



NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

NSF 16-114

Dear Colleague Letter: NSF Support for DARPA Spectrum Collaboration Challenge (SC2) Participants

July 21, 2016

Dear Colleague:

Wireless systems constitute a major source of productivity for nearly every sector of society and in turn drive the nation's overall economic competitiveness. Given the rapid proliferation of wireless networks and edge devices as well as the growth in wireless applications and services, precious spectrum resources are in ever-greater demand. Because wireless spectrum is finite, this demand cannot be met by simply allocating additional spectrum bands. Instead, spectrum sharing is seen as a viable option to meet the demand for scarce wireless spectrum by identifying unused frequency bands in the spatial and temporal domains. Consequently, over the last five years, the National Science Foundation (NSF), through its [Networking Technology and Systems \(NeTS\)](#) and [Enhancing Access to the Radio Spectrum \(EARS\)](#) programs, has invested extensively in spectrum sharing research.

In March 2016, in response to the challenge described above — the increasing demand for wireless spectrum — the [Defense Advanced Research Projects Agency \(DARPA\)](#) announced a [Spectrum Collaboration Challenge \(SC2\)](#) that aims to reward teams for developing smart systems that collaboratively, rather than competitively, adapt in real time to today's fast-changing, congested spectrum environment. In particular, SC2 aims to redefine the conventional spectrum management roles of humans and machines in order to maximize the flow of radio frequency (RF) signals. SC2 is structured in three yearlong phases, and is open to anyone. However, only a limited number of SC2 participants will receive support from DARPA for their challenge-related activities.

Through this Dear Colleague Letter (DCL), NSF's Directorate for Computer and Information Science and Engineering (CISE) encourages academic researchers to participate in SC2, and announces its intention to support those researchers to pursue novel strategies in spectrum collaboration as part of SC2. **NSF support is restricted to those researchers who are SC2 participants but are not being funded by DARPA for SC2 specifically.** SC2 participation requires time and effort to develop, validate, and test novel strategies for wireless spectrum collaboration.

NSF intends to accept proposals from academic researchers actively engaged in SC2 in one of two ways: (i) supplemental funding requests to existing NeTS/EARS awards on wireless spectrum research; or (ii) EARly-concept Grants for Exploratory Research (EAGER) (see NSF's [Grant Proposal Guide \(GPG\)](#), Chapter II.D.2, for proposal preparation instructions).

Prior to submitting a supplemental funding request or EAGER proposal, a one-page summary of the research to be proposed should be emailed to Thyaga Nandagopal (tnandago@nsf.gov). That summary should include a synopsis of the proposed approach, details of the team's composition, recent research results from the team in spectrum collaboration, and evidence of the team's participation in SC2 (e.g., the team's relative ranking in SC2).

For additional information, please contact Thyaga Nandagopal at tnandago@nsf.gov.

Sincerely,

Jim Kurose
Assistant Director, CISE