



Ames Procedural Requirements

APR 7100.1
Effective Date: August 19, 2021
Expiration Date: August 19, 2026

COMPLIANCE IS MANDATORY

Subject: Policy of the Conduct, Documentation, and Release of Basic and Applied Research

Responsible Office: Code D / Office of the Chief Scientist

DOCUMENT CHANGE LOG

Status [Baseline /Revision /Cancelled]	Document Revision	Date of Change	Description
Revision	1	4/26/2010	Document expired. No changes made.
Revision	2	4/9/2019	Subject title updated. Minor changes.
Revision	3	8/19/2021	Changes to definitions, Authority, and Applicable Documents and Forms; added detrimental research practices; and modified responsibilities and procedures based on STRIVES electronic records.

TABLE OF CONTENTS

PREFACE

- P.1 Purpose
- P.2 Applicability
- P.3 Authority
- P.4 Applicable Documents and Forms
- P.5 Measurement/Verification
- P.6 Cancellation

CHAPTER 1 DOCUMENTATION, APPROVAL, AND DISSEMINATION OF NASA RESEARCH RESULTS

- 1.1 Dissemination of Scientific and Technical Information
- 1.2 Review and Document Research Results
- 1.3 Release, Delivery, and Publication of Research Results
- 1.4 Records Retention

CHAPTER 2 RESPONSIBILITIES

- 2.1 The Directorate Director Responsibilities
- 2.2 The Division Chief Responsibilities
- 2.3 The Line/Project Manager Responsibility
- 2.4 The Researcher Responsibility

CHAPTER 3 RESEARCH MISCONDUCT AND INTEGRITY

- 3.1 Research Misconduct and Integrity

APPENDIX A. DEFINITIONS

APPENDIX B. ACRONYMS

APPENDIX C. PEER AND MANAGEMENT REVIEW RESPONSIBILITIES

APPENDIX D. WHEN ARE AN NF 1676 AND/OR ARC 310 REQUIRED?

Preface

P.1 PURPOSE

- a. This Ames Procedural Requirements (APR) 7100.1 outlines requirements for the management and conduct of research and the dissemination of scientific technical information (STI) in accordance with the NASA Ames Research Center (ARC) Management System.
- b. Describes resources and procedures for reporting and dealing with allegations of research misconduct, detrimental research practices, and/or research integrity.
- c. The requirements specified in this document ensure that NASA/ARC research is scientifically well-founded, of excellent quality, appropriate for the customer, and that the benefits of ARC's research to NASA are captured, validated, and communicated.
- d. The Research Management Process is one of ARC's three core processes; the other two are the Physical Product Development Process and the R&D Facilities Services Process.
- e. NASA Policy Directive (NPD) 1080.1 establishes policy for the conduct of NASA Research and Technology and NPD 7120.4 establishes policy for Program/Project management. Together these documents establish the policy and responsibilities for the conduct of NASA's research and technology programs and associated projects. Specific procedural requirements from NASA Procedural Requirements (NPR) 1080.1 and NPR 7120.8 are referred to in the relevant sections of this document. These policies cover all aeronautics and space research and analysis programs, including but not limited to astrophysics, planetary science, heliophysics, Earth science, biological and physical sciences, and informational technology fields such as intelligent systems, high-speed computing, and human factors.

P.2 APPLICABILITY

- a. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms: "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.
- b. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- c. This APR is applicable to ARC personnel who propose, manage, conduct, or disseminate the results of research performed within NASA's scientific research programs (including contractors and grantees to the extent specified in their contracts and grants) that results in research products for delivery to ARC customers or NASA stakeholders.
- d. This APR is applicable to the dissemination of Scientific and Technical Information (STI) in both print and digital means. Print forms include, but are not limited to, professional journal articles, conference presentations, and NASA technical publications, such as technical memoranda and conference publications. Digital forms include, but are not limited to, websites, multimedia, and data storage devices. Digital releases may be the only media, or they may accompany or supplement release of NASA STI in print form.
- e. This document is meant to guide the conduct of individual basic and applied research efforts. Guidance for programs and projects is given in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements.

