



NOAA FORM 58-5 (4-04)

National Oceanic and Atmospheric Administration	NOAA Administrative Order 202-735D.3	
NOAA ADMINISTRATIVE ORDER SERIES	DATE OF ISSUANCE March 1, 2024	EFFECTIVE DATE March 1, 2024
SUBJECT: SCIENTIFIC INTEGRITY		

**SECTION 1. PURPOSE.**

Scientific and technological information, data, and evidence are central to the development and iterative improvement of sound policies, and to the delivery of equitable services and programs, across every area of government. The 2022 National Science and Technology Council Report of the Scientific Integrity Fast Track Action Committee (FTAC), *Protecting the Integrity of Government Science* (The FTAC Report) found that strong scientific integrity policies and practices bolster the ability of Federal agencies to protect government science.<sup>1</sup>

As defined by the Office of Science and Technology, “*scientific integrity is the adherence to professional practices, ethical behavior, and the principles of honesty and objectivity when conducting, managing, using the results of, and communicating about science and scientific activities. Inclusivity, transparency, and protection from inappropriate influence are hallmarks of scientific integrity.*”<sup>2</sup>

The purpose of this National Oceanic and Atmospheric Administration (NOAA) Administrative Order (NAO) is to promote a continuing culture of scientific excellence and integrity – and to establish a policy that ensures the integrity of the agency’s scientific activities used to inform management and policy decisions. This-NAO upholds the Presidential Memorandum *Restoring Trust in Government Through Scientific Integrity and Evidence-based Policymaking* (January 27, 2021) to ensure policy decisions are informed by the best available science and data, to achieve uniformity of scientific integrity across agencies – and to support directives therein. To enhance NOAA’s culture of scientific excellence, this policy supports scientists and researchers of all genders, races, ethnicities, and backgrounds; and strives to advance the equitable and accessible

<sup>1</sup> [www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting\\_the\\_Integrity\\_of\\_Government\\_Science.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting_the_Integrity_of_Government_Science.pdf)

<sup>2</sup> A Framework for Federal Scientific Integrity Policy and Practice, Guidance by the Scientific Integrity Framework Interagency Working Group of the National Science and Technology Council, January 2023, [www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf](https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf)



delivery of scientific information to the Federal Government’s programs. This policy reinforces the incorporation of NOAA’s Diversity, Equity, Inclusion, and Accessibility (DEIA)-related policies in science planning, execution, and communication. It also denotes the agency’s commitment to a culture of support for NOAA’s employees, which are its principal science asset. In addition, the intent of this policy is to strengthen universal confidence – from scientists to decision-makers to the general public – in the quality, validity, and reliability of NOAA science. For those reasons, this policy establishes that Research and Scientific Misconduct by any covered individual are prohibited.

The Procedural Handbook<sup>3</sup> for this Order establishes processes for responding to allegations of misconduct or loss of scientific integrity. Such scientific misconduct would include failures to comply with any scientific integrity requirements outlined in this Policy. The Procedural Handbook has the full force and authority of this Order.

The NOAA Scientific Integrity Officer (SIO) is the senior career employee designated as an agency’s lead to oversee implementation and iterative improvement of scientific integrity policies and processes consistent with the provisions of the January 27, 2021, Presidential Memorandum on Scientific Integrity. NOAA’s Scientific Integrity Committee is responsible for supporting the SIO in responding to allegations of scientific misconduct or loss of scientific integrity, and for promoting a culture of scientific integrity throughout the agency. It is composed of agency Line Office Scientific Integrity Officer(s) and Staff Office Points of Contact (including but not limited to the Office of General Counsel and the Office of Human Capital Services).

Additional guidance and resources related to scientific integrity and the implementation of this Order are available to staff and the public at the NOAA Science Council’s Scientific Integrity Commons webpage.<sup>4</sup>

## **SECTION 2. SCOPE.**

- .01 This Order applies to: All NOAA employees, political and career, including members of the Senior Executive Service and members of the NOAA Commissioned Officer Corps, who engage in, supervise, or manage scientific activities, analyze and/or publicly communicate information resulting from scientific activities, or use scientific information or analyses in making bureau or office policy, management, or regulatory decisions, unless excepted under a collective bargaining agreement.
- .02 All contractors, recipients of NOAA financial assistance awards, including NOAA Cooperative Institutes, NOAA research partners, and other collaborators who engage in, or assist with, activities identified above are responsible for abiding by the principles contained in this Order regarding NOAA’s commitment to Scientific Integrity, as specified in award

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<sup>3</sup> Procedural Handbook for Scientific Integrity, [https://sciencecouncil.noaa.gov/wp-content/uploads/2022/07/Scientific-Integrity-ProceduralIHB\\_-NAO-202-735D.2\\_Final.pdf](https://sciencecouncil.noaa.gov/wp-content/uploads/2022/07/Scientific-Integrity-ProceduralIHB_-NAO-202-735D.2_Final.pdf)

<sup>4</sup> National Oceanic and Atmospheric Administration. NOAA Science Council. Scientific Integrity Commons. (n.d.), NOAA Policy, Scientific Integrity. [www.nrc.noaa.gov/Scientific-Integrity-Commons](http://www.nrc.noaa.gov/Scientific-Integrity-Commons)

agreements or in other written agreements with NOAA.

.03 To achieve its purposes, this Order will:

- a. Establish NOAA's Policy on Scientific Integrity and set forth NOAA's Principles of Scientific Integrity;
- b. Define the reciprocal responsibilities among scientists, their managers and supervisors, and policy makers by establishing a Code of Scientific Conduct and a Code of Ethics for Science Supervision and Management;
- c. Provide for compliance training and maintenance of the public-facing NOAA Scientific Integrity Commons website for its employees; and
- d. Set procedures for resolving allegations of misconduct and consequences for violations of this Policy on Scientific Integrity in the accompanying Procedural Handbook.

.04 This Order is in addition to, and does not alter the requirements of, any other applicable Federal statutes, regulations, or policy directives, or other NOAA or Department of Commerce administrative orders (see Section 11, Authorities).

.05 This Order shall not be interpreted to conflict with the rights of an employee under the law, including, but not limited to, the following:

- a. The Federal Service Labor-Management Relations Statute (5 U.S.C. §§ 7101-7135), including any rights accorded a union representative when communicating in that role;
- b. The provisions within Federal Service Labor-Management Relations Statute 5 U.S. Code Chapter 75 – Adverse Actions, relating to disciplinary action of employees; and
- c. The Whistleblower Protection Act of 1989, as amended (5 U.S.C. § 1201 *et seq.*), Merit Systems Protection Board, Office of Special Counsel, and Employee Right of Action.

### **SECTION 3. DEFINITIONS.**

.01 Allegation – Any statement, claim or assertion of possible scientific misconduct made against a NOAA employee or contractor, or an employee of a NOAA research partner.

.02 Conflict of Interest – Any financial, personal, professional, political, legal or other non-financial interest, which may influence an individual's scientific activities or judgment by:

- a. Impairing the individual's objectivity;
- b. Creating an unfair competitive advantage for any person or organization; or
- c. Creating the appearance of either item listed above.

.03 Covered Individuals – Those persons referenced in Section 2.01 above.

