

Ensuring Scientific Integrity at the National Aeronautics and Space Administration
August 5, 2011

On May 5, 2011, Dr. John P. Holdren, Director of the Office of Science and Technology Policy (OSTP) and Assistant to the President for Science and Technology, [requested](#) that heads of executive departments and agencies provide draft scientific integrity policies to OSTP within 90 days. This request followed a December 17, 2010, [request](#) by Dr. Holdren for departments and agencies to report the actions they have taken to develop and implement the Administration's policies on scientific integrity detailed in President Obama's [memorandum](#) of March 9, 2009, which articulated six principles central to the preservation and promotion of scientific integrity. The National Aeronautics and Space Administration (NASA) transmitted a [response](#) to the December 17, 2010, request in April 2011.

The present document responds to the May 5, 2011, request. As NASA demonstrated in its April 2011 report to OSTP, NASA already has a variety of policies in place to ensure scientific and engineering integrity. The intent of the present document is thus to highlight how NASA's existing policies support scientific and engineering integrity as well as to note the actions NASA plans to take to strengthen its policies in this area. References and website links to existing policy documents are furnished where applicable; NASA directs the reader to these references for a full description of the Agency's commitment to scientific and engineering integrity. The present document is organized to respond to the four major areas and 17 sub-areas addressing scientific and engineering integrity that are explicitly addressed in Dr. Holdren's December 17, 2010, memorandum.

I. Foundations of Scientific Integrity in Government.

1. Ensure a culture of scientific integrity.

NASA is committed to sustaining an environment of scientific integrity, honest investigation, and freedom from political interference:

- [NASA Policy Directive \(NPD\) 1000.0A, NASA Governance and Strategic Management Handbook](#), stipulates that integrity is a NASA core value and that the Agency "is committed to maintaining an environment of trust, build upon honesty, ethical behavior, respect, and candor."
- [NPD 1080.1, Policy for the Conduct of NASA Research and Technology](#), stipulates that the Agency will achieve excellence by selecting the best research and technology project ideas to be carried out by the most capable people, thereby providing the American public the greatest return on its investment in NASA research and technology programs.
- [NASA Procedural Requirements \(NPR\) 1080.1, Requirements for the Conduct of NASA Research and Technology](#), creates and sustains a culture of scientific integrity by establishing NASA requirements for research and technology planning, solicitation selection of proposals, peer review, quality assessment and performance metrics, data protection, and dealing with misconduct.

- [14 CFR 1275, *Research Misconduct*](#), stipulates the procedures NASA will use to handle allegations that a person or institution has engaged in fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results, funded or supported by NASA.

2. Strengthen the actual and perceived credibility of Government research.

NASA is committed to strengthening the actual and perceived credibility of its research.

(a) *Ensuring that the selection of candidates for scientific positions is based primarily on their scientific and technological knowledge, credentials, experience, and integrity.*

NASA is committed to ensuring that its workforce is qualified to carry out the Nation’s civil space program:

- [NPR 3335.1, *Internal Placement of NASA Employees*](#), stipulates that NASA will fill positions available only to internal candidates through competition and on the basis of merit.
- [5 CFR 300.102, *Employment Practices*](#), stipulates that NASA will use competitive practices for external hiring that fairly test the relative capacity and fitness of candidates for the jobs to be filled and to support selection from among the best qualified candidates.

(b) *Ensuring that data and research used to support policy decisions undergo independent peer review by qualified experts.*

NASA is committed to ensuring that data and research that are used to support policy decisions undergo independent peer review by qualified experts:

- [NPD 1000.0A, *NASA Governance and Strategic Management Handbook*](#), stipulates NASA’s commitment to employing process-related checks and balances including peer review to ensure the integrity of its programs.
- [NPR 1080.1, *Requirements for the Conduct of NASA Research and Technology*](#), and [NPR 7120.8, *NASA Research and Technology Program and Project Management Requirements*](#), stipulate that NASA will rely on peer review panels of competent and non-conflicted research and technology experts from both internal and external to NASA to conduct quality and performance assessments.
- [NPR 1080.1, *Requirements for the Conduct of NASA Research and Technology*](#), and [NPR 2200.2, *Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information*](#), stipulate that NASA expects all scientific research by NASA investigators and NASA-sponsored investigators to be peer-reviewed before publication, whether the results are published by NASA or submitted to a scientific journal for publication.
- The [2010 Science Plan for NASA’s Science Mission Directorate](#) stipulates that investment choices for Earth and space science programs will be based on scientific merit via peer review and open competition.¹

¹ The Science Mission Directorate is responsible for conducting robotic space missions and supporting research and technology development in the areas of Earth science, planetary science, astrophysics, and heliophysics.

- [Human Research Program \(HRP\)-47053, Science Management Plan](#), stipulates that projects managed by the Human Research Program will be selected on the basis of peer review of competing proposals.

(c) *Setting clear standards regarding conflicts of interest.*

NASA is committed to setting and enforcing clear standards regarding conflicts of interest:

- NASA civil servants are bound by federal restrictions against financial conflicts of interest. As with federal civil servants generally, NASA scientists in covered positions file financial disclosure reports annually and are provided annual training on conflict of interest rules and other federal ethics requirements.
- Scientists participating in NASA peer reviews and NASA research, whether NASA civil servants or members of the external scientific community, must follow documented standards for conflicts of interest:
 - The [Guidebook for Proposers Responding to a NASA Research Announcement or Cooperative Agreement Notice](#) stipulates that all peer reviewers of NASA proposals made under a NASA Research Announcement must avoid not only actual but also any apparent conflicts of interest and must maintain confidentiality about all activities involved in the peer review process.
 - [Science Mission Directorate Policy Document \(SPD\)-01, Handling Conflicts-of-Interest for Peer Reviews](#), stipulates clear conflicts-of-interest policies for peer reviewers in all peer reviews managed by NASA’s Science Mission Directorate.
 - [SPD-05, Preventing Financial Conflicts for IPA Employees](#), stipulates the measures that may be utilized by an Intergovernmental Personnel Act (IPA) detailee to the NASA Science Mission Directorate to mitigate potential conflicts of interest between his or her home institution and the Science Mission Directorate. The IPA permits assignments to and from universities. IPA detailees serve within the Science Mission Directorate in all capacities that civil servant scientists do.
 - In 2008, the Office of Government Ethics approved the “NASA Conflicts of Interest and Confidentiality Self Certification for NASA Peer Reviewers who are Federal Government Employees Form.” This form is incorporated into the online [NASA Solicitation and Proposal Integrated Review and Evaluation System](#), and all NASA civil servants must complete it to certify the absence of financial conflicts of interest before participating in peer reviews of projects proposed for Agency support.
 - [Human Research Program \(HRP\)-47053, Science Management Plan](#), stipulates clear conflicts-of-interest policies for peer reviewers and civil servants involved in proposal selections for projects managed by the Human Research Program.

(d) *Adopting appropriate whistleblower protections.*

NASA is fully committed to the [Whistleblower Protection Act of 1989, Public Law \(P.L.\) 101-12](#), and its expanded protections enacted by [P.L. 103-424](#):

- NASA’s Whistleblower Protection Plan dated March 2007 stipulates that the Agency will provide confidentiality, a single point of contact to make complaints, tracking of the

complaint for the whistleblower, education of employees about their rights and protections, education of employees about their obligation to report their concerns, and education to human resources professionals and NASA managers and supervisors regarding personnel laws, rules, and regulations. The plan was developed in response to Section 110 of the [NASA Authorization Act of 2005 \(P.L. 109-155\)](#), which required the NASA Administrator to transmit to Congress "... a plan describing steps to be taken by NASA to protect from retaliation NASA employees who raise concerns about substantial and specific dangers to public health and safety or about substantial and specific factors that could threaten the success of a mission."

