

National Oceanic and Atmospheric Administration	NOAA Administrative Order 202-735D.2	
NOAA ADMINISTRATIVE ORDER SERIES	DATE OF ISSUANCE January 19, 2021	EFFECTIVE DATE January 19, 2021
SUBJECT: SCIENTIFIC INTEGRITY		

## **SECTION 1. PURPOSE**

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. 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. It also denotes the agency's commitment to a culture of support for NOAA's employees, which are its principal science asset.

The Procedural Handbook to 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.

Additional guidance and resources related to scientific integrity and the implementation of this Order is available to staff and the public at the NOAA Science Council's Scientific Integrity Commons webpage.<sup>1</sup>

## **SECTION 2. SCOPE**

.01 This Order applies to:

- a. 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; and
- b. All contractors who engage in, or assist with, activities identified above.

.02 Recipients of NOAA financial assistance awards, including NOAA Cooperative Institutes, NOAA research partners, and other collaborators, are responsible for abiding by the principles contained in this Order regarding NOAA's commitment to Scientific Integrity, as specified in award agreements or in other written agreements with NOAA.

<sup>1</sup> National Oceanic and Atmospheric Administration. NOAA Science Council. Scientific Integrity Commons. (n.d.), NOAA Policy, Scientific Integrity. <https://www.nrc.noaa.gov/Scientific-Integrity-Commons>

.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 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, References).

.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 Fabrication

Making up data or scientific results and recording or reporting them.<sup>2</sup>

#### .06 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>3</sup>

#### .07 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>4</sup>

#### .08 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.<sup>5</sup>

#### .09 Interference

Defined as:

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<sup>2</sup> Federal Policy on Research Misconduct, 65 F.R. 76262 (2000)  
<https://www.federalregister.gov/documents/2000/12/06/00-30852/executive-office-of-the-president-federal-policy-on-research-misconduct-preamble-for-research>

<sup>3</sup> Federal Policy on Research Misconduct, 65 F.R. 76262 (2000)

<sup>4</sup> See 5 C.F.R. § 2635.502(b).

<sup>5</sup> Department of Commerce. Office of Privacy and Open Government. Public Communications. (2008).  
Departmental Administrative Order (DAO) 219-1. [https://www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](https://www.osec.doc.gov/opog/dmp/daos/dao219_1.html)

- a. Suppressing, altering, or otherwise impeding, the content or timely release of scientific or technological findings or conclusions, 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, or others to suppress, alter, censor, or otherwise impede the content or timely release of scientific or technological 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.

#### .10 Plagiarism

The appropriation of another person's ideas, processes, results, or words without giving appropriate credit.<sup>6</sup>

#### .11 Research and Development

Research is creative and systemic work undertaken in order to increase the stock of knowledge, including knowledge of humankind, culture and society, and to devise new applications of available knowledge.<sup>7</sup>

- 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 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>8</sup> Testing is an important part of the development process.

#### .12 Science

Science at NOAA is the systematic study of the structure and behavior of the ocean, coasts, freshwater lakes, atmosphere (and the region of space close to Earth), and their related ecosystems, including people; and the integration of research, analysis, observations, monitoring, and environmental modeling, or subsets of those and related fields of study.

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;

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<sup>6</sup> Federal Policy on Research Misconduct, 65 F.R. 76262 (2000)

<sup>7</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>

<sup>8</sup> OECD (2015), Frascati Manual 2015.

- 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>9</sup>

### .13 Scientific Activities

Activities that involve inventorying, monitoring, observations, 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 social sciences, as well as engineering and mathematics, or any combination of these.

### .14 Scientific and Research Misconduct

Scientific misconduct is an intentional, knowing, or negligent (i.e., should have known) and significant departure from the Code of Scientific Conduct or the Code of Ethics for Supervisors and Managers. 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>10</sup> and may be committed intentionally, knowingly or recklessly.

### .15 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.

### .16 Scientific Integrity

The condition resulting from adherence to professional values and practices when conducting and applying the results of science that ensures objectivity, clarity, and reproducibility, and that provides insulation from bias, fabrication, falsification, plagiarism, interference, censorship, and inadequate procedural and information security.

