----------------|------------------|------------------|----------------|
| 80NSSC17M0004 | ARES | 7 | NNX13AJ42A | EDU CAN | 9 |
| 80NSSC18M0086 | MINDS | 3 | NNX13AJ44A | EDU CAN | 9 |
| 80NSSC19M0111 | TTE | 2 | NNX13AJ45A | Props-2 | 7 |
| 80NSSC20M0016 | Lunar Science and Exploration | 3 | NNX13AJ46A | EDU CAN | 8 |
| NNX11AP82A | MSL | 6 | NNX13AJ47A | NASA Internships | 7 |
| NNX13AJ37A | NASA Internships | 11 | NNX13AJ48A | Props-2 | 6 |
| NNX13AJ38A | EDU CAN | 10 | NNX15AL12A | LPI | 13 |
| NNX13AJ39A | Props-2 | 6 | NNX16AR31A | FERMI | 3 |
| NNX13AJ40A | NASA Internships | 8 | NNX17AD69A | GEOS-5 | 6 |
| NNX13AJ41A | Props-2 | 12 | | | |

Source: NASA OIG analysis.

Note: See Appendix B for complete descriptions of the cooperative agreements.

According to NASA OCFO officials, employing a transactional approach was not their intent when the Agency assigned grant and cooperative agreement administration to NSSC. The OCFO’s expectation was for one grant officer to have primary oversight responsibility of each agreement for the entire life cycle of the agreement to allow for familiarity with the agreement when making financial, management, and procurement decisions, similar to that of a contract. However, the GCAM does not adequately define roles and responsibilities of grant officers, including specifications that one grant officer be assigned primary responsibility for each cooperative agreement for its entire life cycle, or provide for a back-up grant officer to account for instances where the primary grant officer is unavailable, reassigned, retires, or leaves the position. Based on our discussions with the OCFO, they plan to update the GCAM to better define their expectations for grant officers’ oversight of agreements.

Transition of GESTAR Management to the NSSC Might Be Premature

In 2011, NASA awarded a \$95.8 million cooperative agreement to USRA for GESTAR, which provides research, instrument technology, and information technology in support of Goddard’s Earth science disciplines. Because NASA awarded the current GESTAR cooperative agreement prior to the Agency transferring responsibility for awarding and monitoring cooperative agreements to NSSC, Goddard’s Office of Procurement is administering the agreement.³¹ However, when the period of performance for

³¹ The GESTAR cooperative agreement was awarded in May 2011, 7 months before NASA changed its policy and required a waiver to maintain cooperative agreement award and administration functions at a Center rather than at NSSC.

the current GESTAR agreement ends in May 2021, administration for the follow-on award will be transferred to NSSC.

In our view, NSSC's transactional approach will not be effective for managing an agreement as large and complex as GESTAR, where familiarity with the specific details of the GESTAR program is vital for making appropriate financial and procurement decisions.³² The lack of knowledge and comprehensive understanding of the scope of the agreement under a transactional approach increases NASA's risk of failing to provide sufficient oversight. Goddard procurement officials recognized that historically NSSC has not administered large and complex agreements such as GESTAR. However, according to a Goddard procurement official, the Acting Assistant Administrator for Procurement at the time had indicated that the long-term plan is for NSSC to manage all cooperative agreements. We believe that using GESTAR as a training opportunity for NSSC grant officers who lack the experience and expertise to effectively administer a large and complex cooperative agreement, is an unnecessary risk to the Agency. NASA should first take steps to improve its overall management and oversight of cooperative agreements before transitioning GESTAR to NSSC.

NASA Does Not Evaluate and Document Recipient Performance

According to the GCAM, recipients are required to submit annual performance progress reports 60 days prior to the anniversary date of a grant or cooperative agreement inception. These progress reports are supposed to be read by the technical officer and outline the work completed by the recipient for the relevant performance period, such as major activities and specific objectives; significant results or key outcomes, including major findings, developments, or conclusions; and other achievements. However, at the time of our review, the GCAM did not have a requirement for anyone to review, evaluate, or document recipient performance once these progress reports were submitted. In our examination of USRA's cooperative agreements we noted that while verbal feedback provided to the OIG from various technical officers stated that USRA's performance was excellent and without issue or concern, we did not find any written NASA evaluations of USRA's performance, other than for the GESTAR cooperative agreement, and no centralized database accessible by other grant officers.

In contrast, for contracts over \$250,000, the FAR requires agencies to complete a contractor performance evaluation within 120 days from the end of the period of performance. These evaluations are stored in the Contractor Performance Assessment Reporting System—a web-enabled application that collects and manages a library of assessment reports, providing a record, both positive and negative, on a given contractor. Each assessment is based on objective facts and supported by program and contract management data, such as cost performance reports, customer comments, quality reviews, technical meetings, financial assessments, contractor operations reviews, and earned contract incentives. Government officials use these multiple sources of information for future source selection purposes leading to award decisions. Past performance data is relevant information of a contractor's actions under previously awarded contracts or orders and typically includes the contractor's record of conforming to requirements and standards of work; forecasting and controlling costs; adhering to schedules; behaving in a reasonable and cooperative way; and demonstrating a commitment to customer satisfaction.

³² In terms of complexity, GESTAR is one of the largest agreements across the Agency and the Contractor Performance Assessment Reports state that its complexity is "high." As of May 10, 2021, there were 149 modifications to the GESTAR agreement. The cooperative agreement announcement specifically states that this agreement will be administered by NSSC.

In November 2020, NASA updated the GCAM to include requirements for NASA personnel to measure award recipients' performance to show achievement of program goals and objectives, share lessons learned, improve program outcomes, and foster adoption of promising practices.³³ According to the GCAM, NASA program offices are responsible for determining how performance is measured, which may differ from program to program. While we support and recognize NASA's progress toward capturing recipients' performance to inform future award decisions, given that NASA typically awards more the \$350 million annually in cooperative agreements, a lack of consistency in how performance evaluations are conducted and documented may result in insufficient or incomplete evaluations and the inability to compare results from various program offices. Standardizing the format of performance evaluations and providing a consistent approach for Agency technical and grant officers to measure performance against agreement objectives would help address these issues. Additionally, maintaining this information in a central location is critical given the number of different grant officers involved in the administration of each cooperative agreement action. A centralized location will also allow procurement officials to access relevant information for making determinations for future awards of contracts, grants, and cooperative agreements.

Financial Oversight

Requirements as prescribed in Office of Management and Budget (OMB) and NASA guidance hinder the ability of NASA grant officers to provide adequate oversight of actual costs charged on cooperative agreements. Specifically, after the cooperative agreement is awarded, NASA does not have a policy in place that requires grant officers to review actual expenditures for allowability.³⁴ Instead, OMB requirements and NASA guidance puts the onus on the recipient to ensure that the costs it charges the Agency are allowable, allocable, and reasonable. NASA guidance requires the recipient to submit a budget proposal before a cooperative agreement is awarded or renewed and requires NSSC grant officers to review that initial or supplemental budget proposal.

Our audit found that USRA's Federal Financial Reports, otherwise known as SF-425s, provided to NSSC grant officers lack sufficient financial detail to determine whether specific costs charged to the Agency are allowable.³⁵ We reviewed USRA's general ledger and found indications that unallowable costs were potentially charged to NASA's cooperative agreements. For example, we searched USRA's general ledger for transactions that included the word "housing," a cost that is only allowable when charged as a direct cost and approved in advance by the awarding agency, and found seven transactions on three cooperative agreements totaling \$72,867 that used the term. As a result, we found approximately 14,800 transactions on 17 cooperative agreements that met this or other keyword search criteria for potential unallowable costs, totaling \$6.8 million in transactions.³⁶

We also determined that USRA exceeded allowable amounts for executive compensation and overcharged NASA a total of \$246,060 for fiscal years 2015 through 2020. According to USRA, this occurred due to USRA's reliance on the opinion of its previous independent financial statement auditors as to how the President/CEO's total compensation should be calculated when determining the portion

³³ This requirement applies to awards issued on or after November 12, 2020.

³⁴ Grant renewals provide for continuation of research beyond the original scope, period of performance, and funding levels; therefore, new proposals, certifications, and technical evaluations are required prior to the execution of a grant renewal.

³⁵ An SF-425 is a statement of expenditures associated with a cooperative agreement.

³⁶ The audit team reviewed each of the 20 cooperative agreements in USRA's general ledger, but only 17 agreements had transactions that hit on keyword searches conducted by the OIG.

allocable to NASA awards. We brought the matter to USRA's attention during the audit and officials stated that its new independent auditors in 2020 recommended improvements to properly account for the compensation.

NASA's Payment Process for Cooperative Agreements

According to 2 C.F.R. 200, costs are allowable under federal awards if they are necessary and reasonable for performance of the federal award, allocable, and adequately documented. Further, a cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person under the circumstances prevailing at the time the decision was made to incur the cost. The question of reasonableness is particularly important when the non-federal entity is predominantly federally funded. A cost is allocable to a federal award or other cost objective if the goods or services involved are chargeable or assignable to that federal award or cost objective in accordance with relative benefits received.

