



**NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230**

NSF 17-055

Dear Colleague Letter: Public Participation in Engineering Research: Water Quality

February 13, 2017

Dear Colleagues:

Through this Dear Colleague Letter (DCL), the Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) within the National Science Foundation's Directorate for Engineering invites proposals in the area of Public Participation in Engineering Research, focusing on the use of citizen science and crowdsourcing, to enhance community engagement with water quality engineering research.

There is growing concern about the challenges to the Nation's drinking-water system and the safety of the water systems that supply it. Vast and connected systems monitor water quality at certain "critical control points" but the water supply can be threatened at a variety of other points along the way. This is particularly acute at the final critical control point, the consumer's tap. Furthermore, decreased water quality in areas with vulnerable populations, which include pregnant women, children, and the elderly, as well as populations with low socioeconomic status, can result in serious health risks.

In citizen science, members of the public voluntarily assist in the scientific process, engaging in activities that may include formulating research questions, conducting scientific experiments, collecting and analyzing data, interpreting results, making new discoveries, developing technologies and applications, and solving complex problems. In crowdsourcing, members of the public, whether at-large or within particular groups, are asked to assist with online, distributed data collection and/or problem solving. These approaches create opportunities for the public, and in the case of water quality, vulnerable populations, to engage in the processes of discovery that can address societal needs, particularly related to individual and community health.

As such, this DCL invites proposals that address a variety of water quality research topics including: inorganic, organic and microbial contaminants in ground water and surface water; upstream and downstream wastewater discharge; drinking water infrastructure and distribution systems, including private wells and taps; quality/quantity water relationships; and water used for other purposes like irrigation. To support the continued expansion of relevant research involving citizen science, crowdsourcing, and related forms of public participation proposals must explore new and improved methods and technologies for improved data collection and management, novel applications of

previously tested methods for purposes of data collection and analysis, and/ or research on underlying theory and methodologies that shape citizen science and crowdsourcing research in engineering. Community partnerships and the inclusion of social and behavioral science expertise are encouraged.

Proposals may be submitted either as requests for supplements to existing awards in CBET's Environmental Engineering (1440), Environmental Sustainability (7643), or Biological and Environmental Interactions of Nanoscale Materials (1179) Programs or as Early-concept Grants for Exploratory Research (EAGER) proposals in those same programs. See the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) ([NSF 17-1](#)) for guidance on preparing EAGER proposals and requests for supplemental funding.

- For EAGER proposals submitted in response to this DCL, the anticipated award size will be up to \$100,000, with an anticipated duration of one year, pending availability of funds. EAGER proposals must be labeled EAGER: PPER followed by the proposal title.
- For supplements to existing awards, the maximum award size will be limited to 20% of the original award or \$100,000, whichever is smaller, pending availability of funds

For questions, please contact CBET Program Officers, William Cooper (wcooper@nsf.gov), Bruce Hamilton (bhamilto@nsf.gov), or Nora Savage (nosavage@nsf.gov), not the signatory of this DCL for assistance. EAGER proposals and supplemental funding requests for fiscal year 2017 must be submitted by May 1, 2017.

Dr. Barry Johnson
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