P.3 AUTHORITY

- a. This document addresses appropriate requirements outlined in:
- (1) NPD 1080.1, Policy for the Conduct of NASA Research and Technology (R&T).
 - (2) NPR 1080.1, Requirements for the Conduct of NASA Research and Technology (R&T).
 - (3) NPD 1200.1, NASA Internal Control.
 - (4) NPD 1920.1, Scientific Integrity
 - (5) NPD 2200.1, Management of NASA Scientific and Technical Information (STI).
 - (6) NPR 2200.2, Requirements for Documentation, Approval and Dissemination of Scientific and Technical Information (STI).
 - (7) NPR 1441.1, NASA Records Management Program Requirements

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. ARC 310, Review and Authorization Record
- b. NF 1676, NASA Scientific, Technical and Research Information discoVERY System (STRIVES)
- c. NF 1679, Disclosure of Invention and New Technology (Including Software)

P.5 MEASUREMENT/VERIFICATION

- a. Verification of conformance to requirements in this directive are measured through Center and Responsible Organizational management reviews, self-assessments, and subsequent analysis and reports of conformance to requirements, as well as periodic internal audits.
- b. Compliance with this document is verified through oversight by the responsible manager, by the researcher's home organization (Code), and NASA internal controls described in NPD 1200.1, NASA Internal Control. The ARC Office of the Chief Scientist shall periodically review and make recommendations to the Center Director and Associate Center Director for Research and Technology on the metrics that are used for inclusion in the Center's budgetary, performance planning, and review documents and for other evaluative purposes.

P.6 CANCELLATION

- a. APR 7100.1, Policy of the Conduct, Documentation, and Release of Basic and Applied Research, dated April 9, 2019.

Eugene Tu
Director

DISTRIBUTION STATEMENT:

Internal and external distribution.

CHAPTER 1 DOCUMENTATION, APPROVAL, AND DISSEMINATION OF NASA RESEARCH RESULTS

1.1 Dissemination of Scientific and Technical Information

a. The requirements for the documentation, approval, and dissemination of NASA Scientific and Technical Information (STI) are given in NPR 2200.2. To achieve the highest practicable standards in the documentation of scientific and technical information resulting from NASA endeavors, ARC has established a "Review and Authorization Record" form ARC 310. This form establishes a review process to ensure that:

- (1) The scientific and technical coverage of the subject is complete and accurate.
- (2) Information contained in the publication is of sufficient scientific and technical merit to warrant release.
- (3) The scientific and technical content results from NASA or NASA-sponsored effort.
- (4) Papers containing security-classified or proprietary information are appropriately identified and marked.

1.2 Review and Document Research Results

1.2.1 The researcher shall:

- a. Document results and prepare STI for dissemination. To determine when a NASA Form (NF) 1676, NASA Scientific, Technical and Research Information discoVEry System (STRIVES) and/or ARC 310 are required, see Appendix D, Requirements for NF 1676 and/or ARC 310.
- b. File NF 1676 to start a process which selects peer reviewers for STI from within Ames or consults with the RM before selecting reviewers from outside if no reviewer with the required experience is available within Ames. See Appendix C: Peer and Management Review Responsibilities.
- c. Obtain peer review of STI, (i.e. receiving comments and getting signatures on an ARC 310). This form is available at <https://nef.nasa.gov/>.
- d. Address peer reviewers' comments and submit to the Responsible Manager (RM). The free exchange of comments between authors and peer reviewers is not to be considered as errors or nonconformances, but as part of the research process.
- e. Refer to form NF 1679 if an invention or new technology should be disclosed. This form is used for STI to be published, released, or presented externally to NASA or presented at internal meetings or conferences at which foreign nationals may be present. NPD 2200.1 gives authority and defines STI.