- .04 Decision-makers – Employees who are authorized to, or may, do the following:
- a. Make determinations about policy or management, including determinations on, or during, the development of policies;
  - b. Make determinations about expenditures of Department of Commerce or NOAA funds;
  - c. Implement or manage activities that involve, or rely on, scientific activities; or
  - d. Supervise employees who engage in scientific activities.
- .05 Ethical Behavior – Activities that reflect norms for conduct that distinguish between acceptable and unacceptable behavior, such as honesty, lawfulness, equity, and professionalism in the conduct of scientific activities. Federal scientists and managers are also subject to the U.S. Office of Government Ethics Standards of Ethical Conduct for Employees of the Executive Branch.<sup>5</sup>
- .06 Fabrication – Making up data or scientific results and recording or reporting them.<sup>6</sup>
- .07 Falsification – Manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.<sup>7</sup>
- .08 Financial Interest – Any matter affecting a personal financial interest or a financial interest imputed to the individual (including, but not limited to, the individual’s spouse, minor child, general partner or employee, any person or organization with whom the individual is negotiating or has any arrangement concerning prospective employment, and any entity for which the individual serves in a personal capacity as an officer or board member, such as due to fiduciary duties to the organization under state law).<sup>8</sup>
- .09 Fundamental Research Communication – Public communication prepared as part of the employee’s official work regarding the products of basic or applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community. Matters of policy, budget, or management are not considered Fundamental Research Communications (FRC).<sup>9</sup>
- .10 Inappropriate Influence – The attempt to shape or interfere in scientific activities or the production of a scientific product against well-accepted scientific methods and theories or without scientific justification. When the attempt is made for partisan, ideological, or regional advantage, it may be referred to as “political interference.”

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<sup>5</sup> U.S. Office of Government Ethics Standards of Ethical Conduct for Employees of the Executive Branch (2017). [www.oge.gov/web/oge.nsf/Resources/Standards+of+Ethical+Conduct+for+Employees+of+the+Executive+Branch](http://www.oge.gov/web/oge.nsf/Resources/Standards+of+Ethical+Conduct+for+Employees+of+the+Executive+Branch)

<sup>6</sup> Federal Policy on Research Misconduct, 65 FR 76262 (2000). [www.federalregister.gov/documents/2000/12/06/00-30852/executive-office-of-the-president-federal-policy-on-research-misconduct-preamble-for-research](http://www.federalregister.gov/documents/2000/12/06/00-30852/executive-office-of-the-president-federal-policy-on-research-misconduct-preamble-for-research)

<sup>7</sup> Federal Policy on Research Misconduct, 65 FR 76262 (2000)

<sup>8</sup> See 5 C.F.R. § 2635.502(b).

<sup>9</sup> Department of Commerce. Office of Privacy and Open Government. Public Communications. (2008). Departmental Administrative Order (DAO) 219-1. [www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](http://www.osec.doc.gov/opog/dmp/daos/dao219_1.html)

Examples may include: 1) suppressing the responsibility to offer the best judgment on how to accurately and reliably study or measure a given phenomenon; 2) preventing the use of best available science; 3) insisting on preclearance of a scientific product for purposes other than providing advance notification or opportunity to review for technical merit; 4) suppressing, altering or delaying the release of a scientific product for any reason other than technical merit or providing advance notification; or 5) removing or reassigning scientific personnel for any reason other than performance, conduct or budgetary constraints. This is not intended to be an exhaustive list.

Note that differences of scientific opinion are not necessarily indicative of inappropriate influence.

#### .11 Interference

- a. Suppressing, altering, or otherwise impeding, the collection, content, or timely release of scientific data or scientific or technological findings or conclusions, including advice from Federal advisory committees (FAC), unless explicitly required by a Department or government-wide statute, regulation, Executive Order, Presidential Memorandum, or other legal authority; or
- b. Intimidating or coercing employees, contractors, recipients of financial assistance awards, Federal advisory committee members or others to suppress, alter, censor, or otherwise impede the collection, content, or timely release of scientific or technological data, findings or conclusions; or
- c. Implementing or causing to be implemented institutional barriers to cooperation and the timely communication of scientific or technological findings or conclusions.

.12 Objectivity – The quality of being explicit, unbiased, honest, and impartial.

.13 Plagiarism – The appropriation of another person’s ideas, processes, results, or words without giving appropriate credit.<sup>10</sup>

.14 Professionalism – To conduct oneself with the qualities that are characterized by skill, competence, ethics, and courtesy.

.15 Research and Development – *Research* is creative and systemic work undertaken in order to increase the stock of knowledge, including knowledge of the natural world, humankind, culture and society, and to devise new applications of available knowledge.<sup>11</sup>

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<sup>10</sup> Federal Policy on Research Misconduct, 65 FR 76262 (2000)

<sup>11</sup> OECD (2015), Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264239012-en>

- a. Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.
- b. Applied research is an original investigation undertaken in order to acquire new knowledge. It is however, directed primarily towards a specific, practical aim or objective.

*Development* is the systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.<sup>12</sup> Testing is an important part of the development process.

- .16 Research Partners – Governmental agencies, academic institutions, non-governmental organizations and international entities conducting or participating in NOAA research.
- .15 Science – Science at NOAA is the systematic study of the structure and behavior of the oceans, coasts, freshwater lakes, atmosphere (and the region of space close to Earth), and their related ecosystems, including people, and the solar / space environment. This includes the integration of research, analysis, observations (including citizen science), monitoring, environmental modeling, human dimensions (social, behavioral and economic), or subsets of those and related fields of study. People or Community-focused scientific research includes research questions, samples, and settings that reflect the diversity of the U.S. population.

NOAA science includes discoveries and new understanding of the oceans and atmosphere and their relationship to humans and the application of this understanding to issues such as the:

- a. Causes and consequences of climate change;
- b. Physical dynamics of high-impact weather events;
- c. Dynamics of complex ecosystems and biodiversity; and the
- d. Ability to model and forecast the future states of natural and human systems.

Science provides the fundamental basis of the service and stewardship elements of NOAA’s mission.<sup>13</sup>

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<sup>12</sup> OECD (2015), Frascati Manual 2015.

<sup>13</sup> *Note:* Adapted from NOAA (2010) “Next Generation Strategic Plan,” p. 3, [www.performance.noaa.gov/wp-content/uploads/NOAA\\_NGSP.pdf](http://www.performance.noaa.gov/wp-content/uploads/NOAA_NGSP.pdf)

- .16 Scientific Activities – Activities that involve inventorying, monitoring, observations (including citizen science), analysis of data (including using artificial intelligence/machine learning), experimentation, study, research, integration, modeling, and scientific assessment. Scientific activities are conducted in a manner specified by standard protocols and procedures and include any of the physical, biological, or human dimensions (social, behavioral and economic) sciences, as well as engineering and mathematics, or any combination of these.
- .17 Scientific and Research Misconduct – Scientific misconduct is a significant departure from the Code of Scientific Conduct or the Code of Ethics for Supervisors and Managers and may be committed intentionally, knowingly or recklessly. This type of misconduct includes, but is not limited to, fabrication, falsification, plagiarism and interference. Research misconduct is fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. Research misconduct does not include honest error or differences of opinion,<sup>14</sup> and may be committed intentionally, knowingly or recklessly.
- .18 Scientific Assessment – Evaluation of a body of scientific or technical knowledge that typically synthesizes multiple factual inputs, data, models, and assumptions, and implies the use of best professional judgment to bridge uncertainties in the available information.
- .19 Scientific Integrity – Scientific integrity is the adherence to professional practices, ethical behavior, and the principles of honesty and objectivity when conducting, managing, using the results of, and communicating about science and scientific activities. Inclusivity, transparency, and protection from inappropriate influence are hallmarks of scientific integrity.<sup>15</sup>
- .20 Scientific Integrity Officer – The Scientific Integrity Officer refers to a senior career employee designated as an agency’s lead to oversee implementation and iterative improvement of scientific integrity policies and processes consistent with the provisions of the January 27, 2021, Presidential Memorandum on Scientific Integrity.

