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SBE Postdoctoral Research Fellowships (SPRF)

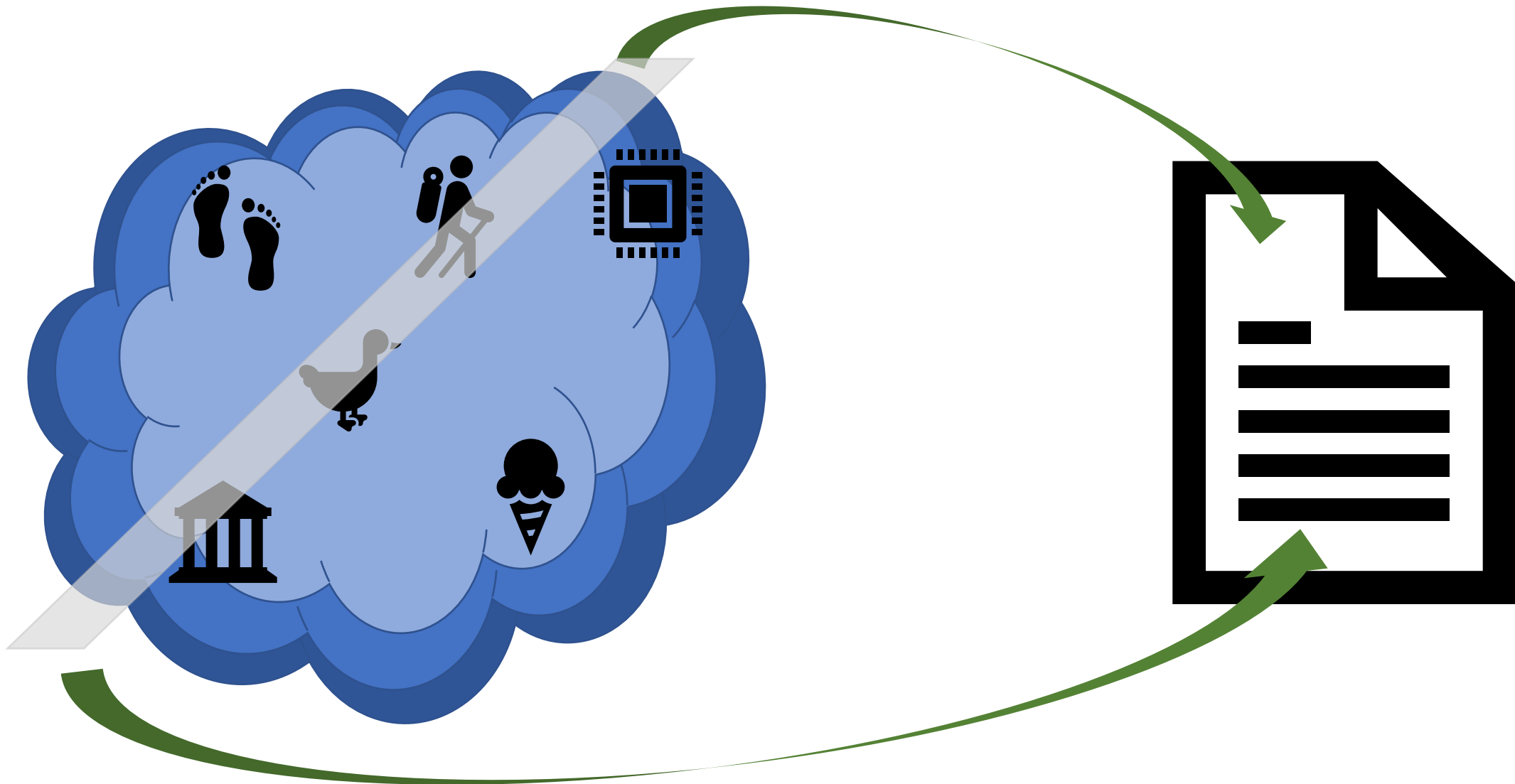
- The goals of the SBE Postdoctoral Research Fellowship (SPRF) are to:
 - Promote fundamental research in the SBE sciences
 - Enhance the participation of underrepresented groups
 - Provide an opportunity for independence and advanced training under the direction of a sponsoring scientist
- Two Tracks: 1) Fundamental Research
2) Broadening Participation
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 - 2) Fellowship candidates identify a sponsoring scientist and a host institution

Program Director: Josie Welkom (jwelkom@nsf.gov)

Which programs are 'right' for your ~~research~~?



