MindCORE Request for Research Initiative Proposals
Proposal Deadline: January 10, 2019

MindCORE is an interdisciplinary program focused on understanding the mind, drawing on tools from psychology, biology, neuroscience, and the humanities. The overarching goal of MindCORE is to support outreach, research and education related to the mind and brain. Topics relevant to MindCORE include, but are not limited, to perception, language use, memory, decision-making, social networks, and creativity.

Intent of RFP
MindCORE solicits proposals for the MindCORE Research Initiative Program. This program supports innovative interdisciplinary research in mind and brain within the University of Pennsylvania. Proposals are now being accepted for the 2019-2020 support cycle.

The purpose of the MindCORE Research Initiative Program is to foster research focused on exploring ideas of brain and mind. Proposals may seek to:
- Stimulate testing of hypotheses for which no standard funding stream is available.
- Jump-start interdisciplinary collaboration among researchers working on a common area or theme, i.e. forming new research partnerships and/or teams.
- Develop shared core facilities.
- Increase the competitiveness of Penn researchers and position awardees to compete for current and future funding opportunities outside of the University. An example is planning for and collecting novel preliminary data necessary to support extramural grant applications.

Preference will be given to proposals for projects that catalyze new collaborative research. Proposals to extend ongoing research programs that currently lack external funding will also be considered. The director of the proposed initiative must be a member of the SAS standing faculty, but the proposal may include collaborators from other schools.

Note that faculty interested in developing a research proposal may find it useful to apply for SAS Faculty Working Group funding (https://www.sas.upenn.edu/research/content/faculty-working-groups). This funding supports multidisciplinary working groups formed for the purpose of investigating important new areas of knowledge or new approaches to traditional disciplines. Such a working group could contribute to the the development of a MindCORE proposal.

Proposal Format
- 7 pages maximum (not including budget) that includes the following sections.
- Description of Research: This section should describe the proposed research and address its importance and/or novelty. In addition, the proposal should explain:
  - the ways in which the research aligns with the goals of MindCORE;
- how the research is interdisciplinary and how it will involve investigators from different laboratories and disciplines;
- how the research is innovative and what the long-term potential payoff is.

- **Year by Year Plan:** If the proposal requests funding for more than one year, the proposal should indicate what the plan and main goals are for each year of funding.

- **Description of links to MindCORE Goals:** Include a description of how the project would contribute to MindCORE outreach and/or education goals.

- **Measureable Outcome(s):** To assist in evaluating the impact of the proposed work, the proposal should describe what the proposers consider that success of the initiative would be, and how this could be evaluated.

- **Funding plan beyond MindCORE:** If the establishment of an ongoing research collaboration is proposed, the proposal should include an outline of possible follow-on funding opportunities, and explain how MindCORE funding would enable applications for these to be competitive.

- **Investigators:** Description of investigators and the contributions and responsibilities of each.

- **Budget:** A line item budget for each year of proposed funding should be included.

**Funding Amount and Deadlines**

Proposals for this initiative may be funded up to a maximum of $200,000 per year and can be requested for 1-3 years. MindCORE Research Fund recipients may request that unspent funds from any one year be carried-over the following year. Applications and review processes will be managed by MindCORE.

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**Proposal Ranking Criteria**

- **Alignment with MindCORE research mission,** with additional consideration as to whether proposals also further MindCORE outreach and education goals.

- **Interdisciplinarity.** A goal of MindCORE is to facilitate collaborations between groups and labs that might not otherwise work together, on the assumption that such collaborations are often key to making headway on challenging problems.

- **Novelty.** Proposals will ideally be based around novel ideas that are not currently being pursued, and for which MindCORE funding would be catalytic.

- **Relation to possible extramural funding.** Projects for which there exists current funding or a reasonable potential for funding via other mechanisms will be less favorably ranked than projects that are not yet ready for extramural support but that have the potential to enable future successful extramural grant applications.
Examples of Funded MindCORE Research Initiatives

**Computational Neuroscience**
As new technologies provide greater amounts of data about brain function, theoretical advances--a better understanding of what all these data mean--become even more critical. Computational neuroscience takes a systems-level approach that integrates theory and computation with experiment from multiple programs and departments including neuroscience, psychology, cognitive science, physics, mathematics, electrical engineering, and computer science. The theory seeks to understand the brain as an information-processing machine. Experiments provide quantitative methods to aid in the design, implementation, analysis, and interpretation of empirical studies that probe all levels of brain function, from molecules to behavior. Research in computational neuroscience provides a foundation upon which an understanding of more complex human intelligence and behavior can build. Applications include robotics, brain-machine interfaces, and new clinical tools.

**Social and Decision Sciences**
An understanding of the human mind, both its intelligent capacities and limitations or biases, is becoming increasingly important to explaining how human social, political and economic institutions work. Social and decision sciences use contemporary theories of behavioral decision-making, neuroeconomics, networks, and social evolution to understand how individuals and groups make decisions. It considers how to address a real-life problems in an array of fields, such as social and public policy, law, education, business, and medicine. Labs within this area will be co-located in Solomon Labs. Researchers will pay attention to populations who are not from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies which are populations that are oversampled in scientific studies and could potentially skew understanding of human behavior.

**Language Science**
Human capacity for complex language is unique within the animal kingdom, and psychologists have long appreciated how the languages we learn can shape our patterns of thought in subtle ways. Language science fosters collaboration between researchers in cognitive science, computer linguistics, psycholinguistics, and phonetics to drive research in language acquisition and use. This research aims to develop and improve language and speech technologies (e.g., automatic speech recognition, translation, and transcription). In addition, this research can develop computational tools to learn more about how the human brain works and how sciences understands social groups. An example of language science underway at Penn is work on building a model of the human mind using the recurrence of certain words and themes in massive data sets drawn from social media such as Wikipedia and Facebook.