Once a recipient is notified that they have been selected to receive a cooperative agreement, a completed selection package, including the recipient's budget proposal, is sent to NSSC, as shown in Figure 1.³⁷ NSSC checks the package for completeness, processes the file, awards, and distributes the cooperative agreement funds. The recipient receives the award, begins work, maintains records of costs incurred, and requests payments through the Department of Health and Human Services' PMS for costs incurred.³⁸ PMS payment requests (drawdowns) can be made by the cooperative agreement recipient as often as needed, but funds must be spent within 3 business days. PMS also assists the recipient with filing the SF-425. Recipients of federal funds are required to report the status of funds for agreements to the agreement sponsor using the Federal Financial Report expenditure data. The GCAM requires the recipient to submit an SF-425 electronically to PMS within 30 days following the end of each fiscal quarter and to NASA within 90 days following completion of the cooperative agreement's period of performance.³⁹

Inadequate GCAM Review Requirements for Unallowable Costs

NASA grant officers review budget proposals for allowable costs but do not review actual expenditures for allowability after cooperative agreements are awarded. A NASA cooperative agreement award may only be signed by a NASA grant officer and only a grant officer can make commitments, obligations, or awards on behalf of the Agency and authorize the expenditure of funds. As part of their review of the selection package, the NSSC grant officer conducts an analysis of the proposed budget according to 2 C.F.R. 200. However, the budget proposals only include total estimated costs for a given year for a specific budget cost category. There is no requirement for the NSSC grant officer to review actual expenditures for allowability subsequent to the proposed budget review. According to the GCAM, the recipient institution is responsible for ensuring that costs charged are allowable, allocable, and reasonable under applicable cost principles. When asked if grant officers reviewed actual costs charged by USRA, NSSC officials confirmed they only review for allowability during budget proposal reviews.

³⁷ A selection package includes copies of the solicitation, proposals selected for the award including budget justifications, selection statements, technical evaluations, and the funded procurement requests.

³⁸ PMS is an online grants payment platform used by both the awarding agency and grant recipients. PMS transfers funds into the recipient's bank account as drawdowns are received.

³⁹ The requirement for submission to NASA within 90 days was changed to 120 days in the GCAM issued in November 2020.

Grant officers stated they have visibility over PMS drawdowns for monitoring cooperative agreement expenditures and they receive and review the SF-425 on a quarterly basis.⁴⁰ However, neither the PMS drawdowns nor the SF-425s provide the level of granularity needed for grant officers to assess whether actual costs charged to NASA are allowable. The PMS drawdowns provide a summary of funding, obligations, disbursement, and withdrawals. For each category, transactions are listed individually, but do not show the types of incurred costs, which comprise the total line item amount. Therefore, the grant officer would be unable to determine if any of the line item costs included charges that were expressly unallowable. Furthermore, while an SF-425 is required for each cooperative agreement, the form shows only the total value of various cost categories including cash receipts, cash disbursements, federal share of expenditures, and unobligated balance of federal funds. Similar to the PMS drawdowns, this information does not provide enough detail for grant officers to determine whether the recipient is ensuring the costs it charges NASA are allowable.

Further limiting the grant officers' ability to review for unallowable costs is that the GCAM specifically notes requests for financial details from the recipients should be limited to the minimum necessary to conduct the budget review. This requirement is derived from OMB guidance which states that unless otherwise approved by OMB, the federal awarding agency may solicit only the standard, OMB-approved government-wide data elements for collecting financial information, which at the time of publication was the SF-425.⁴¹ While OMB states the awarding agency may only solicit the SF-425s, language included in the guidance indicates the potential for additional types of standard OMB data elements for collection of financial information. Furthermore, the GCAM requires grant officers to ensure recipients are complying with 2 C.F.R. 200 (cost principles), the GCAM, and the award's terms and conditions. The GCAM also states grant officers should review financial reports to ensure funding drawdowns are consistent with award activities performed, the recipient does not have too much cash on hand, and that cost share requirements have been met, if required. Therefore, grant officers are required to review financial performance and must be afforded the ability to obtain necessary documentation to do so. While, per NASA guidance, grant officers' requests for data should be kept at a minimum and OMB has stated that only OMB-approved data may be solicited, in our opinion "minimum" does not mean "none," an opportunity for additional acceptable OMB financial data exists, and verification of expenditures is necessary.

USRA General Ledger Review

We requested and USRA provided their general ledger for NASA awards for the period beginning January 1, 2015, through December 31, 2019, which consisted of 225,834 transactions.⁴² Of these, 135,650 transactions totaling approximately \$171.8 million were related to 20 of the cooperative agreements in our review.⁴³ The audit team applied a list of approximately 300 keywords regularly used by our data analytics team to identify potentially unallowable costs, such as alcohol, compensation, housing, and premium. When the cooperative agreements' specific transactions were compared against

⁴⁰ As a cooperative agreement recipient, USRA is required to submit SF-425s for NASA Grant Recipients. The reports are self-certified through signature that the reports are "true, complete, and accurate, and the expenditures, disbursements, and cash receipts are for the purposes and objectives set forth in the terms and conditions of the federal award."

⁴¹ 2 C.F.R. § 200.327, *Financial Reporting* (August 13, 2020).

⁴² A general ledger represents the record-keeping system for a company's financial data with debit and credit account records and provides a record of each financial transaction that takes place during the life of an operating company.

⁴³ NASA awarded one cooperative agreement, 80NSSC20M0016, after December 31, 2019, and therefore was not included in the general ledger.

these keywords, 14,808 transactions valued at approximately \$6.8 million were identified across 17 of the 20 agreements.⁴⁴

Due to the number of transactions, limited details available in the general ledger transaction descriptions, and the ambiguity of federal cost principle guidance, we did not review each of these transactions to make an allowability determination. Although USRA management stated they are confident that the internal controls they have in place are sufficient to identify unallowable expenses, we believe that at least some of the transactions we identified were potentially not in accordance with the intent of the cooperative agreements or have not been subject to proper oversight. For example, we identified 91 transactions for which using government funds are generally not permitted or federal guidance is ambiguous, including advertising, alcohol, housing, and moving or relocation expenses. While the number of transactions and associated dollar values are small (\$183,569) compared to the total number of transactions and dollar value, it is possible USRA charged other unallowable costs to NASA. We also identified at least 24 transactions, valued at \$15,937, related to visa applications, premium processing, and processing fee requests that would benefit from additional NASA scrutiny.⁴⁵ 2 C.F.R. 200 states short-term visa costs (as opposed to long-term immigration visits) are generally allowable expenses. While several of the cooperative agreements we reviewed included programs where foreign students or scientists participate in research or educational programs, additional documentation would be required to determine if these transactions are allowable under cost principles.

Executive Compensation Review

We also identified issues with the amount of total executive compensation earned by USRA's President/CEO and paid by the federal government. For the most recent 6-year period, the President/CEO received over \$650,000 in compensation in FY 2015, a figure that increased to over \$950,000 in FY 2020. Although entities that conduct business with the government can pay their executives whatever is negotiated in their compensation packages, 41 U.S.C. 4304 establishes a limit on the amount of such compensation that the government will reimburse (in 2015 the limit was \$487,000 and in 2020 it was \$555,000). Working with the USRA Chief Financial Officer, we identified that for FYs 2015 through 2020 USRA overcharged the government a total of \$246,060 for the President/CEO's compensation package.⁴⁶ According to USRA, this occurred because USRA relied on its previous independent auditors' views on the President/CEO's compensation calculation. USRA hired new auditors in 2020 who advised that previous calculations exceeded the amounts allowable. On March 3, 2021, USRA represented to the OIG that they made the correcting entries in their general ledger, as previously discussed.

⁴⁴ Three of the cooperative agreements reviewed did not have any hits in the keyword search (80NSSC18M0086, 80NSSC19M0111, and NNX16AR31A).

⁴⁵ A citizen of a foreign country who seeks to enter the United States generally must first obtain a U.S. visa, which is placed in the traveler's passport, and a travel document issued by the traveler's country of citizenship.

⁴⁶ USRA provided a detailed spreadsheet detailing calculations of excess executive compensation over established limits. These calculations considered contracts before and after enactment of Pub. L. 113-67, *Bipartisan Budget Act of 2013* (December 26, 2013), establishing new executive compensation limits and use of blended rates to determine the basis to calculate the excess compensation for each year. USRA applied those blended rates to calculate the allowable and unallowable portions of executive compensation. Furthermore, the general ledger does not have sufficient detail to determine the funding source(s) of the executive compensation.

SEVERAL USRA COOPERATIVE AGREEMENTS SHOULD BE CONTRACTS

The primary factor in determining whether an agreement should be a cooperative agreement or contract is the principle purpose of the work—whether it is stimulating a public purpose or providing a direct benefit to the agency. The criteria for both cooperative agreements and contracts is outlined in the GCAM. We found that 12 of the 21 USRA cooperative agreements we reviewed—11 internship and the GESTAR agreements—should have been awarded as contracts because they provide direct benefits to NASA. The lack of controls over the determination process indicates there is the potential that there are additional NASA cooperative agreements where a contract would have been more appropriate. Based on our review of those 12 USRA agreements, the Agency is violating its own policy and its oversight of USRA is more limited than it would have been had NASA used contracts. Using a cooperative agreement vehicle for these projects provided greater autonomy to USRA and resulted in NASA assuming greater risk in the performance of these awards. Moving forward, NASA plans to transition the internship cooperative agreements to contracts, but GESTAR will remain a cooperative agreement.

