



ADVANCING EARTH
AND SPACE SCIENCE

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Via email: JCORE@ostp.eop.gov

Chloe Kontos, NSTC Executive Director
Office of Science Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Dear Ms. Kontos,

On behalf of the American Geophysical Union (AGU), a nonprofit, nonpartisan scientific association representing more than 110,000 Earth and space scientists, we are grateful for the opportunity to submit our responses to JCORE on ways to improve the American research environment. AGU represents a significant portion of America's research enterprise, and we are committed to fostering scientific collaboration and inclusivity through scientific meetings, scholarly publications, and programs that build connections and collaboration between science and society. We are pleased to share our insights with JCORE.

Ensuring Rigor and Integrity in Research

AGU believes that the responsible practice of science is fundamental to scientific advancement. In our official [position statement](#) on the responsibilities and rights of scientists, we describe our organization's fundamental views about the ethical obligations that come with the expected freedoms for researchers. AGU is proud to promote awareness of our ethical principles and encourage the scientists in our community to do the same. AGU leads a [Center on Ethics and Equity](#) that provides resources for institutions and individuals on how to foster responsible scientific conduct, including the promotion of diversity and inclusion and STEM equity, countering sexual harassment in the sciences, and upholding strong standards for data and publishing. Center resources include workshops, webinars, teaching tools, academic research, and model and actual ethics policies, standards, and codes of conduct. (Q3)

We support peer-review as the gold-standard process for ensuring scientific rigor in published results, and all of AGU's [22 publications](#) use a meticulous peer-review system. We also provide [ethics resources](#) for both authors and reviewers. (Q1) We further support the peer-review methods used at NSF to assess the value of research proposals across all scientific disciplines and



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in agency decadal surveys and for National Academies studies and reports. The peer-review approach guarantees merit and establishes confidence in the recommendations and conclusions of research studies. Science conducted at federal agencies must be held to this same standard.

Availability of data and methods is a critical component of scientific transparency. Our publications division has implemented the [Enabling FAIR Data](#) guidelines, which will help grow a data repository – an incentive for strengthening quality control, data citation, and reporting of negative findings. (Q4) Access to data is important for assessing research conclusions, but not without some limitations. For example, the recently proposed policy on [transparency at the EPA](#) is misguided, as it arbitrarily excludes findings that are both of high quality and high importance to policy decisions about human health and the environment.

With respect to scientific transparency, AGU supports open access for publishing, but only to the extent that it harms neither the quality of the published research nor the access that individual, non-institutional researchers have to the research. The current system allows a 12-month embargo period on science and engineering publishers – including non-profit groups like AGU - making federally funded scientific discoveries available to the global market. This approach provides the financial stability to enable us to support the very peer review that ensures the quality and integrity of the research enterprise and to drive advancement through our meetings, programs and outreach.

AGU is already committed to providing the widest possible dissemination for scientific communication to encourage global, inclusive participation. For example, since 2010, all new journals that AGU has acquired or started have been open access, while our other older subscription titles allow an open access option. Authors can also choose open access options in any AGU journal they publish in, regardless of whether it requires a subscription, and are allowed six months after publication to place their article in an institutional repository. Furthermore, authors can deposit both preprints and accepted peer-reviewed manuscripts into servers such as our preprint server [ESSOAr](#).

Overall, 96% of content published in AGU journals since 1997 is free. Finally, and importantly, AGU's publications operate as a non-profit program that supports researchers who do not have funding or cannot fund publishing in open access journal. For example, our members who live and work in locations where access to institutional funding is minimal cannot afford open access costs. As such, shifting costs from larger organizations to smaller ones – or to individuals – can work against goals of bringing underrepresented groups into STEM fields.



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AGU provides this range of options for access to research in order to maximize availability for scientists to continue to represent and advance Earth and space science broadly while allowing AGU to ensure the highest possible quality of the content.

Overall, this proven and successful model for reporting, curating and archiving scientific results advances the U.S. research enterprise, while ensuring both openness and reliability in research and development.