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<sup>14</sup> Federal Policy on Research Misconduct, 65 FR 76262 (2000)

<sup>15</sup> A Framework for Federal Scientific Integrity Policy and Practice, Guidance by the Scientific Integrity Framework Interagency Working Group of the National Science and Technology Council, January 2023, [www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf](https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf)

- .21 Scientific Product – The results of scientific activities including the analysis, synthesis, compilation, or translation of scientific information and data into electronic and hardcopy formats for the use of NOAA, the Department of Commerce, or the Nation. These products include, but are not limited to, experimental and operational models, forecasts, graphics, and verbal and written communications of all kinds relating to scientific activities, including NOAA social media accounts.
- .22 Suppression of Science – Suppression of Science includes deliberate:
- a. Withholding, delaying publication, or postponing dissemination of scientific or research work in the absence of a clear and compelling reason to do so;<sup>16</sup>
  - b. Distorting or selective releasing of scientific analysis, assessment, research, product, or data for public communication;
  - c. Discrediting of scientific analysis, assessment, research, product, or data for public communication;<sup>17</sup> or
  - d. Attempting to impede a scientist’s activities or undermine or penalize the scientist for making adverse findings or discovering unfavorable data.
- .23 Traceability – The ability to verify sources, data, information, methodology, results, assessments, research, analysis, conclusions or other evidence to establish the integrity of findings.
- .24 Transparency – Transparency of scientific integrity should guide scientists to give visibility to their data and to describe their analyses, methods and how to interpret their results in ways that allow others to assess them.

Transparency ensures that all relevant data and information used to inform a decision made or action taken is visible, accessible, and consumable by affected or interested parties, to the extent allowable by law. This includes, to the extent possible, providing the information necessary to interpret artificial intelligence and machine learning methodologies when used.

#### **SECTION 4. POLICY ON SCIENTIFIC INTEGRITY.**

It is NOAA policy that:

- .01 Research and Scientific Misconduct by any covered individual are prohibited.

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<sup>16</sup> Note: Adapted from Government of Canada “Model Policy on Scientific Integrity,”

<https://science.gc.ca/site/science/en/office-chief-science-advisor/scientific-integrity/model-policy-scientific-integrity>

Martin, B, Suppression of Dissent in Science. In: Research in Social Problems and Public Policy, Volume 7, edited by William R. Freudenburg and Ted I. K. Youn (Stamford, CT: JAI Press, 1999), pp. 105-135.

<sup>17</sup> Delborne, J, A, (2016) Suppression and Dissent in Science. In Bretag T. (Eds.), Handbook of Academic Integrity (pp. 943-956), Singapore: Springer.



- .02 All covered individuals comply with the requirements of, and adhere to, the principles of scientific integrity, integrity of science activities, Code of Scientific Conduct and Code of Ethics for Science Supervision and Management described in this NAO when performing their duties within and outside of NOAA.
- .03 NOAA leadership, decision-makers, managers, and scientists are expected to know of, and understand, the statutes, regulations, policies, and relevant mandates that apply to their professional conduct and work.
- .04 Under no circumstance may any covered individuals ask or direct Federal scientists or other NOAA employees to suppress or alter, or delay scientific data, findings, analysis, assessments, or research, including how they are used in communications of all kinds, both public and internal, and in congressional testimony.
- .05 All allegations of scientific and research misconduct, and loss of scientific integrity brought against covered individuals will be thoroughly assessed to determine if they are credible.
- .06 Credible allegations of fabrication, falsification, plagiarism, and interference with or undue influence on accurate public reporting of science will be examined using the process laid out in the Procedural Handbook to this NAO and may result in personnel actions, referral to the Inspector General's office, or NOAA's Acquisition and Grants Office.

#### **SECTION 5. PRINCIPLES OF SCIENTIFIC INTEGRITY.**

NOAA is an organization based upon science, scientific research, and providing and using scientific advice for decision-making. NOAA recognizes a clear distinction between the scientific process and the policy decisions informed by scientific results. Transparency, traceability, and integrity at all levels are required for NOAA to achieve its strategic vision of "healthy ecosystems, communities, and economies that are resilient in the face of change." They are core values of our organization and the reason for maintaining this Order. The following paragraphs describe NOAA's principles of scientific integrity.

- .01 Covered individuals engage in science and the development of scientific products (defined in Section 3.17), and are encouraged to publish data and findings in transparent ways that enhance NOAA’s reputation for reliable science. This includes dissemination (after appropriate internal review, including technical, information quality and policy review) through reputable, peer-reviewed, professional, scholarly journals, preprint servers, and appropriate online formats such as open access journals and publicly accessible government websites. Development and dissemination of scientific and technical products must be consistent with NOAA policies and procedures related to peer review, the Open Government Directive,<sup>18</sup> NOAA Information Quality Guidelines,<sup>19</sup> the NOAA plan for Public Access to Research Results (PARR),<sup>20</sup> applicable policies from the NOAA Data Governance Committee (DGC), and other applicable legislative, regulatory and policy mandates. This openness includes, to the extent possible while honoring privacy considerations, transparency in communicating what is known about the provenance, validity, and accuracy of all data as well as the process of creating the data, as is particularly important when involving artificial intelligence and machine learning.
- .02 When requested by the media, NOAA will provide, to the best of its ability, knowledgeable spokespersons who can, in an objective nonpartisan and articulate fashion, describe and explain scientific and technical dimensions of agency work to the media and the American people.
- .03 Covered individuals engaged in science and the development of scientific products may speak freely to the media and the public about scientific and technical ideas, approaches, findings, and conclusions based on their official work. These communications are subject to guidance in Departmental Administrative Order (DAO) 219-1 “Public Communications.”<sup>21</sup> Email or other forms of electronic communication in response to inquiries from the media, like oral communication, are not subject to approval, but are subject to the restrictions on protected non-public information defined in DAO 219-1. Social media communications are governed by the Department of Commerce Policy on the Approval and Use of Social Media and Web 2.0,<sup>22</sup> as well as DAO 219-1.<sup>23</sup> The DOC communication policies do not apply to employees in bargaining units represented by the National Weather Service Employees Organization.

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<sup>18</sup> The White House. Office of Management and Budget: Open Government Plan. (2016).

<https://obamawhitehouse.archives.gov/omb/open>

<sup>19</sup> U.S. Department of Commerce. NOAA. Information Quality Guidelines. (2019).