GCAM Requirements

The GCAM outlines criteria and specific questions grant officers should consider when determining whether the use of a contract or cooperative agreement is appropriate.⁴⁷ Most notably is the principal purpose of the effort—whether the work being solicited is for the direct benefit of the agency or to stimulate a public purpose of support or stimulation. If the principal purpose is to accomplish a NASA need, requirement, or service—in other words, to produce something for NASA’s use or to obtain a direct service for NASA’s use or benefit—the GCAM specifies a contract shall be used as the award instrument.

If the principal purpose of an effort is to support or stimulate a public purpose and substantial involvement from NASA is required, a cooperative agreement is the appropriate award instrument. NASA issues cooperative agreements to educational institutions and organizations for a variety of broad science, technology, research, and development activities. For example, NASA has cooperative agreements with the National Institute of Aerospace for conducting aerospace and atmospheric research in development of new related technologies to operate satellites with little human interaction, reduce noise and vibration in aerospace, and advance technologies in sensors and microsystems; and with the Center for Research and Exploration in Space Science and Technology to conduct observational, experimental, and theoretical research supporting science objectives related to the Sun and solar system, stars, and galaxies.

⁴⁷ GCAM 3.1, “Basic Considerations in Determining Award Instrument.”

Orion Multi-Purpose Crew Vehicle



Source: NASA

In contrast, NASA awards contracts to commercial entities for the design and development of spacecraft, instruments, and support systems and services necessary to advance NASA's scientific knowledge that align with its strategic plan. NASA officials develop requirements that are included in its contracts to accomplish these specific goals for space exploration, science, technology development, and aeronautics. For example, NASA has a contract with Lockheed Martin to build the Orion Multi-Purpose Crew Vehicle, and in 2019 awarded a contract to Northrop Grumman to build the Lunar Gateway Module. Additionally, NASA has contracts with both Paragon TEC and Apache Logical for intern

administrative support services at Glenn Research Center (Glenn) and Kennedy Space Center (Kennedy), respectively.

In the review of the USRA cooperative agreements, we found instances where a contract would have been more appropriate—notably for the NASA intern and GESTAR agreements.

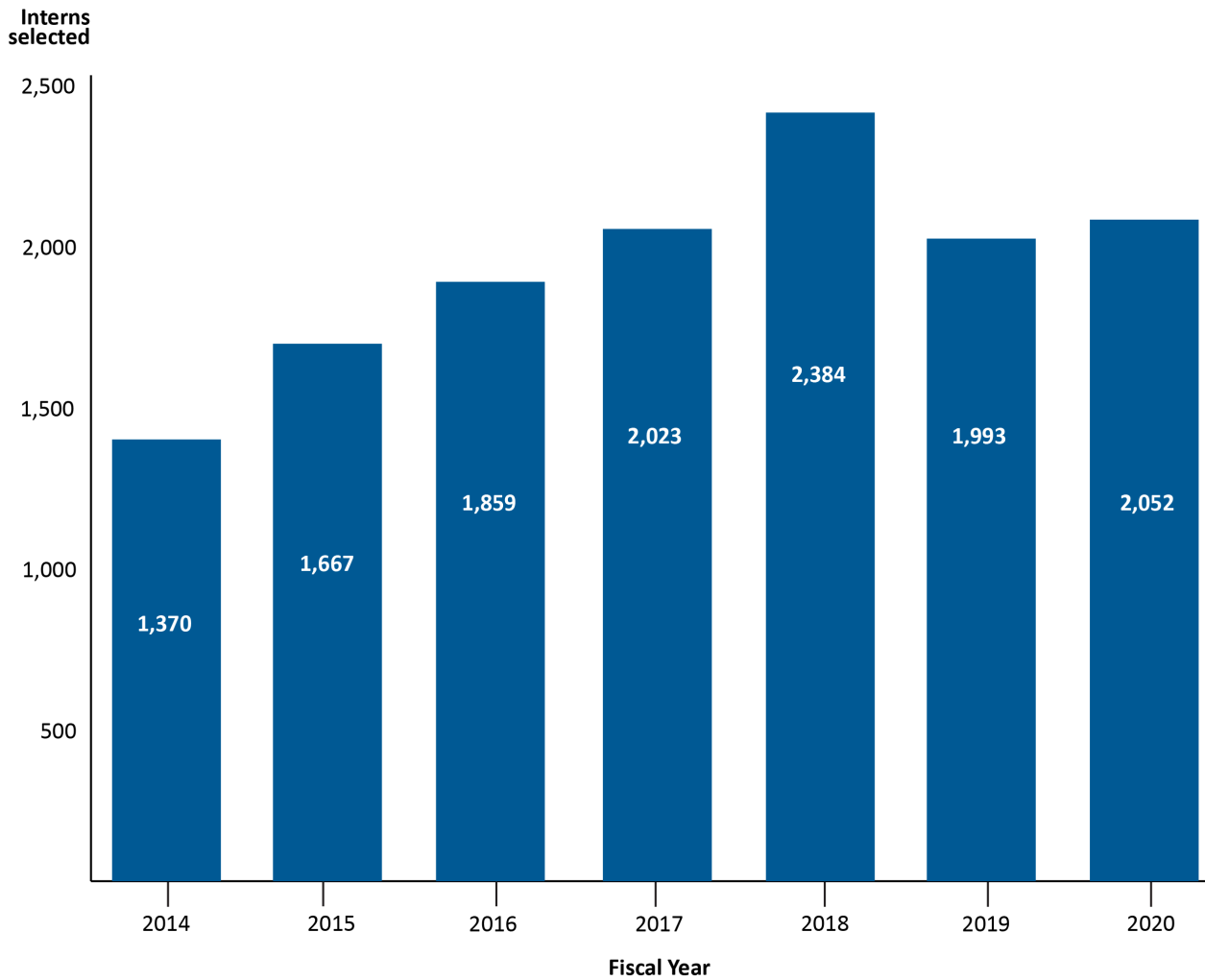
NASA Agreements for Interns

In 2013, NASA awarded USRA a master cooperative agreement and 11 sub-agreements to recruit, identify, and place interns across the Agency.⁴⁸ Prior to this agreement, every Center had its own agreements and ran its own independent internship programs. In 2013, NASA consolidated the internship program under one cooperative agreement for efficiency purposes. However, because each Center wanted to maintain some level of control, NASA Headquarters created a master cooperative agreement for overall management of the program and sub-agreements for each Center. Among the tasks performed under these agreements, USRA collaborates with NASA to identify academically talented students from U.S. high schools and institutions of higher education; directs communications about internship opportunities to minority-serving institutions; and provides administrative support services to the interns.⁴⁹ USRA, on behalf of NASA, recruits interns with the relevant educational background and technical expertise to advance NASA's missions. For example, interns have helped design circuit boards and other new laser technologies for the next generation of fiber optic sensing systems, analyzed data to aid in determining the best landing site for the first human mission to Mars, and assisted with research in a microbiology lab intended to improve the health of humans in space and on Earth. In FY 2020, USRA coordinated and administered the hiring and placement of 2,052 interns at NASA (see Figure 4 for the annual number of NASA interns).

⁴⁸ NASA selected USRA through a competitive solicitation seeking management of internships Agency-wide. The master agreement provides overarching administrative support for the intern program and the 11 sub-agreements—one for Headquarters and each NASA Center and the Jet Propulsion Laboratory—provide intern support for the assigned location.

⁴⁹ Interns include high school, undergraduate, and graduate students.

Figure 4: NASA Interns in FYs 2014 through 2020



Source: NASA.

The current internship agreements included a 5-year period of performance through May 2018 but were recently extended through August 2022 to provide a bridge period for transition as part of an enterprise acquisition review of STEM engagement services.⁵⁰ While most of NASA’s interns are acquired through the USRA master and sub-agreements, both Glenn and Kennedy have separate contracts for portions of their internship efforts. For example, Glenn officials use a contract with Paragon TEC, available for use by other NASA Centers, to recruit and manage most of Glenn’s interns. Glenn only uses the USRA cooperative agreement to obtain part-time interns, a service the Paragon TEC contract does not

⁵⁰ STEM engagement encompasses Agency-wide efforts to attract, engage, and educate students and to support educators, educational institutions, and professional and student organizations. See Appendix B for the complete list of internship cooperative agreements.

provide.⁵¹ Similarly, while Kennedy officials use the USRA internship sub-agreement to recruit and manage its interns, they use a separate Center contract with Apache Logical for intern program coordination duties.⁵²

After reviewing USRA's internship master agreement and sub-agreements, the contracts at Glenn and Kennedy, and interviewing NASA STEM and OCFO officials, we determined that the selection and placement of interns within NASA programs and projects directly benefits the Agency and is not primarily done for a public purpose—a requirement for awarding a cooperative agreement. Therefore, we believe the USRA internship cooperative agreements should have been awarded as contracts, as was done in part by Glenn and Kennedy.

