



NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
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NSF 20-033

Dear Colleague Letter: Developing and Supporting the National Ecological Observatory Network (NEON) User Community

December 26, 2019

Dear Colleagues:

The National Science Foundation's (NSF) Directorate for Biological Sciences (BIO) announces plans to foster the continued development of individuals and teams of investigators pursuing research using the National Ecological Observatory Network (NEON). This Dear Colleague Letter (DCL) is part of a larger BIO-wide effort to stimulate and enhance engagement and integration of biological and environmental science communities, and to grow convergent research across the foundation.

Solutions for the most persistent challenges facing the environmental sciences today are hindered by our limited understanding of the complex interactions between living and non-living systems operating over large spatial and temporal scales. Because many environmental controls, responses, and feedbacks operate over regional to continental scales, they cannot be investigated mechanistically by disconnected studies of individual ecosystems over short periods of observation. NEON is a major facility designed for studying the biosphere synoptically at regional to continental scales, with openly accessible methods and freely available, high precision data products.

Entering its first year of full operations, NEON is a continental-scale network of standardized field instruments, sensors, and manual biological sampling designed to enable reproducible, fundamental research on biological responses to shifting environmental conditions, land-use changes, and invasive species. NSF plans to ensure that the impacts of NEON data and assignable assets on environmental science are fully realized through a combined approach that includes user community support for the following activities:

- **Workshops or Conferences** for current and prospective users of NEON to explore: 1) major questions that can be addressed using NEON data; 2) the formation of user groups with shared needs and goals; and 3) designs for new approaches for integration and synthesis of NEON data. See Chapter II.E.7 of the [NSF Proposal & Award Policies](#)

& [Procedures Guide](#) for guidance on the preparation and submission of conference proposals.

- **NEON Research Coordination Networks (RCN) awards** to provide collaborative opportunities for NEON-enabled science networks to communicate their research and to synthesize investigations of problems, ideas, and practices that would benefit from the inclusion of regional- to continental-scale biological and environmental data. Specific guidelines for a NEON RCN are described in the Dear Colleague Letter [NSF 19-031](#). Note that NEON RCN proposals should be submitted to the [RCN solicitation](#) and that PIs may indicate any program in a relevant field of inquiry (deadlines may apply) for the review of the proposal, after consulting with cognizant NSF Program Directors.
- **The Macrosystems Biology and NEON-Enabled Science (MSB-NES) Program ([NSF 20-506](#))**, which supports research that develops new conceptual frameworks, empirical studies, syntheses, modeling approaches, and training programs that will enhance integrated research of the biosphere at regional to continental scales, develop predictions, and forecast ecological change. The MSB-NES program prioritizes projects that make use of NEON data and resources.
- **Proposals submitted through existing NSF program solicitations** to support research that uses NEON data and assignable assets. NSF Program Officers, including those listed below, can respond to inquiries or refer PIs to the program(s) most germane to their research topics. It is important to emphasize that PIs may propose research that uses NEON data and/or assignable assets to any of the programs in BIO or any other NSF directorate.

Looking to the future, BIO plans to provide support for other activities that enable NEON-based research through fostering team science, user group coordination, and new NEON-fueled scientific collaborations. [Biology Integration Institutes](#) provide one potential opportunity. Also planned are support for immersive training opportunities to facilitate acquisition of advanced data skills needed to maximize the scientific potential of NEON data. All these activities are anticipated to be highly complementary to, but distinct from the NEON facility, and are intended to help fully realize the open science mission of NEON.

For further information about this DCL, please contact one of the following BIO program officers on the NSF NEON Utilization Working Group:

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Sincerely,

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