Which programs are 'right' for your project?



PAPPG Intro

- NSF does not normally support technical assistance, pilot plant efforts, research requiring security classification, the development of products for commercial marketing, or market research for a particular project or invention. Research with disease-related goals, including work on the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals, is normally not supported. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support.

PAPPG Intro

- However, research in bioengineering or information technology, with diagnosis- or treatment-related goals, that applies engineering or computer science principles to problems in biology and medicine while advancing engineering or computer science knowledge is eligible for support. Bioengineering and assistive information technology research to aid persons with disabilities also is eligible.

Merit Review Principles

To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

Panel Process: PAPPG Criteria

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

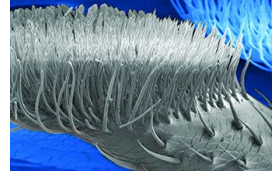
The following elements should be considered in the review for both criteria:

- 1. What is the potential for the proposed activity to:
 - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
- 2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
- 3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
- 4. How well qualified is the individual, team, or organization to conduct the proposed activities?
- 5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

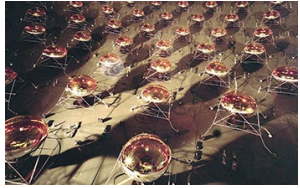


SBE

BIO



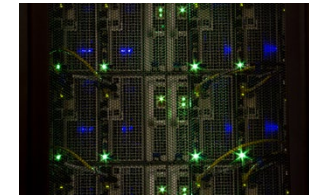
Programs: home organization + stable investigator-initiated opportunities