NASA OCFO officials indicated that they agree with our assessment that NASA erred in using cooperative agreements instead of contracts for its internship programs. In late 2019, the Office of STEM Engagement (OSTEM) initiated, with the Office of Procurement, a comprehensive review and assessment of all its procurement vehicles in advance of developing an enterprise acquisition strategy. Because the internship program is one of the most critical services OSTEM provides, the decision was made to extend the USRA internship agreements through August 2022 to provide a bridge period for the transition to the enterprise acquisition solution.⁵³

Goddard Earth Sciences Technology and Research

Although NASA awarded USRA a cooperative agreement in 2011 to manage GESTAR, we identified instances where contract references were made or where contract requirements were imposed. Specifically, we found a statement in the agreement that refers to tasks or task orders, references to the agreement as cost-plus-fee, and requirements for an annual performance assessment. According to Goddard procurement officials, Contractor Performance Assessment Reports (CPAR) were required and completed due to the high-dollar value (\$95.8 million) of the agreement. The CPAR requirement in the agreement noted the need for more detailed subcontractor financial data and continued discussions between NASA and USRA to aid in reporting costs. Additionally, the cooperative agreement includes a statement noting that the agreement is complex and that a senior USRA financial representative had been dedicated solely to GESTAR cooperative agreement directives to allow for clearer allocation of funding.⁵⁴

⁵¹ NASA's contract with Paragon TEC supports a variety of STEM programs across the Agency. It is an indefinite-delivery/indefinite-quantity cost-plus-fixed-fee contract with an estimated cost of \$25 million, which includes a task order for internships valued at approximately \$1.3 million per year.

⁵² Apache Logical provides administrative support functions to NASA under a firm-fixed price contract with indefinite-delivery/indefinite-quantity task orders. The internship portion only accounts for 0.7 percent of the contract's FY 2020 value. Coordination duties include interfacing with Kennedy Directorates for the collection of intern requirements and opportunity details; providing logistics and administrative support for all phases of the internship cycle, including placement, pre-arrival, implementation, and exit tasks; planning, coordinating, and providing logistics support for orientation and training, enrichment, and professional development activities to meet Agency, Center, and program requirements; and providing logistics support for special events, tours, and showcases for interns and mentors.

⁵³ In 2017, NASA initiated the Mission Support Future Architecture Program to optimize all mission support functions with a more interdependent enterprise model that enables the sharing of capabilities across Centers, realigned budget structures, and improved collaboration.

⁵⁴ Cooperative agreement directives work similarly to a contract's task order in that they define a specific project's scope, cost, and schedule, and explain exactly how funding will be spent.

Additionally, according to Goddard procurement officials, there have been instances where the work assigned and charged to the GESTAR agreement did not align with the original scope of work provided for in the cooperative agreement. For example, the primary scope of GESTAR is a research effort where NASA scientists collaborate with other scientists in the scientific community. However, supporting administrative work to establish a visiting scientists' program was later added to the agreement's scope of work by technical representatives at Goddard. To rectify this, Goddard procurement officials provided additional scrutiny when technical representatives attempted to task USRA with additional work to ensure the scope of work was allowable under the agreement terms.

Furthermore, the agreement includes requirements for a visiting fellows program and there are restrictions on funding activities with China in policy established pursuant to the Department of Defense and public law.⁵⁵ This policy is written into all NASA cooperative agreements and forbids NASA from using appropriated funds to enter into or fund any grant or cooperative agreement with China or any Chinese-owned company.⁵⁶ When OIG inquired, Goddard procurement officials were unaware whether any of its visiting fellows were Chinese citizens. Additionally, as noted previously, we identified at least 24 transactions, valued at \$15,937 in USRA's general ledger related to visa applications, premium processing, and processing fees for immigration. However, we are unable to determine if these were specifically related to Chinese recipients.

As previously stated, the agreement was initially awarded for \$95.8 million and in September 2015 NASA provided an augmentation of \$21 million for additional within-scope work. In September 2016, NASA added another \$175 million and 5 years to the agreement. The current value of the agreement is \$291.5 million, an increase of approximately \$195.7 million over the initial award amount with a total 10-year period of performance expiring in May 2021. When asked why the cost increased so significantly, Goddard procurement officials stated a portion of the increase was due to the exercise of the 5-year option but could not provide additional reasons for the increase in award value. Solicitation procedures have already begun for the follow-on cooperative agreement which was expected for award in March 2021 at an estimated value of \$99 million over 5 years; however, that date is now uncertain.⁵⁷ Procurement officials stated that the scope of work for the follow-on award is essentially the same as the current GESTAR agreement but they anticipate fewer tasks on the agreement.

Based on our review, we believe the follow-on award should be a contract, not a cooperative agreement as currently planned. Specifically, the purpose of the agreement—to provide observational, experimental, and theoretical research in support of NASA strategic Earth science objectives—provides NASA with a direct benefit and given the areas of concern identified by the OIG on the current agreement, the follow-on effort warrants the more stringent administrative and financial oversight afforded through a contract subject to federal acquisition requirements. We communicated our concerns and provided our opinion on the use of the appropriate procurement vehicle to NASA Headquarters and Goddard procurement officials prior to the award date. They indicated they are aware of the complexity of the agreement and have held previous discussions as to whether GESTAR should be a contract or cooperative agreement. However, Goddard procurement officials stated a cooperative agreement was the preferred procurement method given their flexibility and the purpose of

⁵⁵ Full-Year Appropriation Act, Public Law 112-10, Section 1340(a); and The Consolidated and Further Continuing Appropriation Act of 2012, Public Law 112-55, Section 539.

⁵⁶ NASA Grant Information Circular 12-01, *Class Deviation Implementing NASA Restrictions on Funding Activities with the People's Republic of China* (February 9, 2012).

⁵⁷ As of April 2021, NASA stated that proposal evaluations were still ongoing and there was no anticipated award date.

the GESTAR agreement. Additionally, they attested to implementing measures for the follow-on award to mitigate additional work that was added to the current agreement, such as supporting general administrative services that did not meet the intent of research as defined in the scope of work.⁵⁸ Although the solicitation document specifies NASA may choose to cancel the cooperative agreement notice or not make an award, Goddard procurement officials stated that because proposals have been received and evaluations were underway as of April 2021, it was most likely too late to change the planned procurement strategy.

⁵⁸ These measures include a thorough review of cooperative agreement directives to ensure anticipated work falls within the agreement's scope, discussions with NSSC representatives to ensure the cooperative agreement is not administered on a transactional basis, and the ability to add language to the statement of work so that only services can be provided.

CONCLUSION

In FY 2019, NASA awarded approximately \$427 million in cooperative agreements that allow flexibility for both the Agency and recipient to provide research and services intended for a public purpose. However, as we have previously reported, NASA has struggled to provide appropriate management and oversight of certain cooperative agreements, and we found similar weaknesses in the Agency's oversight of its cooperative agreements with USRA. As one of NASA's largest research partners with awards totaling nearly \$578 million from FY 2017 through FY 2020, USRA provides NASA with access to educational institutions to assist with lunar and planetary sciences, space life science, science facility management and operations, and STEM education activities. As an independent, nonprofit organization, USRA has performed work for NASA under contracts, grants, and cooperative agreements for more than 50 years.

Despite general satisfaction NASA officials expressed for USRA's work, we found that the Agency does not have adequate management oversight of USRA's \$476 million in cooperative agreements, which make up approximately 82 percent of the Agency's awards to USRA in the same approximate 3-year timeframe. Management of cooperative agreements across NASA was consolidated and centralized at NSSC in 2006, but management approval beyond the grant officer is not required for most extensions and augmentations, resulting in significant increases in agreements' values without higher levels of scrutiny. We also found the transactional nature of NSSC's management limits the familiarity grant officers have with specific cooperative agreements, such that extensions and augmentations are routinely granted to USRA without a comprehensive understanding or evaluation of the scope and prior history of the agreements to ensure that the modifications are in the best interest to NASA. Additionally, while officials expressed positive verbal feedback on work conducted on several cooperative agreements we reviewed, there are no written NASA evaluations of USRA's performance apart from the GESTAR agreement, thereby limiting NASA's ability to inform future award decisions.

While we recognize the flexibilities inherent in cooperative agreements, we believe these flexibilities should be balanced with ensuring sufficient oversight. Additional levels of review would provide NASA officials with better insight into where program funding is being allocated and ensure efforts fall within the agreement's scope of work. Higher-level procurement officials have a broader view of the entire portfolio of procurement options available and may decide work is better suited under an existing or planned alternate procurement vehicle. The lack of higher-level review increases the Agency's risk that adequate consideration may not have been given to other available procurement options where NASA could potentially receive better value for its money or increased oversight of how the Agency's money is being spent.

Adequate financial oversight is necessary to ensure federal dollars awarded to cooperative agreement recipients are used for appropriate expenses. While NASA evaluates and certifies the allowability, allocability, and reasonableness of costs when it receives budget proposals, subsequent reviews are not required. Further, limits on what kind of financial data NASA can request from award recipients restricts the Agency's ability to conduct financial oversight. Therefore, without additional information it is not possible to ensure the individual costs totaling up to \$6.8 million charged to NASA in 17 agreements were allowable, whether the recipient's certifications of allowability were valid, or whether the costs were adequately documented.

Finally, we determined that 12 of the 21 cooperative agreements we reviewed (11 internship and the GESTAR cooperative agreements) should be contracts because they provide a direct benefit to NASA as opposed to carrying out a public purpose. NASA could increase its level of oversight and reduce risk by implementing the more extensive requirements applicable to contracts as opposed to cooperative agreements provided by the FAR.

RECOMMENDATIONS, MANAGEMENT'S RESPONSE, AND OUR EVALUATION

To increase management and financial oversight accountability for cooperative agreements, we recommended the Acting Chief Financial Officer direct the OCFO Grants Policy and Compliance Branch to:

1. Revise the GCAM to add criteria and review approval thresholds beyond grant and technical officers for cooperative agreement extensions and augmentations.
2. Require technical sponsoring offices to provide grant officers with a determination as to why requested extensions or augmentations, that will result in an agreement exceeding 5 years, are in the best interest of the government or otherwise specified by a program's unique needs, policies, or procedures.
3. Develop a template or standardized format for officials to use in evaluating recipient performance.
4. Revise the GCAM to enhance NASA's existing review of the PMS financial information requiring the periodic sampling of detailed supporting documentation to validate the accuracy and completeness of expenditures charged to the Agency.