[www.noaa.gov/organization/information-technology/information-quality-guidelines](http://www.noaa.gov/organization/information-technology/information-quality-guidelines)

<sup>20</sup> NOAA Research Council. NOAA plan for increasing public access to research results: a response to the White House Office of Science and Technology Policy memorandum 'Increasing access to the results of Federal funded scientific research (2015).

[www.google.com/url?q=http://doi.org/10.7289/V5F47M2H&sa=D&source=docs&ust=1652374300389263&usg=AQvVaw10VY- qeueXG-Yb2TuHtYK](http://www.google.com/url?q=http://doi.org/10.7289/V5F47M2H&sa=D&source=docs&ust=1652374300389263&usg=AQvVaw10VY- qeueXG-Yb2TuHtYK)

<sup>21</sup> U.S. Department of Commerce. Office of Privacy and Open Government. Public Communications. DOA 219-1. (2008). [www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](http://www.osec.doc.gov/opog/dmp/daos/dao219_1.html)

<sup>22</sup> U.S. Department of Commerce Policy on the Approval and Use of Social Media and Web 2.0 (2010). [www.commerce.gov/about/policies/social-media](http://www.commerce.gov/about/policies/social-media)

<sup>23</sup> Department of Commerce. Office of Privacy and Open Government. Public Communications. (2008). DAO 219-1. [www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](http://www.osec.doc.gov/opog/dmp/daos/dao219_1.html)

- .04 Covered individuals are encouraged to attend communications training offered through the agency or by reputable institutions and companies to enhance their skill at conveying NOAA scientific information to the media and the public.
- .05 Covered individuals engaged in science and the development of scientific products are free to present viewpoints, for example about policy or management matters that extend beyond their scientific findings to incorporate their expert or personal opinions. However, in doing so, they must make clear that they are presenting their individual opinions, not the views of the Department of Commerce or NOAA. In such cases, NOAA personnel may also note their NOAA affiliation as part of their biographical information, provided that their NOAA affiliation is noted as one of several biographical details. If the information is being published in a scientific or technical journal, their NOAA affiliation may be listed with an appropriate disclaimer. Appropriate disclaimers for use by NOAA scientists when expressing such opinions will be posted to the Scientific Integrity Commons website.<sup>24</sup>
- .06 NOAA supports the recruitment and retention of scientists and researchers of all genders, races, ethnicities, and backgrounds through inclusive and equitable hiring and supervisory practices. This is, in part, accomplished through the creation of inclusive environments, activities and actions that result in individuals being able to see themselves reflected in the diversity of people within the agency, from student interns to the highest levels of leadership.<sup>25,26</sup>
- .07 NOAA supports the professional development and stature of its scientists and engineers, and encourages its researchers to become scientific leaders to advance NOAA's mission. NOAA also encourages its scientists, consistent with Federal ethics laws and regulations, to engage with their peers in academic, industry, governmental, and non-governmental organizations by:
- a. Presenting their work at scientific meetings;
  - b. Publishing their work in appropriate and reputable outlets;
  - c. Serving on editorial boards and on scientific and technological expert review panels; and
  - d. Actively participating in professional societies and national/international scientific advisory and science assessment bodies.
- .08 NOAA supports the election or appointment of its Federal scientists and engineers to fellowships or positions in professional organizations subject to applicable ethics and policy

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<sup>24</sup> <https://sciencecouncil.noaa.gov/Scientific-Integrity-Commons>

<sup>25</sup> The White House. Memorandum for the Heads of Executive Departments and Agencies. Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking. (2021). [www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/](http://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/)

<sup>26</sup> NOAA 2020-2024 Diversity and Inclusion Strategic Plan. [www.noaa.gov/sites/default/files/legacy/document/2020/Dec/NOAA%202020-2024%20Diversity%20and%20Inclusion%20Strategic%20Plan.pdf](http://www.noaa.gov/sites/default/files/legacy/document/2020/Dec/NOAA%202020-2024%20Diversity%20and%20Inclusion%20Strategic%20Plan.pdf)

requirements. In accordance with Department of Commerce policy<sup>27</sup> and subject to management approval, NOAA employees may serve in their official capacity as officers and on governing boards of outside nonprofit organizations. Such service should preferably be with organizations such as professional societies, scholarly societies, scientific organizations, trade associations, or other types of nonprofits with a broad focus on the overall health of the field, where the agency has an interest as a stakeholder, and where the organization's interests are consonant with the agency's interests. Alternatively, NOAA employees may serve in an official capacity as an agency liaison with an outside nonprofit organization. Service in an official capacity on a governing board or as an officer of an outside organization is subject to restrictions under ethics laws.<sup>28</sup> Employees should consult with their supervisor before accepting an appointment on behalf of NOAA to such a position.

.09 NOAA encourages enhanced use of awards and other ways to recognize the outstanding science conducted by its employees and authorizes its scientists to accrue, subject to applicable laws, professional honors and awards for their research and discoveries. To the extent practicable, NOAA supports the opportunity for its employees to receive awards and honors similar to private-sector scientists and engineers.

.10 NOAA supports open communication internally and with the public through scientific integrity policy guidance and the Scientific Integrity Commons website.<sup>29</sup>

.11 NOAA has developed scientific integrity online training that is readily available to its employees and staff. NOAA requires the following:

- a. Mandatory scientific integrity training within the first performance cycle (for new hires) and at least every 2 years afterward for all covered individuals as defined in Section 2.01.
- b. Contractors, Cooperative Institutes, and other recipients of financial assistance awards to provide training on scientific integrity to those employees working in NOAA facilities. NOAA may provide this training upon request.
- c. Signed affirmation from all political appointees and Senior Executive Service members within 30 days of appointment that they have taken scientific integrity training and will adhere to this NAO.

.12 In support of scientific integrity awareness and training, NOAA will:

- a. Develop training on science integrity awareness for employees not directly involved in scientific activities;
- b. Develop training for staff responsible for providing regular science communications to the public and decision-makers (e.g., NWS forecasters);

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<sup>27</sup> Guidelines for Authorizing Department of Commerce Employees to Serve as Officers or Board Members of Nonprofit Organizations on Behalf of the Government. Ethics Law and Programs Division, Office of the Assistant General Counsel for Administration and Transactions, United States Department of Commerce. June 30, 2016.

<sup>28</sup> U.S. Department of Commerce. Office of General Counsel. Ethics Law and Programs Division (ELPD). Ethics Rules. <https://ogc.commerce.gov/page/ethics-rules> and U.S. Office of Government Ethics. Legal Advisory, (2013).