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<sup>9</sup> Note: Adapted from NOAA (2010) "Next Generation Strategic Plan", p. 3, [https://www.performance.noaa.gov/wp-content/uploads/NOAA\\_NGSP.pdf](https://www.performance.noaa.gov/wp-content/uploads/NOAA_NGSP.pdf)

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

## .17 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.

## .18 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>11</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>12</sup> or
- d. Attempting to impede a scientist's activities or undermine or penalize the scientist for making adverse findings or discovering unfavorable data.

## .19 Traceability

The ability to verify sources, data, information, methodology, results, assessments, research, analysis, conclusions or other evidence to establish the integrity of findings.

## .20 Transparency

Characterized by visibility or accessibility of information. The quality or state of being transparent.

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

It is NOAA policy that:

- .01 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.

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<sup>11</sup> Note: Adapted from Government of Canada "Model Policy on Scientific Integrity", <https://www.ic.gc.ca/eic/site/052.nsf/eng/00010.html>

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>12</sup> Delborne, J,A, (2016) Suppression and Dissent in Science. In Bretag T. (Eds.), Handbook of Academic Integrity (pp. 943-956), Singapore: Springer.

- .02 NOAA leadership, policy makers, management and scientists are expected to know of, and understand, the statutes, regulations, policies, and relevant mandates that apply to their professional conduct and work.
- .03 Under no circumstance may any covered individuals ask or direct Federal scientists or other NOAA employees to suppress or alter scientific findings, analysis, assessments, or research.
- .04 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.
- .05 Credible allegations of fabrication, falsification, plagiarism, and interference with 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 made based on 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 engaged in science and the development of scientific products (Defined in Section 3.17), are encouraged to publish data and findings in transparent ways that enhance NOAA's reputation for reliable science. This includes dissemination through reputable peer-reviewed, professional, or scholarly journals, 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>13</sup> NOAA Information Quality Guidelines,<sup>14</sup> and other applicable legislative and policy mandates.
- .02 When requested by the media, NOAA will provide 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 subject to guidance in Departmental Administrative Order (DAO) 219-1 "Public Communications".<sup>15</sup> Email or other forms of electronic communication in response to inquiries from the media concerning scientific or

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<sup>13</sup> The White House. Office of Management and Budget: Open Government Plan. (2016). <https://obamawhitehouse.archives.gov/omb/open>

<sup>14</sup> U.S. Department of Commerce. NOAA. Information Quality Guidelines. (2014). <https://www.noaa.gov/organization/information-technology/information-quality-guidelines>

<sup>15</sup> U.S. Department of Commerce. Office of Privacy and Open Government. Public Communications. DOA 219-1. (2008). [https://www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](https://www.osec.doc.gov/opog/dmp/daos/dao219_1.html)

technical matters based on an employee's official work, 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>16</sup> as well as DAO 219-1.<sup>17</sup> The Department of Commerce Policy on the Approval and Use of Social Media and Web 2.0 and DAO 219-1 and do not apply to employees in bargaining units represented by the National Weather Service Employees Organization.

- .04 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, but 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, or, 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.
  
- .05 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.
  
- .06 NOAA supports the election or appointment of its scientists and engineers to fellowships or positions in professional organizations subject to applicable ethics and policy requirements. In accordance with Department of Commerce policy and subject to management approval, NOAA employees may generally 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>18</sup> Employees should consult with

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<sup>16</sup> U.S. Department of Commerce Policy on the Approval and Use of Social Media and Web 2.0 (2010).

<https://www.commerce.gov/about/policies/social-media>

<sup>17</sup> Department of Commerce. Office of Privacy and Open Government. Public Communications. (2008). DAO 219-1. [https://www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](https://www.osec.doc.gov/opog/dmp/daos/dao219_1.html)

<sup>18</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).

their supervisor before accepting an appointment on behalf of NOAA to such a position.

