NSF Opportunities in Computational Neuroscience and Related Areas

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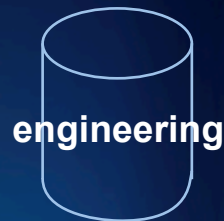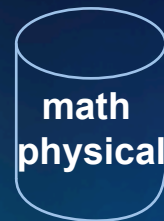Division of Information and Intelligent Systems
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NSF Opportunities in Computational Neuroscience and Related Areas

math physical | engineering | computing | biological | social behavioral | education

"core programs"
(and CAREER)

mathematical biology

statistics

engineering & biomedical systems

M3X: mind, machine, motor

robust intelligence

neural systems

cognitive neuroscience

science of learning
[Kurt, poster 3]

cross-directorate & other special opportunities

NSF-Simons MathBioSys centers

EFRI: soft robotics

CRCNS and BRAIN programs

big data

smart health

transdisciplinary principles of data science

and more...

What's new in CRCNS?

NSF-NIH-ANR-BMBF-BSF Joint Program
Collaborative Research in Computational Neuroscience
http://www.nsf.gov/crcns

- Computational neuroscience, inclusively defined
    encompassing many approaches and goals; related to biological processes; disease and normal function; theory, modeling, and analysis; implications for biological and engineered systems

- *Innovative, collaborative, and interdisciplinary*
    to make significant advances on important hard problems, and to develop new research capabilities

The program considers **Research Proposals** describing collaborative projects that bring together complementary expertise on interdisciplinary challenges; and **Data Sharing Proposals** to support preparation and deployment of data and other resources, in a manner that responds to the needs of a broad community.

Opportunities for *parallel international funding* (Germany, France, Israel, Japan, and multilateral).

Collaborative Research in Computational Neuroscience
Innovative Approaches to Science and Engineering Research on Brain Function

- Collaboration with Japan

- Report on data/ resource sharing under prior support

- Instructions, optional template

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Next Generation Networks for Neuroscience (NeuroNex)

Neurotechnology Hubs

- innovative research resources, instrumentation, and neurotechnologies
- immediate or near-term need
- demonstrate scalability to serve a substantial and expandable number of users
- technologies, instrumentation, tools

Theory Teams

- theoretical frameworks for understanding brain function across organizational levels, scales of analysis, and/or a wider range of species, including humans.
- advance theoretical (including evolutionary) frameworks in neuroscience
- enhance integration of analyzed data across temporal, spatial, and/or biological scales of analysis.

questions: Sri and Floh

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Integrative Strategies for Understanding Neural and Cognitive Systems (NCS)

http://nsf.gov/ncs/ (CISE, EHR, ENG, SBE)

Emphasis on *transformative, integrative approaches* to tackle previously intractable challenges. Must advance foundations of one or more of:

Neuroengineering and Brain-Inspired Concepts and Designs	**Individuality and Variation**
Data-Intensive Neuroscience and Cognitive Science	**Cognitive and Neural Processes in Realistic, Complex Environments**

INTEGRATIVE FOUNDATIONS (500K-1M, 2-4 yrs); **CORE+ SUPPLEMENTS** (CISE, EHR, ENG) to connect new or existing projects to neural and cognitive systems

questions: Ken and Kurt

Questions?

- Ask your program officer

- Consider being a "rotator"

- Subscribe to CRCNS-ANNOUNCE, CRCNS-EXTRA