<sup>29</sup> <https://sciencecouncil.noaa.gov/Scientific-Integrity-Commons>

- c. Develop supplemental online and print materials on scientific integrity to distribute to all employees, as appropriate, and develop supplemental in-person/virtual training to be provided as requested and needed;
  - d. Conduct periodic surveys to assess the awareness of and understanding by employees of scientific integrity; and
  - e. Take advantage of teachable moments during formal gatherings by reminding employees of the importance of conducting themselves with scientific integrity to strengthen the agency's mission.
- .13 NOAA will provide information to covered individuals concerning their rights regarding publication of research, communication with the media and the public, and participation in professional scientific societies. All covered individuals are required to respect the intellectual property and copyrights of others.
- .14 NOAA protects those who uncover and report allegations of scientific and research misconduct, as well as those accused of scientific and research misconduct in the absence of a finding of misconduct, from prohibited personnel practices [as defined in 5 U.S.C. § 2302(b), as amended by the Whistleblower Protection Enhancement Act of 2012)].
- .15 Pursuant to the Crowdsourcing and Citizen Science Act,<sup>30</sup> NOAA values the contributions to science from dedicated volunteers ("citizen science"). NOAA aims to ensure the quality of data obtained from citizen scientists through various forms of quality assurance/quality control methods appropriate to a given project's design. These may include volunteer training and applying other best practices from the field of citizen science. NOAA will link to materials on its citizen science webpage<sup>31</sup> regarding the definition of research misconduct and the importance of scientific integrity in data collection that project managers may share with participating volunteers. In addition, the Scientific Integrity Committee will work with the NOAA Data Governance Committee and with NOAA's Citizen Science Coordinators to develop a policy regarding data rights.

## **SECTION 6. INTEGRITY OF SCIENTIFIC ACTIVITIES.**

- .01 All covered individuals defined in Section 2.01 must uphold and comply with the requirements of the fundamental Principles of Scientific Integrity (Section 5), the Code of Scientific Conduct (Section 7), and the Code of Ethics for Science Supervision and Management (Section 8) outlined in this Order.
- .02 NOAA preserves the integrity of the scientific activities it conducts and activities that are conducted on its behalf. It will not tolerate loss of integrity in the performance of scientific activities or in the application of science in decision-making. To that end, NOAA will:
- a. Ensure the free flow of all forms of scientific information, consistent with privacy and

<sup>30</sup> 15 U.S.C. § 3724. <http://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title15-section3724&num=0&edition=prelim>

<sup>31</sup> NOAA Citizen Science Webpage: [www.noaa.gov/office-education/citizen-science-crowdsourcing](http://www.noaa.gov/office-education/citizen-science-crowdsourcing)

- classification standards, and in keeping with the statutory Department of Commerce and NOAA data sharing and management policies. NOAA will abide by the NOAA PARR plan and other policies enacted in response to the Office of Science and Technology Policy (OSTP) Memo, “Increasing Access to the Results of Federally Funded Scientific Research” Public Access to Research Results (PARR)<sup>32</sup> and the Foundations for Evidence-Based Policy-Making Act (the Evidence Act);<sup>33</sup>
- b. Ensure that data collection instruments used for scientific research that request for persons to obtain, maintain, retain, report, or publicly disclose personal information, such as questionnaires or surveys involving 10 or more people, obtain Office of Management and Budget clearance prior to their use;<sup>34</sup>
  - c. Where possible and considering legal mandates, provide scientific data disaggregated by gender, race, ethnicity, age, income, and other demographic factors that support researchers in understanding the effects of policies and programs on equity and justice;<sup>35</sup>
  - d. Document the scientific findings considered in decision-making and ensure public access to that information and supporting data through established statutory Department of Commerce and NOAA procedures, except for information and data that are restricted from disclosure under procedures established in accordance with statutes, regulations, Executive Orders, Presidential Memorandums, or other legal authorities;
  - e. Ensure that the selection and retention of Federal employees in scientific positions or in positions that rely on the results of scientific activities are based on the candidate’s integrity, knowledge, credentials, and experience relevant to the responsibility of the position;
  - f. Ensure that the work of Federal scientists producing data and research used to support policy decisions undergo independent peer review by qualified experts, where feasible, appropriate, and consistent with the law and NOAA’s Information Quality<sup>36</sup> and Peer Review Guidelines<sup>37</sup> (e.g., agency pre-dissemination review and peer review by scientific journals). In cases where a full external peer review is appropriate but not possible (e.g., emergencies where lives and property are at risk), NOAA staff may use modified peer review processes as necessary for timely decision-making and release of data and information. In these cases, NOAA will explicitly state that the information has not been peer-reviewed;
  - g. Provide information to employees on, and abide by, existing whistleblower

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<sup>32</sup> Sheehan, Jerry. (2016, February 22). Increasing Access to the Results of Federally Funded Science. *The White House*. <https://obamawhitehouse.archives.gov/blog/2016/02/22/increasing-access-results-federally-funded-science>

<sup>33</sup> Foundations for Evidence-Based Policymaking Act of 2018, P.L. 115-435, 132 Stat. 5529 (Jan. 14, 2019)

<sup>34</sup> See: Paperwork Reduction Act, 44 U.S.C. § 3501 *et seq.* <https://digital.gov/resources/paperwork-reduction-act-44-u-s-c-3501-et-seq/>

<sup>35</sup> The White House. Memorandum for the Heads of Executive Departments and Agencies. Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking. (2021). [www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/](http://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/)

<sup>36</sup> [www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information](http://www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information)

<sup>37</sup> [www.federalregister.gov/documents/2005/01/14/05-769/final-information-quality-bulletin-for-peer-review](http://www.federalregister.gov/documents/2005/01/14/05-769/final-information-quality-bulletin-for-peer-review)

protections. NOAA employees who file allegations of scientific misconduct are covered by these protections, as noted in Section 5.10.

- h. Ensure that NOAA public communications guidance is consistent with Department of Commerce guidance (DAO 219-1). Ensure NOAA guidance provides procedures by which scientists may speak to the media and the public about scientific and technical matters based on their official work and areas of expertise. In no circumstance may any NOAA official require or direct covered individuals, Federal scientists or other NOAA employees to suppress or alter scientific findings in any NOAA public communication;
- i. Communicate scientific and technological findings clearly and accurately in all agency communications including congressional inquiries, testimony, and other requests. This includes explaining the underlying assumptions and related methodologies (including artificial intelligence and machine learning when used); providing the context of uncertainties; and describing probabilities associated with both optimistic and pessimistic projections of best-case and worst-case scenarios. During extraordinary or emergency situations explaining the underlying assumptions and methodologies may not be possible, and in such cases, NOAA will clearly state that it is not doing so;
- j. Enhance the understanding and communication of linkages between NOAA Communications, NOAA's Senior Advisor for Equity, the NOAA Scientific Integrity Officer, and Scientific Integrity Committee by building bridges between these entities;
- k. Enhance scientific integrity through appropriate cooperative engagement with the communities represented by professional societies and organizations;
- l. Examine, track, resolve, and report all reasonable allegations of scientific misconduct or loss of scientific integrity while seeking to ensure the rights and privacy of those covered by this policy and ensuring that unwarranted allegations do not result in slander, libel, or other damage to them; and
- m. Ensure the sharing of best administrative and management practices that promote the integrity of NOAA's scientific activities.
- n. Communicate policies for ensuring scientific integrity and responsibilities to employees, contractors and recipients of NOAA financial assistance awards who assist with developing or applying the results of scientific activities, as appropriate.