Furthermore, the Executive Director of the NSSC should:

5. Reevaluate and reassign grant officers to specific agreements to improve oversight and accountability.
6. Have grant officers modify current cooperative agreements to include NASA's responsibility to evaluate performance detailing how the recipient's progress will be measured.
7. Conduct periodic reviews of cooperative agreements to ensure work performed under the agreement is consistent with a cooperative agreement and not a contract.
8. Develop a plan for retaining NASA's performance evaluation reports in a centralized database for access by grant and contracting officers.
9. Ensure that the follow-on GESTAR cooperative agreement is assigned to a specific grant officer(s) and not subject to transactional processing to ensure the appropriate oversight of the complex nature of the effort.
10. Require that the NSSC Division Chief, Procurement Services direct grant officers to review USRA expenditures for allowability and recover any expenditures deemed unallowable.
11. Ensure that the excess \$246,060 charged for executive compensation is credited back to the Agency in USRA's general ledger.

In order to increase accountability over NASA agreements, we recommended NASA's Associate Administrator for STEM Engagement:

12. Complete planned actions to finalize, document, and deliver a plan and timeline for transitioning all internship cooperative agreements to contracts before the USRA cooperative agreement extensions end in August 2022.

We provided a draft of this report to NASA management, who concurred or partially concurred with 10 of our 12 recommendations and described actions they plan to take. We consider management's comments responsive and therefore the recommendations are resolved and will be closed upon completion and verification of the proposed corrective actions.

Management did not concur with Recommendation 5, stating that an NSSC grant officer administers awards to an assigned Center and serves as the consistent point-of-contact for technical officers and programs. While we agree that assigning grant officers to specific Centers provides consistency for program and technical staff, our review found a lack of familiarity by grant officers and consistency in assignment of grant officers overseeing specific agreements at those Centers. As highlighted in the report, 19 of 21 agreements had between 2 and 13 NSSC grant officers processing numerous actions. This transactional approach can limit the general oversight of cooperative agreements and grant officers' familiarity with specific cooperative agreements. Given the flexibility inherent in the use of cooperative agreements, we believe it essential that a single grant officer be assigned to administer each agreement to provide continuity and the appropriate level of both management and financial oversight.

In addition, management did not concur with Recommendation 11, stating that federal requirements limiting executive compensation are not applicable to cooperative agreements or grants. Regardless, USRA also has contracts with NASA and, as a federal government contractor, must limit the amount of executive compensation it charges the federal government. Since USRA communicated to the OIG that entries were made to correct the excess charges, we continue to request that the Agency verify that it received the appropriate credit.

Recommendations 5 and 11 remain unresolved pending further discussions with Agency management.

Management's comments are reproduced in Appendix E. Technical comments provided by management and revisions to address them have been incorporated as appropriate.

Major contributors to this report include Ray Tolomeo, Science and Aeronautics Research Director; Diane Choma, Project Manager; Theresa Becker, Sarah Beckwith, Jason Hensley, Karlo Torres, Jen DeSio, Emily Bond, Norm Conley, Shari Bergstein, and Cody Bryant.

If you have questions about this report or wish to comment on the quality or usefulness of this report, contact Laurence Hawkins, Audit Operations and Quality Assurance Director, at 202-358-1543 or laurence.b.hawkins@nasa.gov.

Paul K. Martin
Inspector General

APPENDIX A: SCOPE AND METHODOLOGY

We performed this audit from March 2020 through June 2021 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.

The scope of this audit was NASA's management and oversight of its cooperative agreements with USRA. To conduct our work, we first identified an overall universe of contracts, grants, and cooperative agreements. We found that cooperative agreements represented the largest percentage of USRA funding (see Figure 3). We generated a query in the Federal Procurement Data System for active cooperative agreements between October 1, 2017 and April 7, 2020, choosing this time frame to increase the probability that the cooperative agreements would still be active resulting in 21 cooperative agreements that became the scope of our review. In addition, we reviewed and analyzed NASA and USRA documentation, which provided insight into the overall management, cost, schedule, performance, and management of each one of the cooperative agreements. Documentation included original cooperative agreements and relevant supplements; annual progress reports; quarterly reports; and USRA general ledger, payroll, and other financial data files. The general ledger review included NASA transactions between January 1, 2015 through December 31, 2019, which included 20 of the 21 cooperative agreements pulled from the Federal Procurement Data System. Additionally, we obtained publicly available tax documentation and other records to review executive compensation. During the audit, we interviewed NASA management and personnel from the Office of Procurement, OCFO, OSTEM, NSSC, as well as grant officers at NASA Centers and USRA management.

Assessment of Data Reliability

We relied upon computer-processed data to perform this audit. The computer-processed data used in this audit materially affected the findings; therefore, we assessed the reliability and validity of the general ledger. We did this assessment by (1) performing electronic testing for obvious errors in accuracy and completeness; (2) reviewing related documentation; and (3) working closely with data owners to identify any data problems. When we encountered discrepancies (such as missing data, excessive quantities of \$0, and incorrect coding), we worked with USRA and NASA data owners to identify the causes of the discrepancies and correct them when necessary. Although a data owner manually used a spreadsheet—prone to human error—in order to manage quarterly PMS payments, we did not assess this spreadsheet for data reliability nor was it significant to our audit work.

We evaluated and verified several general ledger transactions' allowability, allocability, and reasonableness. We then compared the types of costs charged by USRA to applicable federal cost principles and to NASA guidance for compliance with financial oversight controls. Although we identified that NASA was overcharged and there may be unallowable costs included in the general ledger (see finding discussion), ultimately, we determined that USRA had internal controls in place to mitigate the risk of inaccuracies and, therefore, the data was sufficiently reliable for the purposes of this audit.

Review of Internal Controls

We reviewed federal regulations and NASA policies and procedures to determine whether NASA's internal controls ensure effective management of Agency procurements. We assessed internal controls associated with NASA's self-evaluation process to determine whether USRA management issues exist and if NASA's management identified and reported any related control weaknesses.

Specifically, we reviewed the following documentation:

- 41 U.S.C. § 4304, *Specific Costs Not Allowable* (January 7, 2011)
- Public Law 113-67, *Bipartisan Budget Act of 2013* (December 26, 2013)
- 2 C.F.R. 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Award*, (January 1, 2014)
- 2 C.F.R. 230, *Cost Principles for Non-Profit Organizations (OMB Circular A-122)* (January 1, 2012)
- FAR 31, *Contract Cost Principles and Procedures* (FY 2019)
- FAR Subpart 42.15, *Contractor Performance Information* (March 31, 1995)
- NASA FAR Supplement 1852, Subpart 1852.231-71, *Determination of Compensation Reasonableness* (April 2015)
- NASA Grant and Cooperative Agreement Manual (May 28, 2020)
- Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, *Use of Blended Rates to Implement Multiple Compensation Caps* (October 24, 2014)

We discuss the control weaknesses we identified in the body of this report. Our recommendations, if implemented, should correct the weaknesses we identified.

Prior Coverage

Although there have been no issued reports particular to USRA's cooperative agreements, during the last 5 years, the NASA OIG; the Government Accountability Office (GAO); the Committee for Purchase From People Who Are Blind or Severely Disabled (AbilityOne Program); the Departments of Agriculture, Commerce, the Interior, Justice, and State; and the Small Business Administration Offices of Inspectors General have issued 25 reports of significant relevance to the overall management of cooperative agreements. Unrestricted reports can be accessed at <https://oig.nasa.gov/audits/auditReports.html>, <https://www.gao.gov>, and <https://www.oversight.gov/reports>.

NASA Office of Inspector General

Audit of SETI Institute ([IG-19-011](#), March 6, 2019)

NASA's Management of GISS: The Goddard Institute for Space Studies ([IG-18-015](#), April 5, 2018)

Audit of the National Space Biomedical Research Institute ([IG-18-012](#), February 1, 2018)

Government Accountability Office

Grants Management: Actions Needed to Address Persistent Grant Closeout Timeliness and Undisbursed Balance Issues (GAO-16-362, April 14, 2016)

Committee for Purchase from People Who Are Blind or Severely Disabled (AbilityOne Program)

Performance Audit Report on the U.S. AbilityOne Cooperative Agreements (April 8, 2020)

Department of Agriculture

Texas Boll Weevil Eradication Foundation Cooperative Agreement (33099-0001-23, May 31, 2018)

Department of Commerce

NIST Should Improve Controls for Monitoring R&D Grants and Cooperative Agreements (OIG-18-025-A, September 10, 2018)

Department of the Interior

Audit of Costs Claimed under NAS Cooperative Agreement with OSMRE Found No Issues (2017-FIN-024, September 18, 2018)

The Bureau of Reclamation's Cooperative Agreement No. R16AC00087 With the Panoche Drainage District (2017-WR-048, July 12, 2018)

Department of Justice

Audit of the Office of Justice Programs Cooperative Agreement Awarded to the Center for Children's Law and Policy, Inc. (21-050, March 16, 2021)