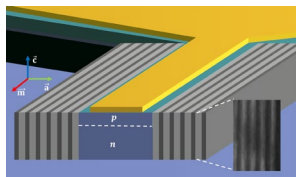
MPS



CISE

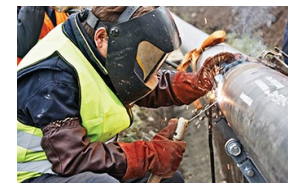


GEO

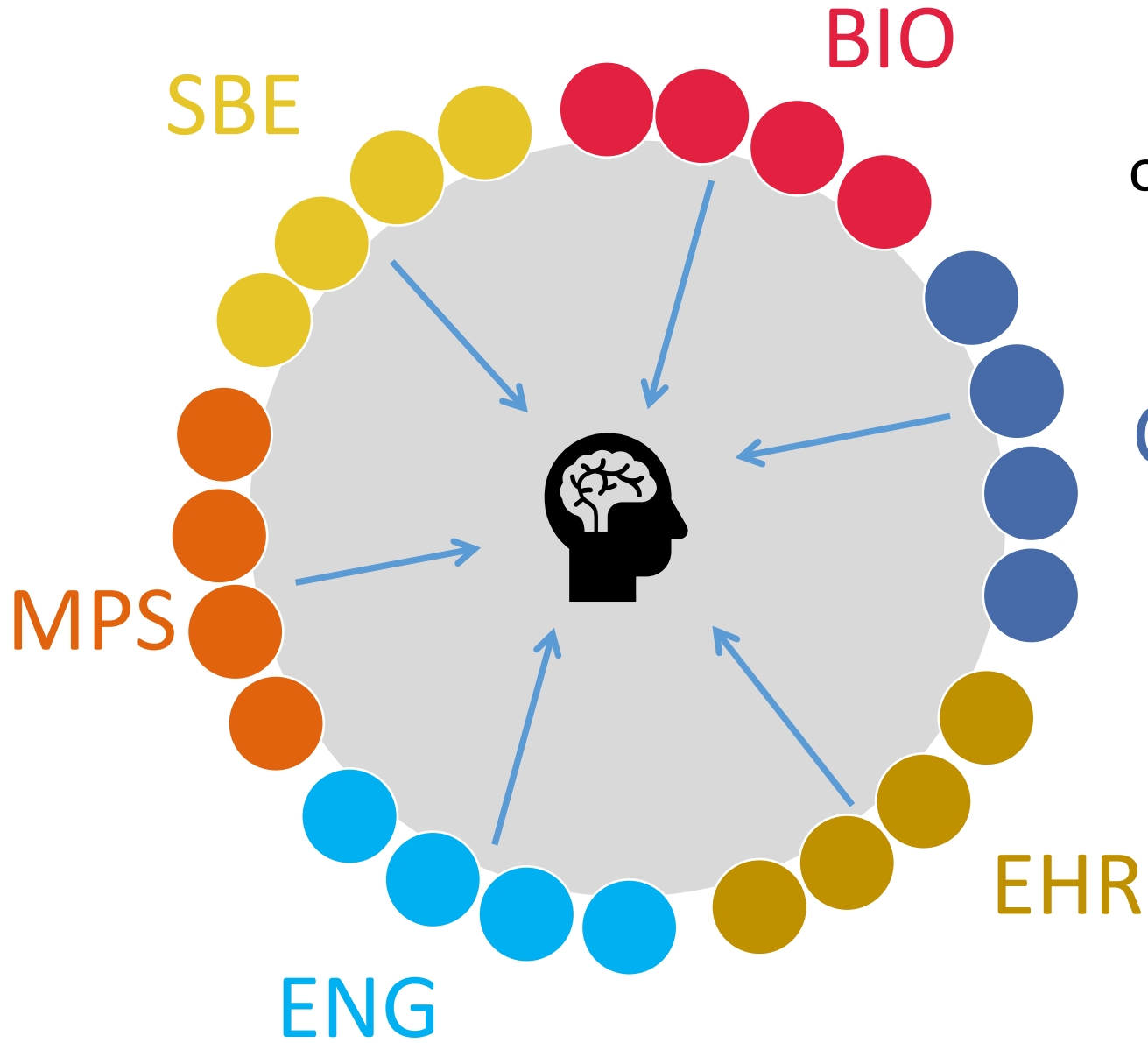


ENG

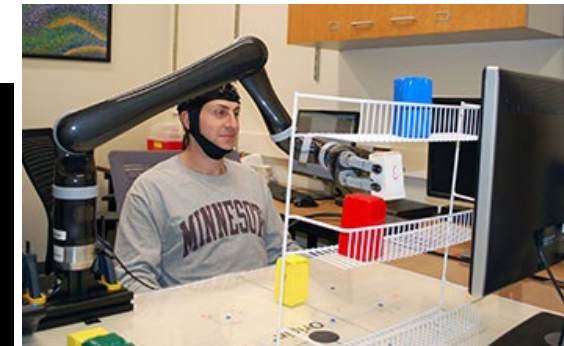
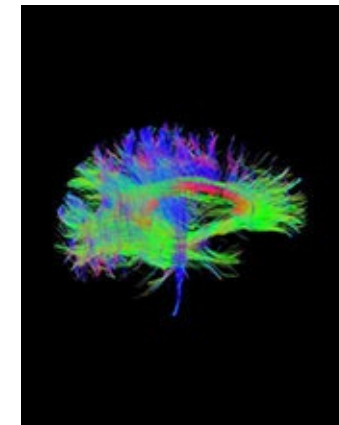
EHR



OISE



Home program support
of neuroscience research





Home programs increase understanding of ...

