Comment on Information To Improve Federal Scientific Integrity Policies

July 28, 2021

Prepared with the input and guidance of the ASA Committee on Professional Ethics

We write to provide comments to improve federal scientific integrity policies on behalf of the American Statistical Association (ASA). The ASA Committee on Professional Ethics oversees the writing of the ASA Ethical Guidelines for Statistical Practice (https://www.amstat.org/asa/files/pdfs/EthicalGuidelines.pdf). In response to the Request for Information To Improve Federal Scientific Integrity Policies (86 FR 34064), the committee shares these guidelines because of their fundamental relevance to scientific integrity.

The ASA Ethical Guidelines for Statistical Practice are rooted in the principles of respect, fairness, transparency, and accountability. Within the guidelines, topics include the communication of scientific and technological information (RFI Topic 2, Guideline Principles A, B and C), addressing scientific issues and the scientific workforce (RFI topic 3, Guideline Principles E and F), and improving the training of scientific staff (RFI topic 4, Guideline Principles A, F, and H). Key ideas based on the Guidelines that are relevant for policies that are intended to promote scientific integrity include the following:

- The ethical statistical practitioner uses methodology and data that are relevant and appropriate, without favoritism or prejudice, and in a manner intended to produce valid, interpretable, and reproducible results (Principle A).
- The ethical statistical practitioner is candid about any known or suspected limitations, defects, or biases in the data that may impact the integrity or reliability of the statistical analysis. Objective and valid interpretation of the results requires that the underlying analysis recognizes and acknowledges the degree of reliability and integrity of the data (Principle B).
- Ethical statistical practitioners report the limitations of statistical inference and possible sources of error (Principle B).
- Regardless of personal or institutional interests or external pressures, the ethical statistical practitioner does not use statistical practices to mislead any stakeholder (Principle C).

Founded in 1839, the American Statistical Association is the oldest scientific professional association in the United States. With 15,000 members in academia, industry, and government and statistics being the science of learning from data, ASA's membership and expertise is especially diverse. ASA member expertise covers a myriad of topics including, for these comments, privacy and confidentiality,

reproducibility, data analysis, optimization of the scientific process, experiment and survey design, decision analysis and support, minimization of and accounting for bias, and uncertainty quantification.

Questions can be directed to ASA Director of Science Policy, Steve Pierson.