Audit of the Office of Justice Programs Internet Crimes Against Children Task Force Cooperative Agreements Awarded to the Sedgwick County Sheriff's Department, Wichita, Kansas (21-009, December 2, 2020)

Audit of the Office of Justice Programs Cooperative Agreements Awarded to the Colorado Organization for Victim Assistance, Denver, Colorado (20-066, May 27, 2020)

Audit of the Office of Justice Programs Cooperative Agreements Awarded to Refugee Services of Texas, Inc., Dallas, Texas (20-046, March 31, 2020)

Audit of the Office of Justice Programs Cooperative Agreement and the Office on Violence Against Women and Grant Awarded to Lone Star Legal Aid, Houston, Texas (GR-60-19-010, September 5, 2019)

Audit of the Office of Justice Programs Comprehensive Tribal Victim Assistance Program Cooperative Agreements Awarded to the Choctaw Nation of Oklahoma, Durant, Oklahoma (GR-60-19-009, August 15, 2019)

Audit of the Office of Justice Programs Cooperative Agreement Awarded to the Vera Institute of Justice, New York, New York (GR-70-19-005, June 13, 2019)

Audit of the Office of Justice Programs Cooperative Agreements Awarded to the International Institute of Buffalo, Buffalo, New York (GR-70-19-004, May 9, 2019)

Audit of the Office on Violence Against Women Cooperative Agreements Awarded to the Southwest Center for Law and Policy, Tucson, Arizona (GR-60-19-004, March 26, 2019)

Audit of the Office of Justice Programs Cooperative Agreement Awarded to the American Indian Development Associates, LLC, Albuquerque, New Mexico (GR-60-18-004, March 22, 2018)

Audit of the Office of Justice Programs Cooperative Agreement Awarded to the Alaska Institute for Justice, Anchorage, Alaska (GR-90-18-001, March 15, 2018)

Audit of the Office of Justice Programs Grants and Cooperative Agreements Awarded to the Pueblo of Jemez, Sandoval County, New Mexico (GR-60-18-002, December 20, 2017)

Audit of the Office of Justice Programs Office of Juvenile Justice and Delinquency Prevention Cooperative Agreements Awarded to the National Center for Missing and Exploited Children (GR-30-18-001, December 6, 2017)

Department of State

Audit of Humanitarian Assistance Cooperative Agreements Supporting Internally Displaced Persons in Iraq (AUD-MERO-19-20, March 25, 2019)

Audit of the Administration of Selected Cooperative Agreements Awarded to the Institute of International Education by the Bureau of Educational and Cultural Affairs (AUD-CGI-18-15, February 13, 2018)

Small Business Administration

Audit of SBA's Cooperative Agreement With Arsenal Business and Technology Partnership's Veterans Business Outreach Center (20-09, March 24, 2020)

APPENDIX B: COOPERATIVE AGREEMENTS REVIEWED

Table 6 shows the 21 cooperative agreements reviewed during the audit of USRA cooperative agreements and provides descriptions of what each cooperative agreement was for, the period of performance, and the maximum potential value.

Table 6: Cooperative Agreements Reviewed

| Agreement Number | Short Title | Cooperative Agreement Description | Period of Performance | Maximum Potential Value ^a |
|------------------|-------------------------------|---|-------------------------|--------------------------------------|
| 80MSFC17M0022 | Marshall | Collaborative scientific research efforts with Marshall performed primarily at the National Space Science Technology Center, as well as limited support for the Nuclear Thermal Propulsion team | 9/8/2017 to 8/31/2022 | \$14,368,909 |
| 80NSSC17M0004 | ARES | Support of Astromaterials Research and Exploration Services (ARES) | 8/1/2017 to 7/31/2022 | \$2,874,190 |
| 80NSSC18M0086 | MINDS | Multi-Decadal Nitrogen Dioxide and Derived Products from Satellites (MINDS) | 6/8/2018 to 6/7/2023 | \$521,474 |
| 80NSSC19M0111 | TTE | Vulnerability of the Taiga-Tundra Ecotone: Predicting the magnitude, variability, and rate of change at the intersection of Arctic and Boreal ecosystems | 3/26/2019 to 3/25/2022 | \$267,074 |
| 80NSSC20M0016 | Lunar Science and Exploration | Transformative Lunar Science and Exploration: Integrating sample analyses, mission studies, and next generation training to meet the strategic goals of science and human exploration | 1/17/2020 to 10/14/2024 | \$3,202,977 |
| NNG11HP16A | GESTAR | Providing research, instrument technology, and information technology to GESTAR in support of NASA's Earth science | 5/11/2011 to 5/10/2021 | \$291,489,245 |
| NNX11AP82A | MSL | Mars Science Laboratory Investigations: Support for the Chemical and Mineralogy instrument | 10/1/2011 to 12/31/2020 | \$1,173,445 |
| NNX13AJ37A | NASA Internships | NASA Internships | 5/13/2013 to 5/12/2021 | \$27,379,474 |
| NNX13AJ38A | EDU CAN | NASA Internships | 5/13/2013 to 5/12/2021 | \$5,500,000 |
| NNX13AJ39A | Props-2 | NASA Internships | 5/13/2013 to 5/12/2021 | \$1,700,000 |
| NNX13AJ40A | NASA Internships | NASA Internships | 5/13/2013 to 5/12/2021 | \$358,497 |

| Agreement Number | Short Title | Cooperative Agreement Description | Period of Performance | Maximum Potential Value ^a |
|------------------|------------------|---|------------------------|--------------------------------------|
| NNX13AJ41A | Props-2 | NASA Internships | 5/13/2013 to 5/12/2021 | \$15,308,154 |
| NNX13AJ42A | EDU CAN | NASA Internships | 5/13/2013 to 5/12/2021 | \$1,400,000 |
| NNX13AJ44A | EDU CAN | NASA Internships | 5/13/2013 to 5/12/2021 | \$14,000,000 |
| NNX13AJ45A | Props-2 | NASA Internships | 5/13/2013 to 5/12/2021 | \$6,000,000 |
| NNX13AJ46A | EDU CAN | NASA Internships | 5/13/2013 to 5/12/2021 | \$19,000,000 |
| NNX13AJ47A | NASA Internships | NASA Internships | 5/13/2013 to 5/12/2021 | \$7,250,000 |
| NNX13AJ48A | Props-2 | NASA Internships | 5/13/2013 to 5/12/2021 | \$623,101 |
| NNX15AL12A | LPI | Lunar and Planetary Institute (LPI) Operations | 5/19/2015 to 5/18/2021 | \$28,969,118 |
| NNX16AR31A | FERMI | Fermi Gamma-ray Space Telescope: Spectral lags from photon flux light curves of bright Gamma-ray Burst Monitor gamma-ray bursts | 7/21/2016 to 7/20/2020 | \$36,276 |
| NNX17AD69A | GEOS-5 | Goddard Earth Observing System, Version 5 forecasting and modeling in support of Arctic-Boreal Vulnerability Experiment airborne research | 1/3/2017 to 12/31/2020 | \$224,805 |

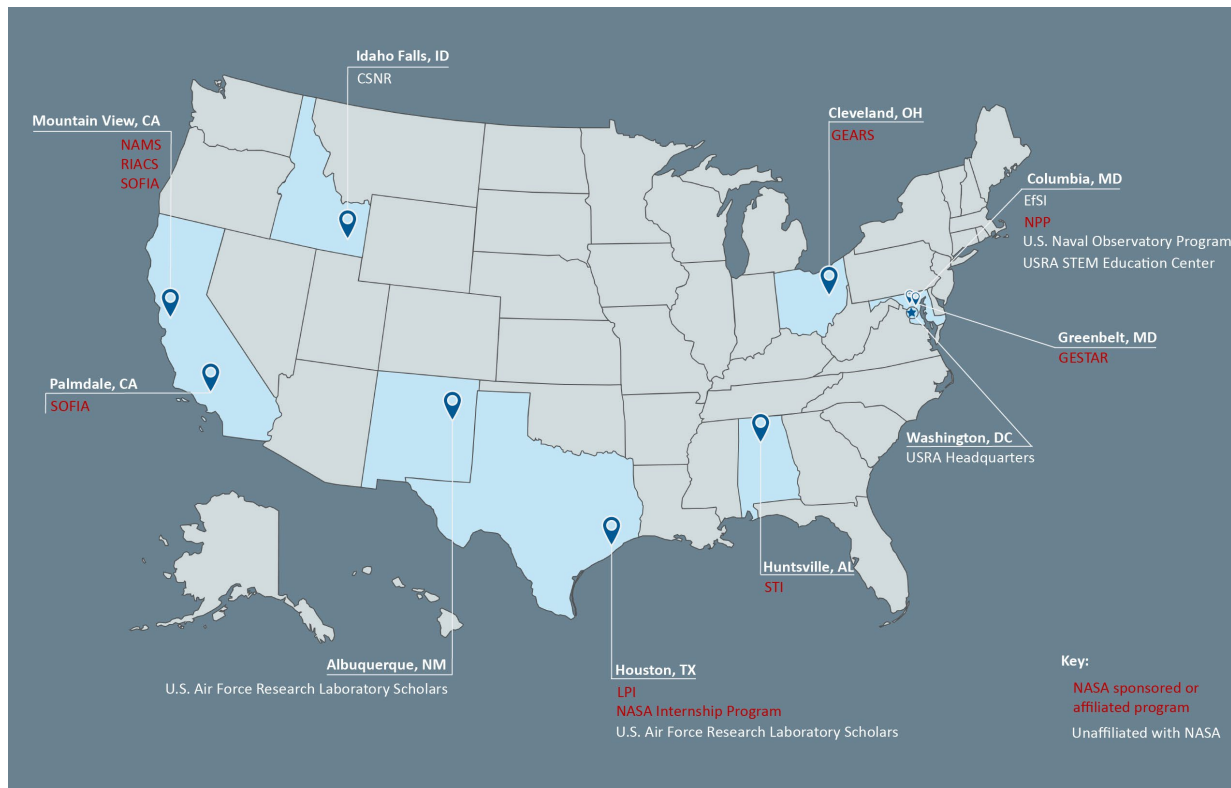
Source: NASA OIG presentation of Agency data.