Cognitive Neuroscience: neural systems that mediate cognitive processes

Developmental Sciences: cognitive, behavioral, and biological processes of human development across the lifespan

Social Psychology: fundamental cognitive and social processes involved in human interaction

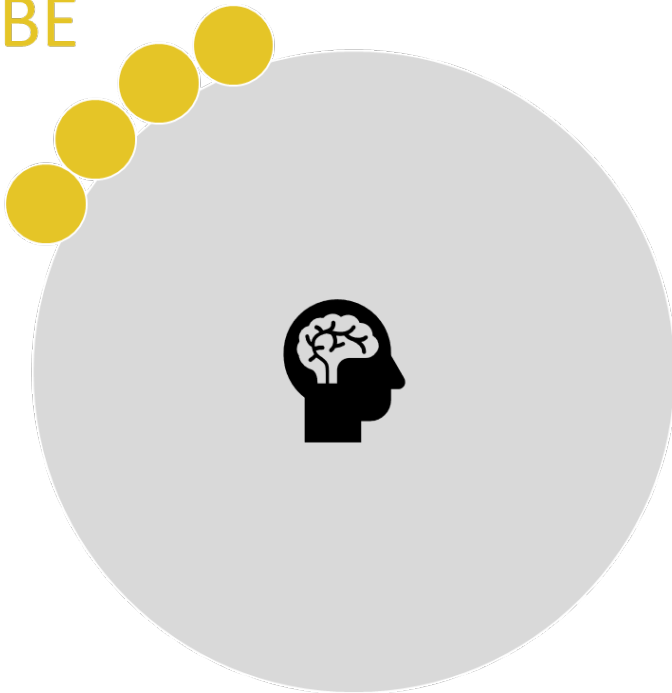
PAC: perceptual, motor, and cognitive processes and their interactions

Linguistics: basic science in the domain of human language

Science of Learning: learning principles, processes, and constraints

... & Social and Economic Sciences programs (e.g. MMS & DRMS)

