

Funding Opportunity: NSF Releases Solicitation for Transdisciplinary Research in Principles of Data Science (TRIPODS)

Lewis-Burke Associates LLC – October 6, 2016

On September 29, the National Science Foundation’s (NSF) Division of Computing and Communication Foundations (CCF) in the Directorate for Computer & Information Science & Engineering (CISE) and the Division of Mathematical Sciences (DMS) in the Directorate for Mathematical and Physical Sciences (MPS) jointly released a solicitation for a new program entitled *Transdisciplinary Research in Principles of Data Science (TRIPODS)*.

NSF states that this program “aims to bring together the statistics, mathematics, and theoretical computer science communities to develop the theoretical foundations of data science through integrated research and training activities.” NSF envisions that Phase I of the TRIPODS program will enable the development of small collaborative institutes that bridge these fields. Proposals must include substantial involvement of all three of the statistics, mathematics, and theoretical computer science communities and should “address fundamental research and training in the theoretical foundations of data science.” A Phase II proposal solicitation for larger institutes is expected approximately two years after Phase I grants are awarded. Funding from Phase I awards is meant to allow teams to build capacity and prepare to scale up activities for full institute operations in the future. NSF clarifies that though “novel approaches are encouraged, it is anticipated that traditional center-like activities will be common” in Phase I, such as integration of research and education, developing a common research agenda, and collaborative visits between scientists.

NSF urges “coordination, cooperation, and collaboration among the institutes” established in Phase I. Institutes are encouraged by NSF to “consider coalescing into larger teams for the anticipated Phase II competition, combining complementary strengths exhibited and developed in Phase I.” To be competitive, proposals for this solicitation must include teams with at least one Principle Investigator (PI) or co-PI from each specified discipline.

TRIPODS is a key component of NSF’s new *Harnessing Data for 21st Century Science and Engineering* initiative, one of 10 big ideas for future investment under development by NSF leadership. The initiative and TRIPODS specifically build off existing investments at NSF in big data, including the Big Data Regional Innovation Hubs and the Critical Techniques, Technologies and Methodologies for Advancing Foundations and Applications of Big Data Sciences and Engineering (BIGDATA) program, and other efforts. However, TRIPODS is unique in its focus on the theoretical foundations and principles of data science. This solicitation follows an April 2016 workshop sponsored by DMS and CCF entitled “Theoretical Foundations of Data Science (TFoDS): Algorithmic, Mathematical, and Statistical.”

Letters of Intent (required): Letters of Intent are due January 19, 2017.

Due Date: Full proposals are due March 15, 2017.

Eligibility: Universities and four-year accredited US colleges and universities are eligible to submit proposals, as are other nonprofits associated with educational or research activities. There are no limits on the number of proposals per organization. An individual may only be listed as PI or Co-PI on one proposal, but can be considered Senior Personnel on other proposals.

Total Funding and Award Size: A total of \$12 million is available to support eight to 10 awards, subject to availability of funding. Proposers may request up to \$500,000 per year for up to three years. Awards are expected to be between \$1.2 million and \$1.5 million total.

Sources and Additional Information:

- The program page is available at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505347&org=NSF&sel_org=NSF&from=fund.
- The full solicitation is available at <https://www.nsf.gov/pubs/2016/nsf16615/nsf16615.htm>.
- Information on the Theoretical Foundations of Data Science (TFoDS): Algorithmic, Mathematical, and Statistical workshop is available at <http://www.cs.rpi.edu/TFoDS/>.
- A draft report from the TFoDS workshop is available at http://www.cs.rpi.edu/TFoDS/TFoDS_v5.pdf.
- More information on the NSF big ideas for future investment can be found at https://www.nsf.gov/about/congress/reports/nsf_big_ideas.pdf and <http://www.sciencemag.org/news/2016/05/nsf-director-unveils-big-ideas-eye-next-president-and-congress>.