^a Maximum potential value equals the original award value plus subsequent modifications.

APPENDIX C: FIGURE 2 DETAILS OF PROJECTS

This appendix provides details of projects identified in Figure 2. Project titles in red font in the figure and in the descriptions are NASA-sponsored or NASA-affiliated programs.

Figure 5: USRA Locations and Associated Government Programs



Source: USRA.

| Term | Description of Project |
|-------|--|
| CSNR | The Center for Space Nuclear Research (CSNR) was created by the Idaho National Laboratory and USRA in 2005 to foster collaboration with university scientists. CSNR scientists and engineers research and develop advanced space nuclear systems, including power systems, nuclear thermal propulsion, and radioisotopic generators. |
| EfSI | The Earth from Space Institute (EfSI) is dedicated to supporting the development of long-term strategies for reducing disaster risk and promoting community resilience using the unique vantage point of space. |
| GEARS | The Glenn Engineering and Research Support (GEARS) contract provides engineering, research, and scientific support for communications and intelligent systems, power, propulsion, materials and structures, and systems engineering and architecture. Work under the contract includes facilities engineering, test engineering, |

| | |
|-------------------------|--|
| | manufacturing engineering, project management, and data management, and scheduling support. |
| GESTAR | GESTAR conducts collaborative research, mainly within Goddard’s Earth Sciences Division, but also with the Solar Systems Exploration Division, Office of Education, and the Office of Public Affairs. Scientists and staff at GESTAR, in collaboration with NASA and other investigators, conceive and develop new space-based missions; provide mission requirements; conduct research that explains the behavior of Earth and other planetary systems; and create engagement media that tell NASA’s story of exploration and discovery on Earth and beyond. |
| LPI | The Lunar and Planetary Institute’s (LPI) mission is to advance understanding of the solar system by providing science, service, and inspiration to the world. LPI serves as a scientific forum attracting visiting scientists, postdoctoral fellows, students, and resident experts; supports and serves the research community through newsletters, meetings, and other activities; collects and disseminates planetary data while facilitating the community’s access to NASA science; and engages, excites, and educates the public about space science and invests in the development of future generations of explorers. |
| NAMS | The NASA Academic Mission Services (NAMS) is a USRA-led team that focuses on tasks to assist NASA Ames Research Center with understanding navigation of unpiloted aircraft systems, air traffic management, autonomous systems, airborne sciences, aeroacoustics, synthetic biology, quantum computing, and small spacecraft development. The latter includes development of airborne remote sensing technologies to monitor carbon cycling, habitats, vegetation structure, and growth. |
| NASA Internship Program | NASA’s internship program provides students with the opportunity to participate in research or other experiential learning opportunities under the guidance of a mentor at NASA. |
| NPP | The NASA Postdoctoral Program (NPP) provides early-career and more senior scientists the opportunity to share in NASA’s mission by working on 1- to 3-year assignments with NASA scientists and engineers at NASA Centers and institutes to advance NASA’s missions in earth science, heliophysics, planetary science, astrophysics, space bioscience, aeronautics, engineering, human exploration and space operations, astrobiology, and science management. |
| RIACS | The Research Institute for Advanced Computer Science (RIACS) is a joint collaboration between USRA and the Ames Research Center. The Institute was created to conduct basic and applied research in computer science, covering a broad range of research topics of interest to the aerospace community including supercomputing, computational fluid dynamics, computational chemistry, high performance networking, and artificial intelligence. |
| SOFIA | The Stratospheric Observatory for Infrared Astronomy (SOFIA) is a joint program between NASA and the German Aerospace Center. SOFIA is comprised of a Boeing 747SP aircraft modified to accommodate a 2.5-meter gyro-stabilized telescope that is capable of making observations from onboard an aircraft. |

| | |
|---|---|
| STI | The USRA Science and Technology Institute (STI) works closely with the Marshall Space Flight Center and the University of Alabama in Huntsville in its efforts in astronomy, astrophysics, earth sciences, and heliophysics research. |
| U.S. Air Force Research Laboratory Scholars | The U.S. Air Force Research Laboratory Scholars Program offers stipend-paid summer internship opportunities to undergraduate and graduate level university students pursuing STEM degrees, as well as upper-level high school students; select locations also offer internships to university students pursuing education-related degrees and K-12 professional educators. The selected interns have hands-on experiences working with full-time scientists and engineers on research and technology while contributing to research-based projects. |
| U.S. Naval Observatory Program | USRA research at the U.S. Naval Observatory in Washington, D.C. centers around the optical interferometer project and is conducted within the Naval Research Lab Space Science Division. |
| USRA STEM Education Center | Also known as the USRA STEMaction Center, the Center is working to strengthen the workforce of the future and ensure that the talents of young people, especially those from low-income and minority families, are developed. |

APPENDIX D: SCHEDULE OF QUESTIONED COSTS WITH DOLLAR-RELATED FINDINGS

Table 8 summarizes the questioned costs identified during our audit and discussed in this report. Questioned costs related to overcharges for executive compensation were due to USRA errors, as detailed in the report.

| Issue | Recommendation # | Questioned Costs ^a |
|--|------------------|-------------------------------|
| Prior years' overcharges of executive compensation | 11 | \$246,060 |
| Total | | \$246,060 |

Source: NASA OIG Analysis

^a Questioned Costs are expenditures that are questioned by the OIG because of alleged violation of law, regulation, or contractual requirement governing the expenditure of funds; costs that are not supported by adequate documentation at the time of our audit; or are unallowable, unnecessary, or unreasonable.

APPENDIX E: MANAGEMENT'S COMMENTS

National Aeronautics and
Space Administration

Mary W. Jackson NASA Headquarters
Washington, DC 20546-0001



July 1, 2021

Reply to Attn of: Office of the Chief Financial Officer

TO: Assistant Inspector General for Audits

FROM: Chief Financial Officer (Acting)

SUBJECT: Agency Response to OIG Draft Memorandum, "Management of the Universities Space Research Association" (A-20-006-00)

The National Aeronautics and Space Administration (NASA) appreciates the opportunity to review and comment on the Office of Inspector General (OIG) draft memorandum entitled, "NASA's Management of Universities Space Research Association's Cooperative Agreements" (A-20-006-00), dated June 8, 2021.

In the draft memorandum, the OIG makes 12 recommendations addressed to the Acting Chief Financial Officer, the Executive Director of the NASA Shared Services Center (NSSC), and the Associate Administrator for Science, Technology, Engineering, and Mathematics (STEM) in order to improve the management and financial oversight of cooperative agreements.

Specifically, the OIG recommends the Acting Chief Financial Officer direct the Office of the Chief Financial Officer (OCFO) Grants Policy and Compliance (GPC) Branch to:

Recommendation 1: Revise the GCAM to add criteria and review and approval thresholds beyond grant and technical officers for cooperative agreement extensions and augmentations.

Management's Response: NASA concurs with this recommendation.

GPC updates the GCAM annually. During the 2021 Grant and Cooperative Agreement Manual (GCAM) revision cycle, which is expected to conclude in November 2021, GPC will develop new grant and cooperative agreement review and approval thresholds for Grant Officers (GO) and Technical Officers (TO). The specific review and approval thresholds, as well as roles and responsibilities, will be developed in consultation with the NSSC.

Estimated Completion Date: November 30, 2021.

Recommendation 2: Require technical sponsoring offices to provide grant officers with a determination as to why requested extensions or augmentations, that will result in an

agreement exceeding 5 years, are in the best interest of the government or otherwise specified by a program's unique needs, policies, or procedures.

Management's Response: NASA concurs with this recommendation.

During the annual GCAM revision cycle, GPC will update the GCAM to include the requirement that TOs provide GOs with a written description as to why extensions or augmentations that will result in an agreement exceeding five years is in the best interest of the Government or otherwise required by a program's unique needs, policies, or procedures.

Estimated Completion Date: November 30, 2021.

Recommendation 3: Develop a template or standardized format for officials to use in evaluating recipient performance.

Management's Response: NASA concurs with this recommendation.

GPC is in the process of developing a routine monitoring plan (RMP) that will be released in August 2021. The RMP will include several new routine post-award monitoring requirements, including the requirement that NASA personnel document their reviews of performance and financial reports. Regarding performance reports, the RMP will require TOs to document their review and approval or denial of annual performance reports.

Estimated Completion Date: The RMP will be released in August 2021, and GOs and TOs will have until December 31, 2021, to implement the policy.

Recommendation 4: Revise the GCAM to enhance NASA's existing review of the Payment Management System (PMS) financial information requiring the periodic sampling of detailed supporting documentation to validate the accuracy and completeness of expenditures charged to the Agency.