.03 As provided in Section G.05.h of the Department of Commerce Financial Assistance Standard Terms and Conditions,<sup>38</sup> as well as any applicable supplemental award terms, recipients of NOAA financial assistance awards have a responsibility to:

- a. Prevent, detect and investigate allegations that meet the definition of research misconduct under a NOAA financial assistance award;
- b. Notify the NOAA Grants Officer of allegations of scientific or research misconduct promptly;

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<sup>38</sup> U.S. Department of Commerce Financial Assistance Standard Terms and Conditions (2019), [https://osec.doc.gov/oam/grants\\_management/policy/documents/Department%20of%20Commerce%20Standard%20Terms%20Conditions%2030%20April%202019.pdf](https://osec.doc.gov/oam/grants_management/policy/documents/Department%20of%20Commerce%20Standard%20Terms%20Conditions%2030%20April%202019.pdf)

- c. Report on an inquiry to determine if there is sufficient evidence to pursue an investigation; and
- d. Report the results of its investigation for appropriate disposition.

.04 NOAA recipients are also required to follow all Conflict of Interest, Codes of Conduct and other requirements as stated in Section F of the Department of Commerce Financial Assistance Standard Terms and Conditions.

.05 In cases of joint or collaborative Federal funding, NOAA and the other Federal agencies funding the award(s) may, as agreed upon, jointly investigate any allegations of scientific or research misconduct.

## **SECTION 7. CODE OF SCIENTIFIC CONDUCT.**

.01 Achieving the purpose of the NAO requires commitment from scientists, their managers, those who use scientific results to set policy, and agency leadership. Therefore, this Order establishes reciprocal responsibilities among all four groups through a Code of Scientific Conduct and Code of Ethics for Science Supervision and Management for NOAA employees and contractors who conduct, supervise, assess, or interpret scientific information for the use of NOAA, the Department of Commerce, and the Nation.

.02 The actions to ensure research integrity in this section are provided as a set of best practices for those covered by this policy.<sup>39</sup> NOAA expects employees at all levels of the agency to abide by these principles to the best of their ability. All NOAA employees and contractors identified in Section 2.01 and all NOAA financial assistance award recipients and other NOAA research partners and collaborators identified in Section 2.02 will, to the best of their ability, be:

- a. Honest in all aspects of scientific effort and:
  - i. Clearly differentiate between facts, personal opinions, assumptions, hypotheses, and professional judgment in reporting the results of scientific activities and characterizing associated uncertainties in using those results for decision-making, and in representing those results to other scientists, decision-makers, and the public.
  - ii. Clearly differentiate between scientific results and agency position or policy through the use of disclaimer when appropriate as outlined in NOAA FRC Policy.
  - iii. Preserve the integrity of the data record through adherence to NOAA data management standards and not fabricate, falsify, or delete raw data.
  - iv. Approach all scientific activities objectively and completely; report results fairly and accurately and in a timely manner without allegiance to individuals, organizations, or ideology.

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<sup>39</sup> *Note:* NOAA supports the Principles of Integrity set forth in the Singapore Statement developed in September 2010. NOAA directly adopted the Singapore Statement Principles as the categories for the NOAA Code of Scientific Conduct. World Conferences on Research Integrity. (n.d.) Singapore Statement. <https://wcrif.org/statement>



- v. Disclose any real or perceived financial and non-financial conflicts of interest of their own and others when performing functions such as reviewing manuscripts, research proposals and grant applications etc. Failure to disclose conflicts of interest may constitute a breach of scientific integrity.
  - vi. Objectively consider conflicting data and/or studies.
  - vii. Acknowledge in publications the names and roles of those who made significant contributions to the research; including writers, funders, sponsors, and others who do not meet community-accepted authorship best practices.
- b. Accountable in conducting research and interpretation of research results and:
- i. Use resources entrusted to them responsibly and equitably, which includes equipment compliant with the American Disabilities Act, funds, and employees' time.
  - ii. Disclose all research methods used, available data, and final reports and publications consistent with applicable scientific standards, laws, and policy.
  - iii. Ensure research results receive appropriate peer review, including technical, information quality and policy review, before public dissemination in reputable journals or other public outlets.
  - iv. Ensure research results are not disseminated in predatory journals.<sup>40</sup>
  - v. Provide scientific advice to NOAA as requested to inform management and other decision-making.
- c. Professional, courteous, inclusive, equitable, and fair while working with others; respectful of their ideas and:
- i. Not hinder the scientific activities of others, or engage in dishonesty, fraud, deceit, misrepresentation, coercive manipulation, or other scientific or research misconduct.
  - ii. Provide constructive, objective, and frank evaluation to others in their scientific activities as appropriate for standards of respectful peer review, and accept constructive critique from others.
  - iii. Contribute to open and respectful scientific discourse that adheres to scientific standards for reporting results and conclusions and respects the intellectual property rights of others, including acknowledging and crediting prior work.
- d. Good stewards of research on behalf of others and:
- i. Diligently create, use, preserve, document, and maintain collections of physical specimens and data.
  - ii. Adhere to established quality assurance and quality control programs, follow Department of Commerce records retention policies, and comply with Federal law

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<sup>40</sup> *Note:* For more information on predatory journals, refer to NOAA Central Library (2020) Predatory Publishing Home. <https://libguides.library.noaa.gov/predatorypublishing>

- and agreements related to use, security, and release of confidential and proprietary data.
- iii. Adhere to the laws and policies related to protection of human research subjects, natural and cultural resources, and research animals while conducting scientific activities.
  - iv. Consistent with applicable laws, respect confidential and proprietary information provided by communities (such as Native American tribes or tribal organizations) and individuals whose interests are directly studied.<sup>41</sup>
  - v. Immediately report any observed, suspected, or apparent Scientific and Research Misconduct through means established in Section 9 and the Procedural Handbook for this Order.

## **SECTION 8. CODE OF ETHICS FOR SCIENCE SUPERVISION AND MANAGEMENT.**

.01 NOAA science managers and supervisors identified in Section 2.02 will adhere to the guidelines for Scientific Integrity established in the Presidential Memo to Heads of the Executive Departments and Agencies on Scientific Integrity (March 9, 2009),<sup>42</sup> the subsequent OSTP Memorandum to Heads of the Executive Departments and Agencies (December 17, 2010), and the Presidential Memo on Restoring Trust in Government Through Scientific Integrity and Evidence-based Policymaking (January 27, 2021). Specifically, science managers and supervisors will ensure that:

- a. The selection, promotion, and retention of candidates for science and technology positions in NOAA are based on the candidate's integrity, knowledge, credentials, accomplishments, and experience relevant to the responsibility of the position;
- b. Appropriate rules and procedures are in place that are accessible to all covered individuals and implemented to preserve the integrity of the scientific process and the dissemination of scientific products and information. Scientists who conduct original work have the right to review and correct any official communication (such as a press release or report, as defined in DAO 219-1) that cites or references their scientific work, to ensure that scientific accuracy is maintained after the clearance and editing process. NOAA will not release an official communication that relies on a scientist's original work if that scientist does not approve of how that work is described;
- c. NOAA Federal advisory committees (FAC) providing advice on scientific matters will operate through the formalized process established by the Federal Advisory Committee Act and transparency to the public will be accomplished in accordance with the guidelines established in the OSTP memorandum on Scientific Integrity of December 17, 2010. The establishment and use of FACs in NOAA will be based upon necessity and each will act promptly and efficiently to complete work within a defined time. Recruitment of members will include gathering input from the public, making special interest waivers readily available, ensuring FAC member