- .07 NOAA encourages recognition of 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 parity with regard to the opportunity to receive awards and honors for both private-sector and public-sector scientists and engineers.
- .08 NOAA supports open communication internally and with the public, and has developed policy guidance<sup>19</sup> and online training that is readily available to its employees and staff. NOAA requires the following of all employees as identified below:
  - a. Mandatory biennial scientific integrity training for all covered individuals (Defined in Section 2.01);
  - b. Completion of scientific integrity training within their first full performance cycle of all newly hired covered individuals; and
  - c. Signed affirmation by all political appointees and Senior Executive Service members within 30-days of beginning their employment with NOAA that they have taken scientific integrity training and will adhere to this NAO.
- .09 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.
- .10 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)].

## **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 scientific information in all formats, consistent with privacy and classification standards, and in keeping with the statutory Department of Commerce and NOAA data sharing and management policies. NOAA will abide by its plans put in place in response to the Office of Science and Technology Policy (OSTP) Memo, “Increasing Access to the Results of Federally Funded Scientific

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<sup>19</sup> National Oceanic and Atmospheric Administration. NOAA Science Council. Scientific Integrity Commons. (n.d.), NOAA Policy. <https://www.nrc.noaa.gov/Scientific-Integrity-Commons>

- Research” Public Access to Research Results<sup>20</sup> and the Foundations for Evidence-Based Policy-Making Act (the Evidence Act);<sup>21</sup>
- b. 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;
  - c. 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;
  - d. Ensure that 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 and Peer Review Guidelines. 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;
  - e. Provide information to employees on, and abide by existing, whistleblower protections. NOAA employees who file allegations of scientific misconduct are covered by these protections, as noted in Section 5.10.
  - f. Ensure that NOAA public communications guidance is consistent with Department of Commerce guidance. 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;
  - g. Communicate scientific and technological findings clearly and accurately. This includes explaining the underlying assumptions; 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 this may not be possible, and in such cases NOAA will clearly state this;
  - h. 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;
  - i. Enhance scientific integrity through appropriate cooperative engagement with the communities represented by professional societies and organizations;
  - j. 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
  - k. Ensure the sharing of best administrative and management practices that promote the

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<sup>20</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>21</sup> Foundations for Evidence-Based Policymaking Act of 2018, H.R. 4174 (2018)

integrity of NOAA's scientific activities.

- .03 As provided in Section G.05.h of the Department of Commerce Financial Assistance Standard Terms and Conditions,<sup>22</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;
  - 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 Section .03 below are provided as a set of best practices for those covered by this policy.<sup>23</sup> NOAA expects its employees at all levels of the agency to abide by these principles to the best of their ability.
- .03 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

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<sup>22</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)

<sup>23</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>

- characterizing associated uncertainties in using those results for decision-making, and in representing those results to other scientists, decision-makers, and the public.
- ii. Preserve the integrity of the data record through adherence to NOAA data management standards and not fabricate, falsify, or delete raw data.
  - iii. Approach all scientific activities objectively and completely, and accurately report results in a timely manner without allegiance to individuals, organizations, or ideology.
  - iv. Disclose any apparent, potential, or actual financial conflicts of interest or non-financial conflicts of interest of their own and others.
  - v. Objectively consider conflicting data and/or studies.
  - vi. 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 authorship criteria.
- b. Accountable in conducting research and interpretation of research results and:
- i. Use resources entrusted to them responsibly, which includes equipment, 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 before public dissemination in reputable journals or other public outlets, and are not disseminated on preprint servers and in predatory journals.<sup>24</sup>
  - iv. Provide scientific advice to NOAA as requested to inform management and other decision-making.
- c. Professional, courteous, and fair while working with others; respectful of their ideas and:
- i. Do 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 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.

