



2018 Funding Opportunities

Integrative Strategies for Understanding Neural and Cognitive Systems (NSF 18-533)

Deadline: April 17, 2018

Budget: \$11 million to \$15 million (multiple awards)

Duration: Up to 3 years

The complexities of brain and behavior pose fundamental questions in science and engineering, drawing intense interest across a spectrum of disciplinary perspectives while eluding explanation by any one of them. Rapid advances within and across disciplines are leading to an increasingly interwoven fabric of theories, models, methods, findings and educational approaches – opening opportunities to understand complex aspects of neural and cognitive systems through integrative multidisciplinary approaches. This program calls for innovative, convergent, boundary-crossing proposals that can capture those opportunities and map out research frontiers. NSF seeks bold, risky proposals that transcend the perspectives and approaches typical of disciplinary research efforts. To read the solicitation, click [here](#).

Cyber-Physical Systems (NSF 18-5381)

Deadline: May 8, 2018

Budget: \$500,000 to \$7 million

Duration: 3-5 years

Cyber-Physical Systems (CPS) are engineered systems that are built from and depend on the seamless integration of computation and physical components. Advances in CPS will enable capability, adaptability, scalability, resiliency, safety, security and usability that will expand the horizons of these critical systems. CPS technologies are transforming the way people interact with engineered systems, just as the Internet has transformed the way people interact with information. The integration of artificial intelligence with CPS creates research opportunities with major societal implications.

While tremendous progress has been made in advancing CPS technologies, the demand for innovation across application domains is driving the need to accelerate fundamental research to keep pace. The CPS program seeks to open new vistas for the research community to think beyond the usual cyber-physical paradigms and structures and propose creative ideas to address the challenges of today's systems as well as those of the future. The CPS program aims to develop the core research needed to engineer these complex CPS, some of which may require dependable, high-confidence or provable behaviors. To read the solicitation, click [here](#).

Smart and Connected Health (NSF 18-541)

Deadline: May 22, 2018

Budget: \$300,000 per year

Duration: Up to 4 years

The goal of the interagency Smart and Connected Health (SCH): Connecting Data, People and Systems program is to accelerate the development and integration of innovative computer and information science and engineering approaches to support the transformation of health and medicine. Approaches that partner technology-based solutions with biomedical and bio behavioral research are supported by multiple agencies of the federal government, including the National Science Foundation (NSF) and the National Institutes of Health (NIH). The purpose of this program is to develop next-generation multidisciplinary science that encourages research communities to focus on breakthrough ideas in a variety of areas of value to health, such as networking, pervasive computing, advanced analytics, sensor integration, privacy and security,



modeling of socio-behavioral and cognitive processes and system and process modeling. Solutions must satisfy a multitude of constraints arising from clinical/medical needs, barriers to change, heterogeneity of data, semantic mismatch and limitations of current cyber physical systems and an aging population. To read the solicitation, click [here](#).

US-EU Internet Core & Edge Technologies (NSF 18-535)

Deadline: May 7, 2018

Budget: Up to \$300,000 per award

Duration: Up to 3 years

The Division of Computer and Network Systems (CNS) within the NSF's Directorate for Computer and Information Science and Engineering (CISE) supports research and education activities that seek to develop a better understanding of the fundamental properties of computer and network systems. The Networking Technology and Systems (NeTS) program in the CNS division supports transformative research on fundamental scientific and technological advances leading to the development of Next Generation Internet (NGI) and Advanced Wireless Networking (AWN) systems and technologies.

NSF/CISE and the European Commission (EC) Directorate General for Communication Networks, Content and Technology seek to enable US and European Union researchers to collaborate to address compelling research challenges in NGI and AWN. Topics of interest include software-defined infrastructures; network function virtualization; resource management in support of content delivery; open data architectures for shared, federated research infrastructures; advanced wireless technologies; and research software tools to support advanced wireless and smart city/community testbeds. To read the solicitation, click [here](#).

NSF/VMware Partnership on Edge Computing Data Infrastructure (NSF 18-540)

Deadline: May 22, 2018

Budget: Up to \$3 million per award

Duration: Over 3 years

The proliferation of mobile and Internet-of-Things (IoT) devices and their pervasiveness across nearly every sphere of our society continues to raise questions about the architectures that organize tomorrow's computer infrastructure. At the heart of this trend is the data that will be generated as devices and application services operate simultaneously to digitize a complex domain like a smart building or smart industrial facility. A key shift is from edge devices consuming data produced in the cloud to edge devices being a voluminous producer of data. This shift reopens a variety of system-level research questions about data placement, movement, processing and sharing. The shift also opens the door to compelling new applications with significant industrial and societal impact in domains such as healthcare, manufacturing, transportation, public safety, energy, buildings and telecommunications. To read the solicitation, click [here](#).



Critical Techniques, Technologies and Methodologies for Advancing Foundations and Applications of Big Data Sciences and Engineering (NSF 18-539)

Deadline: May 14, 2018

Budget: Up to \$500,000 annually

Duration: 3-5 years

The BIG DATA program seeks novel approaches in computer science, statistics, computational science and mathematics leading toward the development of the interdisciplinary field of data science. The program also seeks innovative applications in domain science, including social and behavioral sciences, education, physical sciences and engineering, where data science and the availability of big data are creating opportunities for research and insights not previously possible. The solicitation invites two categories of proposals: Foundations (BIGDATA: F): those developing or studying fundamental theories, techniques, methodologies and technologies of broad applicability to big data problems motivated by specific data challenges and requirements; and Innovative Applications (BIGDATA: IA): those engaged in translational activities that employ new big data techniques, methodologies and technologies to address and solve problems in specific application domains. To read the solicitation, click [here](#).

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