- NASA conducts annual training regarding the [No FEAR Act \(P.L. 107-174\)](#) that informs employees of the rights and protections available under the Whistleblower Protection Act and anti-discrimination laws. In addition, the annual notice and training encourages employees to raise violations of the Whistleblower Protection Act to the NASA Office of Inspector General located at each NASA Center, or Office of Special Counsel.

3. Facilitate the free flow of scientific and technological information, consistent with privacy and classification standards.

NASA is committed to facilitating open communication among scientists and engineers, between NASA staff and the technical community, and between NASA employees and the public. NASA requires the results of NASA-funded research, both internal and external, to be made available to the scientific community and to the public at no cost to them:

- The [National Aeronautics and Space Act of 1958, as amended](#), stipulates that NASA shall "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." Unless a determination is made that public dissemination of information must be prohibited or restricted, NASA information is made available to the public.²
- [NPD 2200.1, Management of NASA Scientific and Technical Information](#), stipulates that NASA shall provide for the "widest practicable and appropriate dissemination" of scientific and technical information resulting from NASA's research effort, while precluding the inappropriate dissemination of NASA's restricted and sensitive information, in keeping with the National Aeronautics and Space Act of 1958, as amended.
- [NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information](#), stipulates that NASA scientific and technical information must be made available to the public either through publication in the open literature or through NASA's Scientific and Technical Information homepage, <http://www.sti.nasa.gov/STI-public-homepage.html>.
- [NPD 1001.0, NASA Strategic Plan](#), and the [2010 Science Plan for NASA's Science Mission Directorate](#) stipulate that the results of NASA research and development must be made available for the benefit of the Government, the advancement of research, and the increase in the public's knowledge.

² NASA scientific and technical information can be restricted if it includes national- security-classified information, export-controlled information, proprietary information, or discloses an invention (NPR 2200.2, Section 4.5.1).

4. Establish principles for conveying scientific and technological information to the public.

NASA is committed to conveying to the public scientific and technological information that derives from its research and development activities:

- The [National Aeronautics and Space Act of 1958, as amended](#), stipulates that NASA shall “provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.” Unless a determination is made that public dissemination of information must be prohibited or restricted, NASA information is made available to the public.³
- [NPD 2200.1, Management of NASA Scientific and Technical Information](#), stipulates that NASA will collect, manage, disseminate, safeguard, and archive its scientific and technical information for use by NASA and NASA contractors and grantees, and unless restricted, the public in order to advance NASA’s goals in science, exploration, and aeronautics; to strengthen the effectiveness and improve the productivity and cost effectiveness of the NASA research effort; to reduce unnecessary duplication; and to improve U.S. competitiveness in science and technology.
- [NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information](#), establishes NASA requirements for approving and publishing NASA scientific and technical information and disseminating it to the NASA technical community and the public consistent with the stipulations contained in NPD 2200.1.
- NASA practice is to place all scientific data from robotic space missions into publicly accessible data archives for use by the scientific community and the public at no cost to them. These practices are governed by requirements that are generally included in all solicitations for space missions and investigations. See, for example, <http://science.nasa.gov/earth-science/earth-science-data/data-information-policy/> and <http://science.nasa.gov/heliophysics/heliophysics-data-centers/>.

II. Public Communications.

NASA is committed to promoting and maximizing openness with the media and the American people:

- The [National Aeronautics and Space Act of 1958, as amended](#), stipulates that NASA shall “provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.” Unless a determination is made that public dissemination of information must be prohibited or restricted, NASA information is made available to the public.⁴
- [14 CFR 1213, Release of Information to News and Information Media](#), includes provisions that:
 - NASA will offer articulate and knowledgeable spokespersons who can best serve the needs of the media and the American public (14 CFR 1213.105(b)).

³ Ibid.

⁴ Ibid.