1.3 Release, Delivery, and Publication of Research Results

1.3.1 Prior to release or delivery, the RM assures that:

- a. Dissemination of STI meets NASA standards as required by NPD 2200.1, NPR 2200.2, NPD 1080.1, and APR 2815.2.
- b. Peer reviews required by NPD 2200.1 and NPR 2200.2 were conducted.
- c. Customer requirements have been met: The RM's signature on the ARC 310 is evidence that the final draft conforms to the "Criteria for Publication" stated on the form.

1.3.2 Prior to publishing, the researcher shall complete the NF 1676:

- a. Fill out NF 1676 (<https://strives.nasa.gov>) with assistance from the researcher's assigned STRIVES Super User, as needed.
- b. Obtain required signatures.
- c. Ensure that material for release has been completed and approved according to NF 1676.

1.3.3 Prior to publishing, the researcher shall complete the ARC 310 process:

- a. Fill out the ARC 310 form
- b. Obtain required signatures.
- c. Attach the ARC 310 to the NF 1676.
- d. Retain ARC 310/STI material as a record, per NPR 1441.1, NASA Records Management Program Requirements

1.4 Records Retention

- a. All material related to the NASA scientific and technical information, including but not limited to NF 1676 and ARC 310, shall be retained as a record per NPR 1441.1, NASA Records Management Program Requirements.
- b. The NASA STI Program Office adheres to NPR 1441.1 and regularly backups the data uploaded to STRIVES.

CHAPTER 2 RESPONSIBILITIES

2.1 The Directorate Director Responsibilities

2.1.1 The Directorate Director shall:

- a. Ensure that all divisions within their directorate follow the 1676 and peer review (ARC310) process requirements.
- b. Ensure that there is a minimum of one STRIVES Super User for each technical directorate to assist Directorate/Division/Branch civil servant and contractor staff with submitting NF 1676 and ARC 310 forms.
- c. Ensure that all staff within their directorate know the policies, procedures, and point of contact for reporting research misconduct and integrity concerns.

2.2 The Division Chief Responsibilities

2.2.1 The Division Chief shall:

- a. Review and approve the content of all information authored within his/her organizations for dissemination. This role can be delegated. For scientific results of especially high visibility, such as results from science missions, senior management, at their discretion, may require further internal reviews to ensure the highest quality of publications submitted for peer review.
- b. Know and follow NASA policies and requirements pertaining to the dissemination and usage of web-based information and technology.

2.3 The Line/Project Manager Responsibility

2.3.1 The Line/Project Manager shall:

- a. Ensure that management and peer reviews are conducted as required by this document.
- b. Ensure that NASA Form 1676 and ARC 310 are completed as appropriate. See Appendix D for guidance.

2.4 The Researcher Responsibility

2.4.1 The Researcher shall:

- a. Ensure that the research has been performed in accordance with all NASA guidelines and requirements.
- b. Ensure that NASA Form 1676 and ARC 310 are completed as appropriate and in a timely manner prior to submission and/or giving a presentation.
- c. Maintain all material related to the NASA scientific and technical information in accordance with NPR 1441.1.

CHAPTER 3 RESEARCH MISCONDUCT AND INTEGRITY

3.1 Research Misconduct and Integrity

3.1.1 Research and Technological Misconduct

a. Research misconduct is fabrication, falsification or plagiarism in proposing, performing, reviewing, or reporting research and technology results. NASA/ARC follows the guidance set forth in Chapter 6 of NPR 1080.1. NASA handles allegations of misconduct following the requirements published by the Office of Science and Technology Policy (65 Federal Register, 76,260, Dec. 6, 2000, Federal Policy on Research Misconduct). NASA's policies and procedures for handling these investigations are published in the Code of Federal Regulations (14 CFR, Part 1275, Research Misconduct). NASA individuals who receive allegations of research and technology misconduct should contact the ARC Research Integrity Officer (RIO). The ultimate determination will be made by the NASA Inspector General, who is responsible for research misconduct inquiries and investigations.

