

A new proposal submission policy announced on 23 August 2018 by the U.S. National Science Foundation Biology Directorate now mandates that investigators can serve as principal investigator (PI) or co-PI on only one proposal per fiscal year to each of the core tracks of the Divisions of Environmental Biology, Integrative Organismal Systems, and Molecular and Cellular Biosciences. The Divisions' new program solicitations (1,2,3) highlight changes previewed in October 2017 (4) including the elimination of submission deadlines and preproposals. However, the restriction on proposal number was not previously announced nor available for comment.

The rationale for the restriction appeared in a FAQ posted online three weeks later (5): "Like every other program at NSF that has transitioned to a no-deadline proposal submission process, BIO has imposed a limitation on proposal submissions. The goal is to prevent the immediate resubmission of declined proposals..." However, other NSF programs without deadlines simply prohibit resubmission of a proposal within a year of the original submission date (6,7), limit PIs to two proposals under consideration for funding at one time (8), state that PIs can submit an unlimited number of proposals given that "each proposal must be significantly different from the others" (9), or explicitly state that the number of proposals a PI may submit is unlimited (8,10). BIO appears to have created a new, more restrictive policy for submission rather than following precedent.

We are deeply concerned that limiting PIs to a single proposal per fiscal year damages biological research. Science is an increasingly collaborative endeavor; many important breakthroughs come from groups of researchers with complementary expertise. For decades, NSF has actively encouraged multi-PI collaboration, but researchers are now forced to limit the diversity of their research. Under the new guidelines, a scientist can serve as "senior personnel" on an unlimited number of proposals each year, but this status does not reflect the time and expertise that scientists bring to collaborations. Further, reviewers, employers, and the community may not see the contribution of senior personnel as on par with co-PIs nor recognize senior personnel as having made significant intellectual contributions to the work.

An additional serious concern is that early-career investigators, who need to demonstrate their scientific innovation and independence through grant funding, will be particularly disadvantaged. Given the small minority of proposals that are funded, this new limit – a single proposal per year to core programs – will exacerbate pressure on early-career colleagues because they cannot spread their risk of not being funded by submitting collaborative proposals. New researchers may turn to safe, fundable submissions rather than novel and transformative ideas.

We hope that the NSF will reconsider the restriction as a major impediment to an otherwise refreshing change to their current programs.

References

1. U.S. National Science Foundation, (NSF), "Division of Environmental Biology (core programs) (DEB) Program Solicitation" (Publication 18-587, NSF, 2018; www.nsf.gov/pubs/2018/nsf18587/nsf18587.htm).
2. NSF, "Division of Integrative Organismal Systems Core Programs Program Solicitation" (Publication 18-586, NSF, 2018; www.nsf.gov/pubs/2018/nsf18586/nsf18586.htm).

3. NSF, "Division of Molecular and Cellular Biosciences: Investigator-Initiated Research Projects (MCB) Program Solicitation" (Publication 18-585, NSF, 2018; www.nsf.gov/pubs/2018/nsf18585/nsf18585.htm).
4. NSF, "Dear Colleague Letter: Implementation of 'No-Deadline,' Full-proposal Submission Process for Most Programs in the Directorate for Biological Sciences" (Publication 18-011, NSF, 2017; www.nsf.gov/pubs/2018/nsf18011/nsf18011.jsp).
5. NSF, "Frequently Asked Questions (FAQs) for Directorate of Biological Sciences (BIO) Core Programs Solicitations" (Publication 18-106, NSF, 2018; www.nsf.gov/pubs/2018/nsf18106/nsf18106.jsp).
6. NSF, "Solar and Planetary Research Grants (SPG) Program Solicitation" (Publication 16-602, NSF, 2016; www.nsf.gov/pubs/2016/nsf16602/nsf16602.htm).
7. NSF, "Geomorphology and Land Use Dynamics Program Solicitation" (Publication 15-560, NSF, 2015; www.nsf.gov/pubs/2015/nsf15560/nsf15560.htm).
8. NSF, "Arctic Research Opportunities Arctic Natural Sciences; Arctic Social Sciences; Arctic System Science; Arctic Observing Network Program Solicitation" (Publication 16-595, NSF, 2016; www.nsf.gov/pubs/2016/nsf16595/nsf16595.htm).
9. NSF, "Frequently Asked Questions (FAQs) for Dear Colleague Letter (DCL) NSF 17-117: Removal of Deadlines for the Combustion and Fire Systems Program in ENG/CBET" (Publication 17-118, NSF, 2017; www.nsf.gov/pubs/2017/nsf17118/nsf17118.jsp).
10. NSF, "Frequently Asked Questions (FAQs) for NSF 17-086, Removal of Deadlines for the Marine Geology and Geophysics Program in the Division of Ocean Sciences in the Directorate for Geosciences" (Publication 17-087, NSF, 2017; www.nsf.gov/pubs/2017/nsf17087/nsf17087.jsp).

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