- NASA employees may, but are not required to, speak to the media and the public about their work (14 CFR 1213.105(c) and (h)).
- Set forth an internal dispute resolution process for ensuring scientific and technical accuracy is not compromised (14 CFR 1213.104(e)).
- Scientific and technical information from or about Agency programs and projects will be accurate and unfiltered (14 CFR 1213.102(a)) and that editing by public affairs staff to ensure that public information products are well written and appropriate for the intended audience shall not change scientific or technical data or the meaning of programmatic content (14 CFR 1213.103(c)).

III. Use of Federal Advisory Committees.

NASA is committed to the integrity of its use of Federal advisory committees (FAC) tasked with giving scientific advice:

- [NPD 1150.11, *Federal Advisory Committee Act Committees*](#), stipulates NASA policies for the management of its advisory committees subject to the Federal Advisory Committee Act (FACA) as well as committees which are not subject to FACA. This NPD was developed in compliance with the statutory provisions of the [Federal Advisory Committee Act \(5 U.S.C. App., as amended\)](#) and the [General Services Administration \(GSA\) Final Rule on Federal Advisory Committee Management \(41 CFR Parts 101-6 and 102-3\)](#). NPD 1150.11 stipulates that “Subcommittees or task forces that... are not subject to FACA ... will operate under procedures that provide for public meetings and the maintenance of publicly available records.”

1. The recruitment process for new FAC members should be as transparent as possible.

NASA is committed to making the recruitment process for new FAC members as transparent as possible:

- [NPD 1150.11](#) stipulates that NASA will rely on nominations from within the Agency followed by a thorough vetting of the nominee for expertise, experience, and conflicts of interest. The nomination process for members of one of NASA’s five FACs, the National Space-Based Positioning, Navigation, and Timing Advisory Board, is coordinated among the nine Federal stakeholder agencies. All members of NASA FACs are appointed by the NASA Administrator.
- NASA anticipates revising [NPD 1150.11](#) by October 31, 2011, to stipulate that the Agency will announce NASA FAC vacancies widely, including notice in the Federal Register with an invitation to the public to recommend individuals for consideration and also to submit self-nominations.

2. Professional biographical information for appointed committee members should be made widely available to the public.

NASA is committed to making professional biographical information for appointed committee members widely available to the public:

- NASA has posted professional biographical information to its websites for several of the NASA FACs.
- NASA anticipates revising [NPD 1150.11](#) by October 31, 2011, to stipulate that NASA will ensure that professional biographical information is available on its website for all of the members of its FACs.

3. The selection of members to serve on a scientific or technical FAC should be based on expertise, knowledge, and contribution to the relevant subject area.

NASA is committed to ensuring that the Agency selects FAC members based on their expertise, knowledge, and contribution to the relevant subject area:

- NASA practice is to select members of NASA FACs based on their expertise, knowledge, experience, and contribution to the relevant subject area. Additional factors considered include the availability of the member to serve, diversity among members of the committee, and the ability to work effectively on the committee.
- NASA is committed to having a fairly balanced membership with regard to points of view represented and functions to be performed by its FACs. To that end, beginning in 2011, NASA submits a written Membership Balance Plan to the GSA for review of every new, renewed, or reestablished NASA FAC to ensure the balanced membership requirement is met.
- NASA anticipates revising [NPD 1150.11](#) by October 31, 2011, to stipulate the aforementioned selection practices as written policy as appropriate.

4. Agencies should make publicly available all Conflict of Interest waivers granted to committee members.

NASA is committed to making publicly available the names of all committee members receiving Conflict of Interest waivers:

- NASA practice is to grant such waivers rarely.
- NASA anticipates revising [NPD 1150.11](#) by October 31, 2011, to stipulate that the Agency will make publicly available the names of all committee members receiving Conflict of Interest waivers.

5. All reports, recommendations, and products produced by FAC should be treated as the findings of such committees rather than the U.S. Government and are thus not subject to revision by NASA.

NASA is committed to treating all reports, recommendations, and products of FACs as the findings of such committees and, consequently, will refrain from revising them:

- [NPD 1150.11](#) stipulates that NASA FACs must make such reports, records, and other papers available to the public in accordance with all legal requirements.