Administrative Requirements

AGU is committed to upholding the highest level of scientific integrity and professional ethics in all of its activities and has established a set of [guidelines for scientific integrity and professional ethics](#) for the actions of the members and the governance of the union. These guidelines apply to the conduct of scientific research and its submission for publication. It applies to authors, as well as reviewers and editors involved in the peer review processes. In general, AGU follows the standards of the [Committee on Publication Ethics \(COPE\)](#). Per these guidelines, scientific research, and the preparation of the results, must be free of any impropriety or undisclosed conflicts of interest. Intentional plagiarism, fabrication, or falsification are serious examples of scientific misconduct and as such are inappropriate actions that will discredit the union and compromise the integrity of science.

Further, AGU asks any nominees for any of the Union's honors and awards, as well as volunteers for any of our leadership positions and committees to comply with a [COI policy and process](#) in order to promote the values of equality, inclusiveness, excellence, and integrity. (Q4)

As referenced earlier with regard to our [position on the responsibilities and rights of scientists](#), with duties also come some privileges. Among these are the right to conduct research on any topic that does not breach professional ethical standards and to report misconduct without fear of retaliation, the right to collaborate with colleagues and to freely express research at scientific meetings, in scientific literature and in the media, the right to protect private, sensitive, or confidential data information, and the right of last review on institutional communication materials relating to a scientist's work, among others.

These rights extend not only to academic and private sector scientists, but also to those who work at federal agencies. Many agencies have scientific integrity policies, but these are not uniformly strong nor enforced. Further, under the concept of frugality, some federal scientists have been



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blocked from presenting critical taxpayer research at scientific conferences and from collaborating with their colleagues. We and others in the scientific community [oppose these undue burdens](#) and believe that freedom to share knowledge creates a stronger scientific enterprise

Strengthening Security

The global exchange of academic and scientific ideas is necessary to fuel innovation. Alongside [many other scientific organizations](#), we believe the government has a duty to appropriately balance the conduct and exchange of international science with security interests. We appreciate and support the need to secure our nation and its citizens from individuals who seek to do the United States and its interests harm; however, while doing so, we must remain open to those pursuing academic study and scientific and engineering research. In fact, our nation's security depends on a visa and immigration system that accomplishes both important tasks. Global academic and scientific exchange is now constant and necessary, fueling the innovations essential to strengthening our nation's economy and improving the lives of U.S. citizens. (Q3b)

Fostering a Safe, Inclusive, and Equitable Research Environment

Building on our commitment to scientific ethics and our strong support of the principles of honesty and transparency, AGU rejects harassment and discrimination of any kind. To AGU, *personal integrity and research integrity are one and the same*. We proudly endorse the [Combatting Sexual Harassment in Science Act](#) and consider harassment to be a form not just of personal, but of scientific misconduct. We observe a strong [ethics policy](#) that defines clear expectations for all participating AGU programs, as well as clear procedures for follow-up on any code-of-conduct concerns. (Q1e) AGU is also part of the recently formed [Societies Consortium for Addressing Harassment in STEMM](#), which leverages the power of scientific societies to provide a unique forum for learning and sharing leading practices for addressing harassment, and creating a culture of inclusivity. The National Academies have also created an [Action Collaborative](#) that aims to raise awareness and elevate best practices and policies to prevent sexual harassment in STEMM (Q1a,b)

A recent National Academies consensus study [report](#) concluded that there are more than 20 million young people of color in the United States who are grossly underrepresented in the STEM workforce, and that securing their participation in greater numbers could help re-establish our nation's pre-eminence in STEM innovation and productivity. AGU fully supports fostering a diverse and inclusive 21st century STEM workforce and have endorsed relevant legislation, such as the [STEM Opportunities Act of 2019](#) and [the Combatting Sexual Harassment in Science Act of 2018](#). We also



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support legislation that incorporates recommendations from the National Research Council's report "*A Framework for K-12 Science Education*," and the Next Generation Science Standards. AGU has made supporting a diversity of backgrounds and ideas a priority to ensure the American scientific enterprise has a bright future. (Q2a)

AGU is committed to cultivating ethics and diversity in science, and we welcome the opportunity to work with JCORE to ensure that the American research environment cultivates integrity, collaboration, and excellence.

Respectfully,

A handwritten signature in black ink that reads "Lexi Shultz".

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