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<sup>24</sup> *Note:* For more information on predatory journals, refer to NOAA Central Library (2020) Predatory Publishing Home. <https://libguides.library.noaa.gov/predatorypublishing>

- iv. Respect confidential and proprietary information provided by communities, such as Native American tribes or tribal organizations, and individuals whose interests are studied or affected by scientific activities or the resulting information, adhering to proprietary laws.
- 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 March 9, 2009, Presidential Memo to Heads of the Executive Departments and Agencies and this Order.<sup>25</sup> Specifically, science managers and supervisors will ensure:

- 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 (FACs) 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, and ensuring FAC member qualifications and special interests are made readily available. Except when prohibited by law, findings by FACs will be made accessible to the public;
- d. The scientific or technological findings, conclusions, and methodologies to be considered or relied upon in policy decisions will be subject to well-established scientific processes, including peer review where appropriate, and policy decisions will appropriately and accurately reflect a composite of the best available science in compliance with relevant statutory standards;
- e. The scientific or technological findings, conclusions, and methodologies considered or relied on in policy decisions will be 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;

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<sup>25</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>

- f. 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 dissemination of scientific works on preprint servers that post manuscripts online prior to formal peer review, and in suspected predatory journals that charge fees for peer review and editing services without providing those services.<sup>26</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;
- g. 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;
- h. Additional procedures are adopted as are necessary to ensure the integrity of scientific and technological information and processes on which the agency relies in its decision making or otherwise uses or prepares; and
- i. The intellectual property rights of others are respected.

.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 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 an 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, specifically, whether the methods used are clear and appropriate; the presentation of results and conclusions is impartial. Additionally, 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 Fundamental Research Communication must be based on scientific merit only, and thus cannot 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 FRC consistent with DAO 219-1 (See Section 8.04 below).

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<sup>26</sup> Note: For more information on predatory journals, refer to NOAA Central Library (2020) Predatory Publishing Home. <https://libguides.library.noaa.gov/predatorypublishing>

- .04 The NOAA Science Council 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 developed and documented procedures for review and approval consistent with the Research Council's framework. The 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 an appendix 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>27</sup>
- .05 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.

## **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.
- .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 3.09).
- .03 Procedures for lodging and responding to allegations of misconduct are provided in the Procedural Handbook to this Order.

## **SECTION 10. COMMUNICATION, OVERSIGHT, REVIEW, AND REPORTING**

- .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 Scientific Integrity 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>27</sup> National Oceanic and Atmospheric Administration. NOAA Research Council. Scientific Integrity Commons. (n.d.) NOAA Policy, Communication Research.

- .03 The NOAA Science Council will maintain the Scientific Integrity Commons website<sup>28</sup> where it will post a general statement of the NOAA Scientific Integrity Policy and links to relevant 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 two years to ensure that it is current and effective in relation to its purpose as stated in Section 1.
- .05 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 website. The report will also 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, and the number of findings of misconduct. 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 11. REFERENCES**

- .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 A Personal Financial Interest, 18 U.S.C. § 208 (The Conflict of Interest Statute), and related rulings by the U.S. Office of Government Ethics.
  - c. Federal Policy on Research Misconduct, 65 F.R. 76,260 (December 6, 2000), available at <https://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>.
- .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,

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<sup>28</sup>National Oceanic and Atmospheric Administration. NOAA Research Council. Scientific Integrity Commons. (n.d.) NOAA Policy. <https://www.nrc.noaa.gov/Scientific-Integrity-Commons>

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>29</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>30</sup>
- d. Rulemakings, adjudications, or publications in the Federal Register.
- 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 Financial Assistance Standard Terms and Conditions (April 2019); and the Department of Commerce Grants and Cooperative Agreements Manual (October 2016)

## **SECTION 12. EFFECT ON OTHER ISSUANCES**

.01 This document supersedes NAO 202-735D, "Scientific Misconduct," effective December 07, 2011.

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 <https://www.noaa.gov/organization/administration/noaa-administrative-orders-chapter-202-personnel>.



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<sup>29</sup> Note: DAO 219-1, "Public Communications," at [https://www.osec.doc.gov/opog/dmp/daos/dao219\\_1.html](https://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>30</sup> Department of Commerce. Office of Privacy and Open Government. Legislative Activities. DAO 218-1. [https://www.osec.doc.gov/opog/dmp/daos/dao218\\_1.html](https://www.osec.doc.gov/opog/dmp/daos/dao218_1.html)

Offices of Primary Interest:  
Office of the Under Secretary  
NOAA Office of General Counsel (GC)