

November 2, 2018

Dr. France Córdoba
Director
National Science Foundation
4201 Wilson Blvd, Room 605
Arlington, VA 22230

Dear Dr. Córdoba:

We, as leaders of major scientific organizations, write on behalf of the biological and ecological community to express concern with the National Science Foundation (NSF) Biological Sciences Directorate's (BIO) new policy that limits the number of proposal submissions to its core programs to one Principal Investigator (PI)/Co-PI submission per year. The scientific societies writing to you represent thousands of scientists engaged in ecological and biological research. We are concerned that this policy will have unintended negative consequences on the quality and innovation of NSF-funded science, on the careers of individual investigators, and on the affected disciplines. We urge NSF-BIO to reconsider and rescind the policy.

The United States has long benefitted from policies and investments that promote world-class research and innovation. The NSF Biological Sciences Directorate provides essential support for our nation's place-based biological research, such as field stations and natural science collections. A better understanding of life on Earth helps us to make new bio-based discoveries in the realms of food, fiber, fuel, pharmaceuticals, and bio-inspired innovation. It also increases our understanding of how biological systems and functions respond to environmental changes. Restricting scientists' contributions to lead as only one PI or Co-PI for each core program a year does not contribute to achieving discoveries.

NSF conveyed that the new one PI/Co-PI policy is to limit submissions and resubmissions of similar proposals within a given year because BIO now does not have proposal deadlines. A cap on submissions as PI/Co-PI does not seem to be a targeted response to the stated concern about rapid resubmission of the same proposal within a year. **We have not seen convincing evidence that BIO submissions should be limited in a way markedly different from submissions to other NSF directorates that have moved away from deadlines.**

The BIO Directorate is the sole directorate without proposal deadlines within NSF with the cap. This places scientists who may apply for, and receive funding from, the individual core BIO programs at an unfair disadvantage when compared with other researchers who receive funding from other NSF directorates. Other programs within NSF without proposal deadlines approach the policy differently: some without proposal deadlines do not place a limit on the number of proposals a PI may submit or limit PIs to two proposals under consideration at the same time; others restrict PIs from resubmitting the same proposal within a year of its submission or explicitly state that PIs may submit multiple proposals only if they are significantly different from other proposals under review.

We are aware that BIO leadership states that individual researchers will still have multiple opportunities to submit each year. While PIs may indeed submit one research proposal to each of several core tracks in BIO (DEB, IOS, and MCB), the reality is that almost no scientist's research program is so broad that they can submit viable proposals across these subdisciplines.

The PI/Co-PI cap would diminish the number of good ideas arriving at NSF for competition within its core BIO programs. It would further reduce the willingness of a PI to submit high-risk high-reward ideas. It especially penalizes scientists who will likely favor "safe" or "fundable" submissions over novel, innovative and transformative ideas. The one PI/Co-PI cap leaves less money for research because it encourages unlimited numbers of senior personnel that would result in higher indirect costs. The first \$25,000 of subawards will pay the indirect cost to the main institution and also to the institution receiving the subaward.

The cap may also negatively impact individuals whose institutions expect them to generate multiple proposals per year (and evaluate them as individual intellectual leaders). Caps on submission of proposals for people in some, but not all NSF-funded disciplines, may translate into institutions and departments preferring to sustain or add faculty lines in areas without caps on submissions – thereby disadvantaging the ecological and related biological disciplines.

Today's research enterprise tackles complex scientific questions through collaboration among complementary skills, approaches and disciplines. NSF has recognized the importance of interdisciplinary research in their top-down solicitations such as Coupled-Natural Human Systems. However, the new cap for each core BIO program would hamper such interdisciplinary collaboration by restricting the number of proposals in which each PI/Co-PI can be intellectually engaged within each core track. The inevitable consequence under this new policy is that BIO will fund mostly single-investigator proposals and the biological sciences at NSF will be handicapped relative to other directorates that foster collaboration.

The undersigned societies respectfully request that NSF consider changing the one PI/Co-PI policy to prevent these unintended consequences. Our nation and the science of ecology cannot lose a year of research while NSF monitors its impact. The ecological and biological community was not consulted or involved in the new policy, and it surprised many. BIO can easily adjust its policy using other directorates' policies as models to achieve its goal to limit submissions and resubmissions of similar proposals within a given year. Other possible solutions would be to allow Co-PI status in multiple proposals such as senior personnel have now and to require a minimum of six months between resubmission of the same proposal.

Thank you for your support of the ecological and biological sciences. Please contact Alison Mize, alison@esa.org if you have questions. We stand ready to work with NSF and offer our assistance to seek a compromise that benefits NSF and the scientific community.

Ecological Society of America
American Arachnological Society
American Fern Society
American Geophysical Union
American Ornithological Society
American Society of Mammalogists
American Society of Naturalists
American Society of Parasitologists
American Society of Primatologists
Association for the Sciences of Limnology and Oceanography
Genetics Society of America
Helminthological Society of Washington
International Society for Neuroethology
J B Johnston Club for Evolutionary Neuroscience
Mycological Society of America
Society for Behavioral Neuroendocrinology
Society for Freshwater Science
Society for Integrative and Comparative Biology
Society for Molecular Biology and Evolution
Society for the Study of Amphibians and Reptiles
Society for the Study of Evolution

cc: Joanne Tornow, Suzanne Barbour