



NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 21-031

Dear Colleague Letter: Interdisciplinary Frontiers of Understanding the Brain

December 14, 2020

Dear Colleague:

Exciting new opportunities at the interface of neuroscience and other science and engineering disciplines, catalyzed by transformative new discoveries and technologies, are poised to reshape brain research and its applications. Advances at these interdisciplinary frontiers depend on dialogue across many areas of scholarship, including behavioral, biological, cognitive, computing, educational, engineering, mathematical, and physical sciences research, as well as fields and subfields that have not traditionally been linked to neuroscience. The National Science Foundation seeks community input that illuminates these interdisciplinary opportunities, from theory to applications, and points to how they might best be realized.

This Request for Information (RFI) invites input to NSF on the specific questions described below. Responses to this RFI will inform future NSF investments that address the opportunities identified. Individual researchers, collaborating groups or networks, and organizations are all welcome to respond.

INSTRUCTIONS TO SUBMITTERS

NSF invites responses via an online submission form (link below). The submission form requests the following information:

- Author information:
 - Corresponding author's name and organizational affiliation (including departmental affiliation if applicable).
 - Valid contact email address.
 - Additional author name(s) and affiliation(s).

- Title and abstract:

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- Descriptive title capturing the nature of the interdisciplinary opportunity.
- Abstract (maximum 200 words) summarizing the response.
- Question 1 (maximum 1000 words):

Describe the interdisciplinary frontier to be explored. Explain how it builds on recent converging scientific or technical advances that have had high impact in more than one discipline, and outline new interdisciplinary avenues for understanding the brain that could be developed. Include discussion of specific critical open questions for the development of theory, experiments, applications, and/or new technologies.
- Question 2 (maximum 500 words):

Describe the perspectives and interactions needed to pursue opportunities at this frontier most effectively. Consider potential strategies needed to bring together diverse perspectives and community leadership, to facilitate sustained creative interactions and collaborations, and to develop interdisciplinary expertise.
- References

To respond to this RFI, please use the official submission form available at <https://www.surveymonkey.com/r/LQBPS6S>.

Contributions must be received by 11:59 PM Eastern time on **March 31, 2021**.

Please Note: *NSF anticipates making submitted titles, abstracts, and author names and affiliations publicly accessible on a website. Further, all information submitted in response to this RFI may be publicly disclosed; please do not include non-public or proprietary information in your response.* Submissions are expected to be professional in tone and address subject matter relevant to this RFI.

For further questions, please contact brain-frontiers@nsf.gov.

Sincerely,

Joanne Tornow
Assistant Director
Directorate for Biological Sciences

Margaret Martonosi
Assistant Director
Directorate for Computer and Information Science and Engineering

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