3.1.2 Detrimental Research Practices

b. Detrimental research practices are actions that violate the standard professional practices of a research field, but do not meet the definition of research misconduct. Detrimental research practices include, but are not limited to: inaccurately or unfairly allocating credit in publications or acknowledgements, intentionally failing to appropriately retain data, violating review confidentiality, conflicts of interest in research and intentionally executing experiments with faulty or inadequate design. Allegations of detrimental research practices shall be directed to the ARC Research Integrity Officer (RIO).

3.1.3 Responsibilities of ARC Resident Staff

- a. All members of the ARC community – civil servants, contractors, student interns, fellows, etc. – shall report good faith concerns about research misconduct and detrimental research practices. An allegation is made in ‘good-faith’ when it is made with the honest belief that misconduct has (or may have) occurred.
- b. Adhere to guidance set forth in NPD 1920.1, Scientific Integrity.

3.1.4 Research Integrity Officer

- a. The Ames Chief Scientist is the Ames Research Integrity Officer (RIO). The RIO is the designated point of contact at the Center to receive and resolve all allegations of research integrity and detrimental research practices. The RIO will perform an initial assessment of the allegation to see if a further investigation is warranted and/or will assist in the resolution of complainant’s concern. If at any point during this process the RIO has reasonable indication of 1) violation of law; 2) risk to human-subjects, animal-subjects, or the public; or 3) federally required action, the RIO will report to the Office of the Inspector General (OIG) or Office of General Counsel ARC (OGC).
- b. Research misconduct or integrity allegations brought to ombudsman, supervisors, directors, etc. that need further resolution shall be forwarded to the RIO. If the allegation involves potential 1) violation of

- law; 2) risk to human-subjects, animal-subjects, or the public; or 3) federally required action then it shall promptly forwarded to OIG or OGC.
- c. The Chief Scientist is the Responsible Conduct of Research (RCR) Coordinator and ensures that ARC fosters a research environment that promotes the responsible conduct of research, research training, and discourages research misconduct.

3.1.5 Other Resources

- a. The Ames Office of the Chief Scientist maintains a website for information regarding research integrity: <http://www.nasa.gov/ames/researchintegrity>
- b. SATERN course: “Responsible Conduct of Research” (course number AG-RCR-21)
- c. Ombudsman – The Ombuds Office provides informal services that can help staff resolve and cope more effectively with situations that arise relating to safety, organization performance and mission success.
- d. Inspector General – The Office of the Inspector General conducts oversight of NASA programs and operations; and independently reports to the Administrator, Congress, and the public to further the Agency’s accomplishment of its mission.
- e. Chief Counsel – The Office of the General Counsel (OGC) at ARC provides functional leadership regarding legal services and issues related to Center activities. The Chief Counsel implements the Agency’s ethics program in order to maintain compliance with NASA policy.
- f. Animal Research – The ARC Institutional Animal Care and Use Committee (IACUC) is responsible for reviewing, approving and monitoring proposed activities involving animal care and use. The NASA Flight Institutional Animal Care and Use Committee (FIACUC) is responsible for reviewing, approving, and monitoring proposed activities involving animal care and use.
- g. Human Research – The NASA Institutional Review Board (NASA IRB) is responsible for reviewing, approving, and monitoring research with voluntary human participants.

APPENDIX A. DEFINITIONS

Conference Presentation	Oral or poster presentation of scientific and technical findings to audiences at society meetings or other professional gatherings.
Customer	Any internal or external organization or individual who enters into an agreement with NASA/ARC for delivery of ARC products or services.
Customer Report	Report containing STI that is delivered to a customer.
Formal NASA Publication	Report published by a NASA center. As part of the NASA STI Report Series, it can be (Technical Papers (TP), Technical Memoranda (TM), Special Publications (SP), Conference Publications (CP), Contractor Reports (CR).
NASA Stakeholders	Person, group, or organization that is interested in a NASA project or activity.
Informal Non-NASA Publication	A technical paper, article, or book reporting on NASA research submitted by a NASA employee, contractor, or grantee for publication through a non-NASA channel (e.g., professional society journals and conference or symposia proceedings).
Research Products	Products such as scientific and technical publications, data, research results, and associated prototype hardware and software.
Researcher	Person responsible for preparing research activities, conducting the research, and documenting and/or presenting the results.
Responsible Manager	Person responsible for a specific activity or process.
Scientific and Technical Information (STI)	The results (the analyses of data, facts, and resulting conclusions) of basic and applied scientific, technical, and related engineering research and development.
Super User	The designated point(s) of contact within ARC Directorates that can assist civil servant and contractor staff with submitting an NF 1676 and ARC 310. Up-to-date information on ARC Super Users can be found at www.nasa.gov/ames/superusers .