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<sup>41</sup> 2023 Indigenous Knowledge Guidance - [www.noaa.gov/sites/default/files/2023-07/NOAA\\_IK\\_Guidance\\_FINAL\\_2023\\_1.pdf](http://www.noaa.gov/sites/default/files/2023-07/NOAA_IK_Guidance_FINAL_2023_1.pdf)

<sup>42</sup> The White House. Memorandum for the Heads of Executive Departments and Agencies. Scientific Integrity, (2009). <https://obamawhitehouse.archives.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09>

- qualifications, and considering diversity of FAC members as a part of the recruitment process. Except when prohibited by law, findings by FACs will be made accessible to the public. At no time will covered individuals interfere with the work of Federal advisory committees or attempt to inappropriately influence the operations and advice of these committees;
- d. The scientific or technological findings, conclusions, and methodologies considered or relied upon in policy and management decisions are subject to well-established scientific processes, including expert peer review where appropriate, and policy and management decisions will appropriately and accurately reflect a composite of the best available science in compliance with relevant statutory standards;
  - e. The review of scientific products by non-scientific staff (e.g., policy and communications officials) are limited to non-technical aspects of the work and do not fundamentally alter the scientific conclusions;
  - f. The scientific or technological findings, conclusions, and methodologies considered or relied on in policy and management decisions are made available to the public in advance of any decision, except for information that is properly restricted from disclosure under procedures established in accordance with a statute, regulation, patent, trademark, Executive Order, Presidential Memorandum, or other legal authority;
  - g. Fundamental Research Communications (FRC), as defined in Section 3.08, will be disseminated only after formal peer review, whether internal or external, to ensure the quality, validity, and reliability of NOAA science. NOAA science managers and supervisors shall prohibit the dissemination of scientific works-in suspected predatory journals that charge fees for peer review and editing services without providing those services.<sup>43</sup> Supervisors may make exceptions to this prohibition in exigent circumstances, provided publication has been approved pursuant to the NOAA Framework for Internal Review and Approval of Fundamental Research Communications;
  - h. Procedures, including training, are in place to identify and address instances in which the scientific process or the integrity of scientific and technological information may be compromised, and that;
  - i. Additional procedures are adopted as are necessary to ensure the integrity of scientific and technological information and processes on which the agency relies for its decision-making or otherwise uses or prepares;
  - j. The intellectual property of others is recognized and respected; and
  - k. Public and internal communications consistently state the importance of differing scientific opinions, as well as limitations and uncertainties of the science as a legitimate and necessary part of providing the best possible scientific information to Federal decision-makers.

.02 All individuals identified in Section 2.01 of this Order must not:

- a. Suppress, alter, censor, or otherwise impede the content or timely release of scientific or technological findings or conclusions, unless explicitly required by a Department

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<sup>43</sup> *Note:* For more information on predatory journals, refer to NOAA Central Library (2020) Predatory Publishing Home. <https://libguides.library.noaa.gov/predatorypublishing>

- or government-wide statute, regulation, Executive Order, Presidential Memorandum, or other legal authority.
- b. Intimidate or coerce employees, contractors, recipients of financial assistance awards, or others to alter, suppress, censor, or otherwise impede the content or timely release of scientific findings.
  - c. Implement, or cause to be implemented, institutional barriers to cooperation and the timely communication of scientific findings or technology.

Any of the above actions may be considered interference and addressed as a violation of this policy.

- .03 It is the responsibility of the supervisory chain of any NOAA author that submits a Fundamental Research Communication (FRC) for internal review to approve or not approve the FRC as outlined in their Line Office FRC policy and procedures. The decision must be based only on whether the work is scientifically meritorious, and specifically: whether the methods used are clear and appropriate; the presentation of results and conclusions is impartial. In addition, supervisors will check that acknowledgments contain required information, there are no statements about NOAA policy, and there are no apparent, actual, or potential conflicts of interest. Consistent with DAO 219-1, the approval or non-approval of a FRC must be based on scientific merit only, and may not be based on the policy, budget, or management implications of the research. Differences of opinion will be resolved through the NOAA-wide framework for review and approval of FRCs consistent with DAO 219-1 (see Section 8.04 below).
- .04 The NOAA Science Council has developed a NOAA-wide framework for peer review and approval of Fundamental Research Communications consistent with the criteria in Section 8.03. Each Line Office has developed and documented procedures for review and approval consistent with the Science Council's framework. These procedures include time limits for review and approval, and procedures for redress if the time limits are not met. The framework and procedures are included as a complementary handbook to this NAO as the NOAA Framework for Internal Review and Approval of Fundamental Research Communications, which is posted on the Scientific Integrity Commons website.<sup>44</sup>
- .05 Scientific works that include matters of policy, budget, or management, and policy documents that make use of scientific results, are not Fundamental Research Communications by definition. Such works undergo distinctly separate review processes as outlined in DAO 219-1 and other agency orders and line office directives.
- .06 NOAA science managers and supervisors must immediately report suspected cases of scientific or research misconduct through means established under Section 9 and the Procedural Handbook for this Order.

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<sup>44</sup> National Oceanic and Atmospheric Administration. NOAA Research Council. Scientific Integrity Commons. (n.d.) NOAA Policy, Communication Research. [www.nrc.noaa.gov/Scientific-Integrity-Commons](http://www.nrc.noaa.gov/Scientific-Integrity-Commons)

## **SECTION 9. SCIENTIFIC AND RESEARCH MISCONDUCT AND RESPONDING TO ALLEGATIONS.**

- .01 Scientific and Research Misconduct occurs when an offender knew or should have known (i.e., acted intentionally or negligently) that their actions or inactions departed from accepted scientific practices. Scientific and Research Misconduct does not include honest error or differences of opinion. Scientific and Research Misconduct by covered individuals are prohibited in NOAA.
- .02 Responses to allegations of Scientific and Research Misconduct shall be initiated upon the discovery and/or credible report of:
- a. Circumvention of the integrity of the science and research process by violation of NOAA's Code of Ethics for Science Supervision and Management;
  - b. Actions that compromise the scientific process by violating NOAA's Code of Scientific Conduct. Such actions include falsification, fabrication and plagiarism (as defined in Section 3) and actions that interfere with the conduct and communication of scientific work (interference as defined in Section 3.11).
- .03 Procedures for lodging and responding to allegations of misconduct are provided in the Procedural Handbook<sup>45</sup> to this Order.

## **SECTION 10. DIFFERENCES OF SCIENTIFIC OPINION.**

Differences of scientific opinion frequently occur as part of the progress of science. In fact, NOAA encourages its scientists and those who work with science to express differing opinions. Accordingly, these differences in scientific opinion do not in and of themselves constitute violations of scientific integrity unless accompanied by actions that violate scientific integrity as defined in this document. NOAA will, in the future, develop suggested processes on how to appropriately handle differences of scientific opinion. These will be maintained as a separate handbook to this NAO.

## **SECTION 11. COMMUNICATION, OVERSIGHT, REVIEW, AND REPORTING, ROLES AND RESPONSIBILITIES.**

- .01 The NOAA Science Council, or its designee, is responsible for the communication and oversight, as well as for review and revisions, of this NOAA Administrative Order and Procedural Handbook.
- .02 The NOAA Science Council will communicate these policies and procedures to covered individuals, including employees of Cooperative Institutes, NOAA research partners, other collaborators, and any other recipients of financial assistance awards.