Management's Response: NASA concurs with this recommendation.

The RMP will also include a new transaction testing requirement whereby GOs will be required to review a sample of expenditures and related supporting documentation from each NASA grant or cooperative agreement to determine if the expenditures are allowable, allocable, and reasonable. GOs will also review expenditures for compliance with statutes prohibiting the procurement of telecommunications and video surveillance services or equipment from certain companies (e.g., Huawei Technologies Company, ZTE Corporation, etc.). GOs will then be required to follow up with award recipients regarding questioned or disallowed costs.

Estimated Completion Date: The RMP will be released in August 2021, and GOs and TOs will have until December 31, 2021, to implement the policy.

Furthermore, the OIG recommends the Executive Director of the NSSC should:

Recommendation 5: Reevaluate and reassign grant officers to specific agreements to improve oversight and accountability.

Management's Response: NASA non-concurs with this recommendation.

NSSC currently has two teams, one awards grants and the other administers the grants after award. Grant administration is done by an NSSC Administrative Grant Officer assigned to a NASA Center to ensure TOs and programs have a consistent point of contact. This results in each grant having consistent oversight by one GO. Administration may change when a GO transfers to a different position during the grant's period of performance. This approach ensures the NSSC can effectively manage the grants and cooperative agreements portfolio in the most efficient and cost-effective manner.

Estimated Completion Date: N/A

Recommendation 6: Have grant officers modify current cooperative agreements to include NASA's responsibility to evaluate performance detailing how the recipient's progress will be measured.

Management's Response: NASA concurs with this recommendation.

GPC is in the process of developing a RMP that will be released in August 2021. The RMP will include several new routine post-award monitoring requirements, including the requirement that NASA personnel document their reviews of performance and financial reports. Regarding performance reports, the RMP will require TOs to document their review and approval or denial of annual performance reports.

Estimated Completion Date: The RMP will be released in August 2021, and GOs and TOs will have until December 31, 2021, to implement the policy.

Recommendation 7: Conduct periodic reviews of cooperative agreements to ensure work performed under the agreement is with a cooperative agreement and not a contract.

Management's Response: NASA concurs with this recommendation.

NSSC will update the cover page to the NASA annual progress report submitted by the recipients to include information that will allow the GO to determine that the award still meets the requirements for a grant or cooperative agreement.

Estimated Completion Date: November 30, 2021.

Recommendation 8: Develop a plan for retaining NASA's performance evaluation reports in a centralized database for access by grant and contracting officers.

Management's Response: NASA concurs with this recommendation.

GPC is in the process of developing a RMP that will be released in August 2021. The RMP will include several new routine post-award monitoring requirements, including the requirement that NASA personnel document their reviews of performance and financial reports. Regarding performance reports, the RMP will require TOs to document their review and approval or denial of annual performance reports. Reports will be stored in TechDoc.

Estimated Completion Date: The RMP will be released in August 2021, and GOs and TOs will have until December 31, 2021, to implement the policy.

Recommendation 9: Ensure that the follow-on GESTAR cooperative agreement is assigned to a specific grant officer(s) and not subject to transactional processing to ensure the appropriate oversight of the complex nature of the effort.

Management's Response: NASA concurs with this recommendation.

NSSC currently has one senior GO assigned to award and administer all residual cooperative agreements that had been issued at other NASA Centers. This results in residual awards having consistent oversight by one GO. Goddard Earth Sciences Technology and Research (GESTAR) would be considered a residual award.

Estimated Completion Date: Complete – GESTAR will be assigned to the grant officer over all residual cooperative agreements for award and administration.

Recommendation 10: Require that the NSSC Division Chief, Procurement Services direct grant officers to review USRA expenditures for allowability and recover any expenditures deemed unallowable.

Management's Response: NASA partially concurs with this recommendation.

NASA agrees with OIG's recommendation that a review should be conducted to determine the allowability of expenditures associated with Universities Space Research Association (USRA) awards. However, given that USRA's awards contain thousands of individual expenditures, a complete review of all USRA expenditures would impose an undue burden on NASA and the recipient. Therefore, NASA will conduct a review of a sample of USRA expenditures for allowability, allocability, and reasonability.

Although NASA will not review all USRA expenditures, NASA will not be the only entity examining USRA's expenditures as USRA's awards are subject to audit requirements in Title 2 of the Code of Federal Regulations (CFR), Part 200, Subpart F. As such, USRA is required to obtain a single audit, which includes an expenditure review, whenever the organization expends \$750,000 or more in Federal funds during its fiscal year. The single audit process provides an additional layer of scrutiny for USRA's expenditures.

As mentioned in the response to recommendation 4, NASA will soon implement a routine monitoring plan that will include a requirement that a sample of all awards' expenditures be reviewed for allowability, allocability, and reasonability. This expenditure review process will ensure that all NASA awards, including those issued to USRA, undergo an additional level of monitoring to ensure compliance with the cost principles in 2 CFR 200.

Estimated Completion Date: The sample of USRA expenditures will be reviewed for allowability by October 31, 2021. The routine monitoring plan will be released in August 2021, and NASA will have until December 31, 2021, to implement the policy.

Recommendation 11: Ensure that the excess \$246,060 charged for executive compensation is credited back to the Agency in USRA's general ledger.

Management's Response: NASA non-concurs with this recommendation.

41 U.S.C. 4304 (16) is not applicable to cooperative agreements and grants. However, when funds are returned on grants and cooperative agreements, the recipient would return funds through PMS. PMS, in turn, would send the funds to Finance.

Estimated Completion Date: N/A

Additionally, in order to increase accountability over NASA acquisitions, the OIG recommends NASA's Associate Administrator for STEM Engagement:

Recommendation 12: Complete planned actions to finalize, document, and deliver a plan and timeline for transitioning all internship cooperative agreements to contracts before the USRA cooperative agreement extensions end in August 2022.

Management's Response: The Office of STEM Engagement (OSTEM) concurs.

While OSTEM concurs, a few updates to the report have been requested via the "Technical Assistance" spreadsheet to represent OSTEM's primary beneficiaries and timeline more clearly.

OSTEM leadership initiated plans in FY 2019, and started working with the Office of Procurement in FY 2020, to conduct a comprehensive review and assessment of all its procurement vehicles to develop a comprehensive enterprise acquisition strategy and procurement that addresses the needs of the organization, which will include services for the internships program.

Because the NASA internships program is one of the most critical and visible services OSTEM provides, the decision was made to extend the Universities Space Research Association internship agreements through August 2022 to provide a bridge period for the transition to the new enterprise acquisition solution and procurement, resulting in a new contract vehicle for all enterprise services.

A Request for Information (RFI) was posted to “beta SAM.gov” on November 2, 2020, regarding this acquisition strategy, called the NASA-enterprise wide Science, Technology, Engineering and Mathematics (STEM) Services (NSTEM).

In the spirit of meeting President Biden’s Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, OSTEM issued a second RFI on May 27, 2021, to better inform its future solicitation. The RFI states, “NASA is seeking capability statements from interested parties, including all socioeconomic categories of Small Businesses and Historically Black Colleges and Universities (HBCU)/Minority Serving Institutions (MSI), for the purposes of determining the appropriate level of competition and/or small business subcontracting goals for the NSTEM contract.” The response date is June 18, 2021. More information on the RFI can be found at:

<https://sam.gov/opp/32e5a7c271d54242ad33ab6cc0610aad/view>.

OSTEM and NSSC will continue working the procurement process with a goal to transition the current procurement vehicle to the new enterprise NSTEM Services single contract beginning fall 2022.

Estimated Completion Date: November 30, 2022.

We have reviewed the draft report for information that should not be publicly released. As a result of this review, we have not identified any information that should not be publicly released.

Once again, thank you for the opportunity to review and comment on the subject draft report. If you have any questions or require additional information regarding this response, please contact Aliza Margolies on (202) 358-1631.

STEPHEN SHINN
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STEPHEN SHINN
Date: 2021.07.01
15:40:44 -04'00'
Stephen Shinn

APPENDIX F: REPORT DISTRIBUTION

National Aeronautics and Space Administration

Administrator
 Deputy Administrator
 Associate Administrator
 Deputy Associate Administrator
 Chief of Staff
 Acting Chief Financial Officer
 Associate Administrator for STEM Engagement
 Assistant Administrator for Procurement
 Executive Director, NASA Shared Services Center
 Director, Glenn Research Center
 Director, Goddard Space Flight Center
 Director, Kennedy Space Center
 Director, Marshall Space Flight Center

Non-NASA Organizations and Individuals

Office of Management and Budget
 Deputy Associate Director, Energy and Space Programs Division
 Government Accountability Office
 Managing Director, Financial Management and Assurance
 Managing Director, Contracting and National Security Acquisitions

Congressional Committees and Subcommittees, Chairman and Ranking Member

Senate Committee on Appropriations
 Subcommittee on Commerce, Justice, Science, and Related Agencies
 Senate Committee on Commerce, Science, and Transportation
 Subcommittee on Space and Science
 Senate Committee on Homeland Security and Governmental Affairs
 House Committee on Appropriations
 Subcommittee on Commerce, Justice, Science, and Related Agencies
 House Committee on Oversight and Reform
 Subcommittee on Government Operations
 House Committee on Science, Space, and Technology
 Subcommittee on Investigations and Oversight
 Subcommittee on Space and Aeronautics

(Assignment No. A-20-006-00)