APPENDIX B. ACRONYMS

APR	Ames Procedural Requirements
ARC	Ames Research Center
HRIRB	Human Research Institutional Review Board
IACUC	ARC Institutional Animal Care and Use Committee
NF	NASA Form
NPD	NASA Policy Directive
NPR	NASA Procedural Requirement
OGC	Office of General Counsel ARC
OIG	Office of the Inspector General
RCR	Responsible Conduct of Research
RIO	Research Integrity Officer
RM	Responsible Manager
STI	Scientific and Technical Information
STRIVES	Scientific, Technical and Research Information discoVEry System

APPENDIX C. PEER AND MANAGEMENT REVIEW RESPONSIBILITIES

Peer and Management Review	
<i>Who</i>	<i>Steps</i>
STI Author	<ul style="list-style-type: none"> • Initiates ARC 310 by completing appropriate sections. • Consults with the responsible manager for the selection of reviewers. • Obtains required peer reviews. • Obtains peer reviewers' signatures on an ARC 310. • Submits ARC 310 and STI material to the responsible manager.
Responsible Manager	<ul style="list-style-type: none"> • Reviews STI material for adherence to NASA and ARC policies. • Approves ARC 310 or provides comments to author. • Notifies STI author of approval. • Ensures that approved ARC 310 and STI material are retained as a record as required by NPR 1441.1, NASA Records Retention Schedule.

APPENDIX D. WHEN ARE AN NF 1676 AND/OR ARC 310 REQUIRED?

<i>Type of STI material</i>	<i>NF 1676 Required</i>	<i>ARC 310 Required</i>
STI previously reviewed and approved (i.e., NF 1676 and ARC 310 are already on file). <u>No additional STI will be released</u> , but format will be different (example: originally published as journal article and now to be slide presentation or material presented at new venue).	Y	N
Formal NASA publication (published by ARC as a NASA TM, CP, CR, CP, SP, TP, TT) <ul style="list-style-type: none"> • Paper (includes abstract) • Electronic media (videos, CDs and DVDs) 	Y	Y
Informal non-NASA publication (published by a journal, by a conference organizer as proceedings, etc.)		
<ul style="list-style-type: none"> • Abstract being submitted to a journal or conference 	Y	N
<ul style="list-style-type: none"> • Extended or long abstract (more than 500 words) being submitted 	Y	Y
<ul style="list-style-type: none"> • Journal Article (even if its abstract already has an approved NF 1676) 	Y	Y
<ul style="list-style-type: none"> • Non-NASA customer report containing STI or research data 	Y	N
Conference presentation (oral or poster presentation at a society meeting or other professional gathering)		
<ul style="list-style-type: none"> • Presentation materials. All handouts must be included with submitted material if they do not already have their own approved NF 1676, and ARC 310. Separate NF 1676s are required for different presentation topics. 	Y	Y
World Wide Web (WWW) (placement of NASA STI on the WWW is considered to be a release to an international audience)		
<ul style="list-style-type: none"> • Initial Website charter approval 	Y	N
<ul style="list-style-type: none"> • Update to existing Website that is within scope of the original approval 	N	N
<ul style="list-style-type: none"> • Previously approved NASA STI (to be approved for new venue/WWW) 	Y	N
<ul style="list-style-type: none"> • Non-NASA STI (you must obtain copyright approval from the owner of any non-NASA material before you publish it or post it on the WWW.) 	N	N