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<sup>45</sup> [https://sciencecouncil.noaa.gov/wp-content/uploads/2022/07/Scientific-Integrity-ProceduralHB\\_-NAO-202-735D.2\\_Final.pdf](https://sciencecouncil.noaa.gov/wp-content/uploads/2022/07/Scientific-Integrity-ProceduralHB_-NAO-202-735D.2_Final.pdf)

- .03 The NOAA Science Council will maintain the Scientific Integrity Commons website<sup>46</sup> where it will post a general statement of the NOAA Scientific Integrity Policy, as well as public links to all scientific integrity policy documents. The Council will ensure that the policy is referenced, as appropriate, in financial assistance award solicitations, requests for proposals and in the terms and conditions of resulting financial assistance awards and contracts, and communicated to individuals either involved in peer review panels evaluating proposals to NOAA grants programs and cooperative agreements or evaluating internal NOAA scientific programs and activities.
- .04 The NOAA Science Council will review the policy at least every 2 years to ensure that it is current and effective in relation to its purpose as stated in Section 1.
- .05 The Scientific Integrity Committee is chartered as independent of the NOAA Science Council but will coordinate closely with the Council. It will consist of Line Office Scientific Integrity Officers and representatives from relevant staff offices (including but limited to the Office of General Counsel and the Office of Human Capital Services). This Committee will support the NOAA SIO in responding to allegations of scientific misconduct or loss of scientific integrity, and in promoting a culture of scientific integrity throughout the agency. It will also serve to draft, review, and revise the scientific integrity policy and related policies.
- .06 NOAA's Chief Scientist, in consultation with the Deputy Under Secretary for Operations, will provide annual public reporting of the aggregate number of misconduct cases through the NOAA Scientific Integrity Commons website. The report will include the number of consultations conducted (whether or not they result in a formal allegation), the affiliation of the individuals involved (i.e., Federal employees, contractors, partners, and recipients of financial assistance awards), how many allegations were investigated, the number of findings of misconduct, and any appeals received to previous findings. If the position of Chief Scientist is vacant, the Under Secretary will assign this responsibility to another high-level official with scientific expertise within NOAA.

## **SECTION 12. AUTHORITIES.**

- .01 Statutes, Regulations, and Policies
- a. Authority to issue Departmental Regulations, 5 U.S.C. § 301, which allows the head of an executive department to prescribe regulations for the conduct of its employees.
  - b. Standards of Ethical Conduct for Employees of the Executive Branch, 5 C.F.R. § 2635, and Acts Affecting Personal Financial Interest, 18 U.S.C. § 208 (The Conflict of Interest Statute), and related rulings by the U.S. Office of Government Ethics.

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<sup>46</sup> National Oceanic and Atmospheric Administration. NOAA Research Council. Scientific Integrity Commons. (n.d.) NOAA Policy. [www.nrc.noaa.gov/Scientific-Integrity-Commons](http://www.nrc.noaa.gov/Scientific-Integrity-Commons)

- c. Federal Policy on Research Misconduct, 65 FR 76,260 (December 6, 2000), available at [www.federalregister.gov/documents/2000/12/06/00-30852/executive-office-of-the-president-federal-policy-on-research-misconduct-preamble-for-research](http://www.federalregister.gov/documents/2000/12/06/00-30852/executive-office-of-the-president-federal-policy-on-research-misconduct-preamble-for-research)
- d. Presidential Memo to Heads of the Executive Departments and Agencies (March 9, 2009), available at <https://obamawhitehouse.archives.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09>
- e. Office of Science and Technology Policy Memorandum on Scientific Integrity (December 17, 2010), available at <https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf>
- f. Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-based Policymaking (January 27., 2021), available at [www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/](http://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/)
- g. Office of Science and Technology Policy report Protecting the Integrity of Government Science (January 11, 2022), [www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting\\_the\\_Integrity\\_of\\_Government\\_Science.pdf](http://www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting_the_Integrity_of_Government_Science.pdf)
- h. Office of Science and Technology report A Framework for Federal Scientific Integrity Policy and Practice (January 2023), [www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf](http://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf)

.02 This Order is an addition to, and does not alter, the requirements applicable to the specific activities, topics, and persons that are explicitly covered by other applicable Federal statutes, regulations, or policy directives, or by other NOAA or Department of Commerce administrative orders. These include, but are not limited to:

- a. Department policy for engaging in public communications, as specified in Departmental Administrative Order (DAO) 219-1, “Public Communications,” as clarified on June 15, 2011 by the General Counsel of the United States Department of Commerce’s *Memorandum for all Bureau Chief Counsels and General Counsels*.<sup>47</sup>
- b. The Information Quality Act (Public Law 106-554, Section 15), which may be applicable to certain information disseminated by NOAA.
- c. Testimony or information provided to Congress that is addressed by DAO 218-1, “Legislative Activities.”<sup>48</sup>
- d. Rulemakings, adjudications.
- e. Requirements for authorizing the production, printing, and distribution of publications and audiovisuals that are addressed by DAO 219-4.
- f. Department regulations and policies pertaining to financial assistance awards, as specified in 15 C.F.R. Parts 14 and 24 (as applicable); the Department of Commerce

<sup>47</sup> Note: DAO 219-1, “Public Communications,” at [www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](http://www.osec.doc.gov/opog/dmp/daos/dao219_1.html), does not apply to employees in bargaining units represented by the National Weather Service Employees Organization.

<sup>48</sup> Department of Commerce. Office of Privacy and Open Government. Legislative Activities. DAO 218-1. [www.osec.doc.gov/opog/dmp/daos/dao218\\_1.html](http://www.osec.doc.gov/opog/dmp/daos/dao218_1.html)

- Financial Assistance Standard Terms and Conditions (April 2019); and the Department of Commerce Grants and Cooperative Agreements Manual (October 2016).
- g. Foundations for Evidence-Based Policymaking Act of 2018, Public Law (P.L.) 115-435, 132 Stat. 5529 (Jan. 14, 2019).
  - h. Additional Statutes and Policies – NAO 202-1106: NOAA Sexual Assault and Sexual Prevention and Response Policy; 15 C.F.R. § 27 – Common Rule for the Protection of Human Subjects; P.L. 89-544 – Animal Welfare Act; 5 U.S.C. § 1214 – Discipline of Federal employee by agency; 5 U.S.C. § 75 – Adverse Actions; The Crowdsourcing and Citizen Science Act of 2016 (15 U.S.C. § 3724); The America Competes Act.

### **SECTION 13. EFFECT ON OTHER ISSUANCES.**

This document supersedes NAO 202-735D.2, “Scientific Integrity,” effective January 19, 2021.

An electronic copy of this Order will be posted in place of the superseded Order on the NOAA Office of the Chief Administrative Officer website under the NOAA Administrative Issuances Section at [www.noaa.gov/organization/administration/noaa-administrative-orders-chapter-202-personnel](http://www.noaa.gov/organization/administration/noaa-administrative-orders-chapter-202-personnel)



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Under Secretary of Commerce  
for Oceans and Atmosphere  
and NOAA Administrator

Offices of Primary Interest:

- Office of the Under Secretary
- NOAA Office of General Counsel