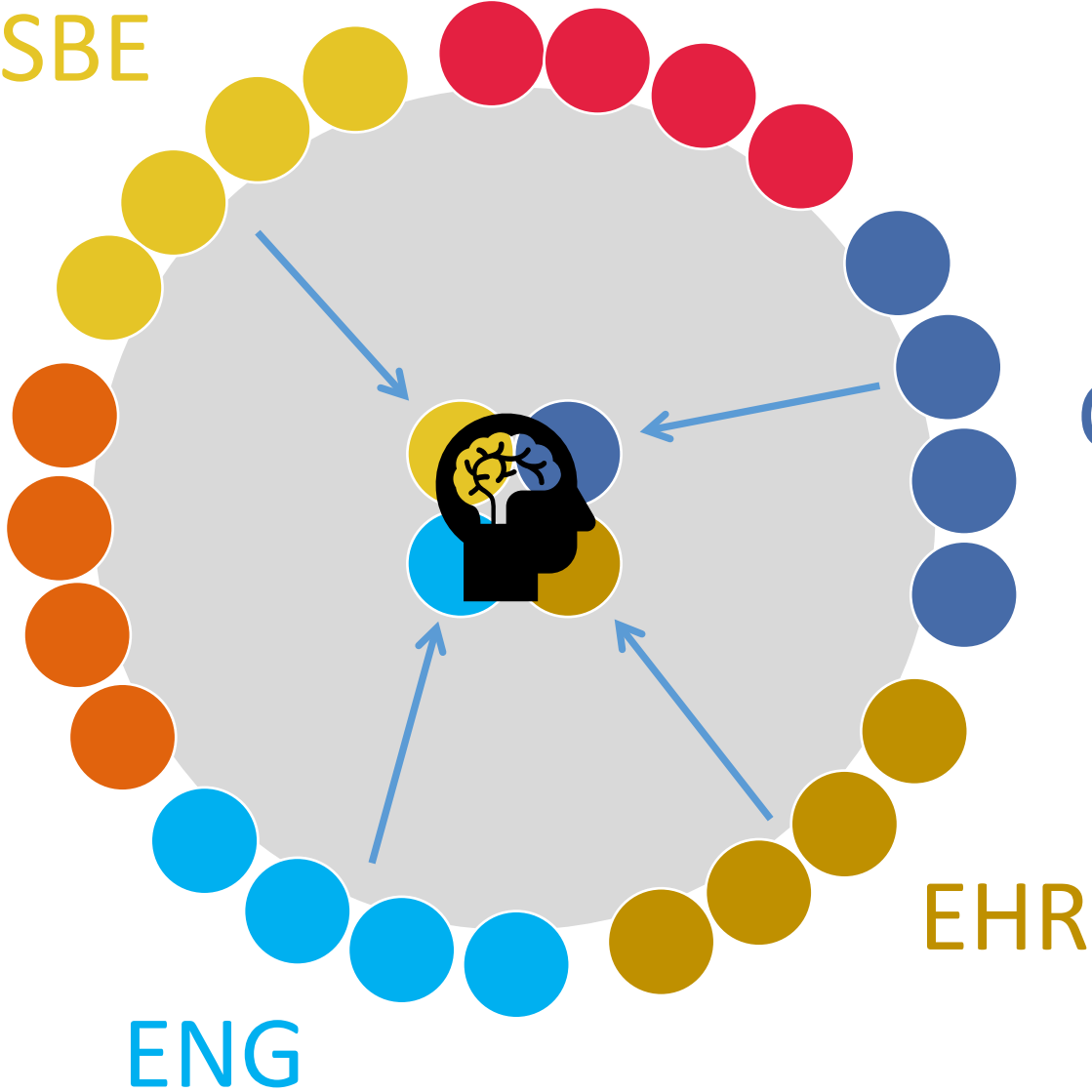
SBE



Cognitive Neuroscience Program

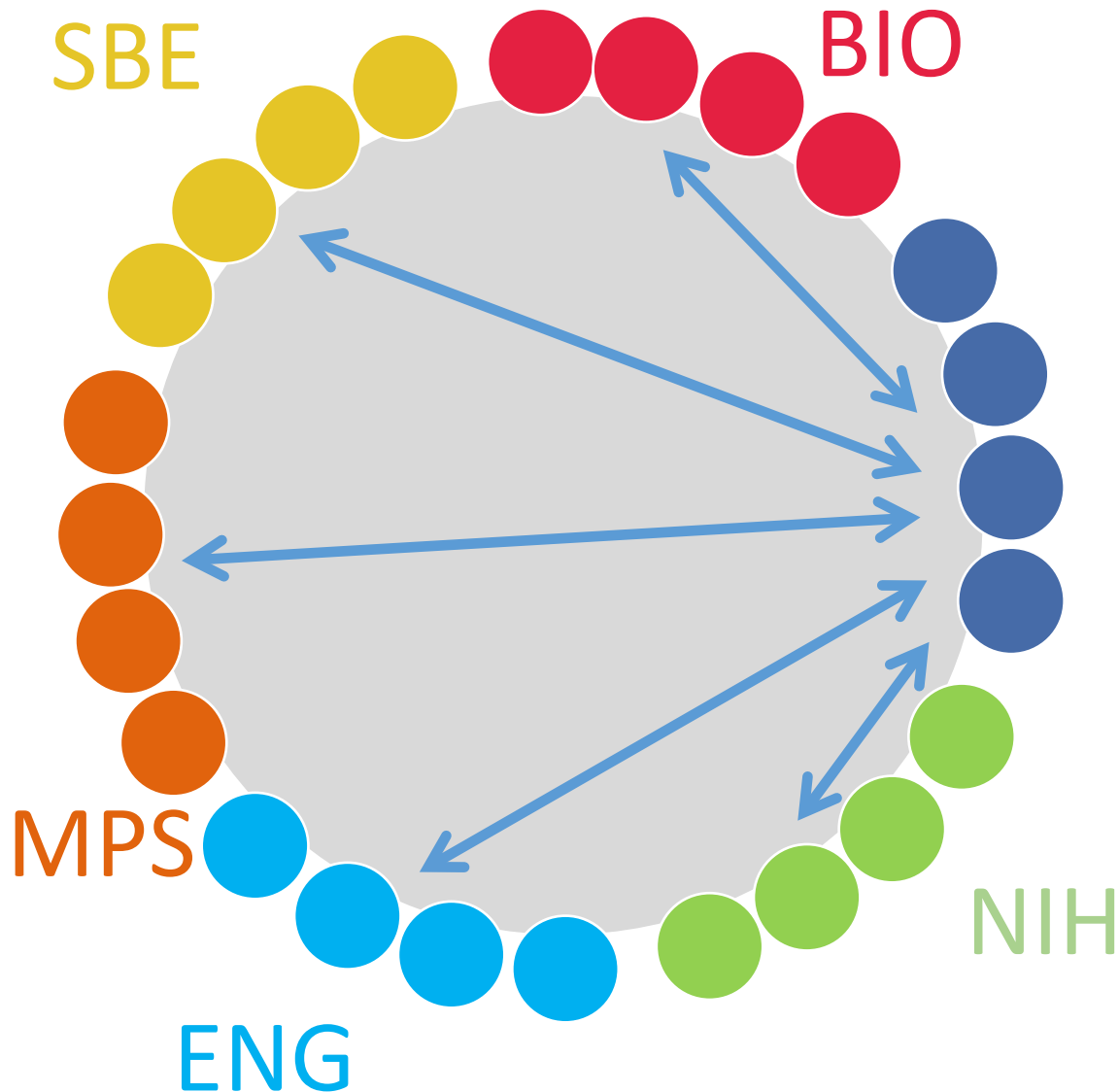
Cognitive neuroscience is an interdisciplinary field of research to understand the neural basis of human cognition. The cognitive neuroscience program therefore seeks to fund highly innovative proposals that employ brain-based measurements in order to advance our understanding of the neural systems that mediate cognitive processes. Human cognitive science encompasses a wide range of topics, including attention, learning, memory, decision-making, language, social cognition, and emotions. Proposals will be considered that investigate a particular cognitive process using human brain data.