- NASA practice is that all reports, recommendations, and products produced by NASA FACs are treated as the findings of such committees rather than the U.S. Government and are thus not subject to revision by NASA.
- NASA anticipates revising [NPD 1150.11](#) by October 31, 2011, to stipulate the aforementioned practices as written policy as appropriate.

IV. Professional Development of Government Scientists and Engineers.

1. Encourage publication of research findings in peer-reviewed, professional, or scholarly journals.

NASA is committed to encouraging Agency employees to publish NASA-sponsored research findings in peer-reviewed, professional, or scholarly journals:

- [NPR 1080.1, *Requirements for the Conduct of NASA Research and Technology*](#), stipulates that NASA researchers and project staff are required to publish the results of their research and development activities in peer-reviewed literature or publicly available NASA technical reports.
- [NPR 2200.2, *Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information*](#), establishes NASA requirements for approving and publishing NASA scientific and technical information and disseminating it to the NASA technical community and the public.

2. Encourage presentation of research findings at professional meetings.

NASA is committed to encouraging Agency employees to present research findings at professional meetings:

- [NPR 1080.1, *Requirements for the Conduct of NASA Research and Technology*](#), stipulates that NASA researchers and project staff are expected to share their results with their peers and colleagues at professional meetings, science conferences, and other venues. NASA civil servants will do so to the extent permitted by available funding and law.⁵

3. Allow Government scientists and engineers to become editors or editorial board members of professional or scholarly journals.

NASA is committed to allowing NASA civil servant scientists and engineers to serve as editors or editorial board members of professional or scholarly journals:

- No policy precludes NASA civil servant scientists and engineers from accepting and performing such roles. This service is generally considered part of a NASA scientist's or

⁵ For example, the [Consolidated Appropriations Act, 2010, P.L. 111-117](#), requires that NASA limit travel to any single conference outside of the United States (a "foreign conference") to no more than 50 NASA employees. The [NASA Authorization Act of 2008, P.L. 110-422](#), limited fiscal year 2009 funding for conferences to "not more than \$5,000,000 for any expenses related to conferences, including conference programs, travel costs, and related expenses."

engineer's official duties and, when approved by his or her supervisor, may be carried out as part of his or her job.

4. Allow full participation in professional societies including removing barriers for serving as officers or on governing boards of such societies.

NASA is committed to allowing its scientists, engineers, and all other NASA employees for whom such participation is an integral part of professional development to serve as officers in professional societies:

- There are no NASA-specific barriers to participation as officers or directors of professional societies. The Department of Justice Office of Legal Counsel has opined that with the exception of certain standard-setting organizations [18 U.S.C. § 208](#) prohibits outside board service in an official capacity. NASA ethics officials work with interested employees to ensure that outside activities are performed in compliance with all legal and ethics requirements.
- NASA has issued an Agency-wide memorandum dated July 26, 2011, confirming the Agency's support for NASA scientists, engineers, and all other NASA employees for whom such participation is an integral part of professional development to serve as society officers or board members, where appropriate, and summarizing the Agency's processes for them to obtain approval for such service.

5. Allow Government scientists and engineers to receive honors and awards for their research and discoveries.

NASA is committed to allowing its scientists and engineers to receive honors and awards for their research and discoveries:

- Consistent with [5 CFR 2635.204\(d\)](#), NASA civil servant scientists and engineers may receive honors and awards from outside entities for their research and discoveries.
- The Agency also makes full use of the [Government Employees Incentive Awards Act, 5 U.S.C. §§ 4501 et seq.](#), to recognize superior accomplishments of its scientists and engineers.

Appendix – List of Acronyms

CFR	Code of Federal Regulations
FAC	Federal Advisory Committee
FACA	Federal Advisory Committee Act
GSA	General Services Administration
HRP	Human Research Program
IPA	Intergovernmental Personnel Act
NASA	National Aeronautics and Space Administration
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
OSTP	Office of Science and Technology Policy
P.L.	Public Law
SPD	Science Mission Directorate Policy Document
U.S.C.	United States Code