Solicitations: usually larger duration, broader collaboration; tailored & limited opportunity



**Integrative
Strategies for
Understanding
Neural and
Cognitive
Systems**

Solicitations: usually larger duration, broader collaboration; tailored & limited opportunity



**Collaborative
Research in
Computational
Neuroscience**



NSF Cross-Cutting Solicitation: Integrative Strategies for Understanding Neural and Cognitive Systems (NCS) (supported by SBE, EHR, ENG, CISE)

The complexities of brain and behavior pose fundamental questions in many areas of science and engineering, drawing intense interest across a broad spectrum of disciplinary perspectives while eluding explanation by any one of them.

NCS calls for innovative, integrative, boundary-crossing proposals that can best address these questions and map out new research frontiers. NSF seeks proposals that are bold and risky, and transcend the perspectives and approaches typical of disciplinary research efforts.

NCS expects to provide new empirical insights, expand theoretical understanding, facilitate development of computational and bioengineered systems, promote new educational approaches, and generate new hypotheses that connect physical, biological, and cognitive mechanisms.

*** A Dear Colleague Letter (DCL) seeks to stimulate work in educational neuroscience in the NCS program, noting that advances in neural systems can have significant implications for research on education. ***

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*** and GRFP ***

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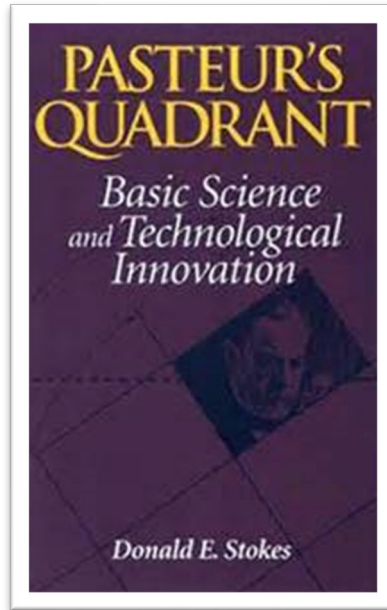
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- ❖ Always: ask your friendly neighborhood NSF program officer: what opportunities will be appropriate for my project, its intellectual merit, and its broader impact?
- ❖ Best new news: NSF Daily Digest
- ❖ Best NSF-wide wisdoms: [nsfgrantsconferences.com](https://www.nsfgrantsconferences.com)

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Philosophy of Science



Quest for
fundamental
understanding?

		Consideration of Use?	
		No	Yes
Quest for fundamental understanding?	No		Pure applied research (Edison)
	Yes	Pure basic research (Bohr)	Use-inspired basic research (Pasteur)