An innovative science, technology, engineering, mathematics and computing (STEM+C) workforce and well-educated citizenry are crucial to the Nation’s prosperity, security and competitiveness. Preparation for the future workforce must begin in the earliest grades from preK-12, where students need to learn not only the science and mathematics central to these areas, but also how computational thinking is integral to STEM disciplines. Because of the powerful innovation and application of computing in STEM disciplines there is an urgent need for real-world, interdisciplinary, and computational preparation of students from the early grades through high school (preK-12) that will provide a strong foundation for mid-level technical careers and for continuing education in higher education. This is particularly important in the key science areas described in the National Science Foundation’s Big Ideas for Future NSF Investment. The STEM+C program supports research and development proposals related to new approaches to pre-K-12 STEM teaching and learning related to Harnessing the Data Revolution, Convergence Research and the Future of Work at the Human-Technology Frontier.

The STEM+C Program focuses on research and development of interdisciplinary and transdisciplinary approaches to the integration of computing within STEM teaching and learning for preK-12 students in both formal and informal settings. The STEM+C program supports research on how students learn to think computationally to solve interdisciplinary problems in science and mathematics. The program supports research and development that builds on evidence-based teacher preparation or professional development activities that enable teachers to provide excellent instruction on the integration of computation and STEM disciplines. Proposals should describe projects that are grounded in prior evidence and theory, are innovative or potentially transformative, and that will generate and build knowledge about the integration of computing with one or more STEM disciplines at the preK-12 level.

**Sponsor**: National Science Foundation (NSF)
**Solicitation link**: [https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505006](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505006)
**Sponsor deadline**: Thursday, August 1, 2019

**Other information**:
A proposal submitted to this program description should describe the integration of computing with one or more STEM disciplines. A proposal may focus on studies on the effects of integrating computational thinking with STEM disciplines or the challenges of implementing these potentially disruptive educational interventions. Proposed projects may develop models, assessments, and technological tools to support teaching and learning in this area as well as conduct research on these models, assessments, and tools.

Outcomes of projects should enable the Nation to have a future workforce with knowledge of computational thinking integrated with STEM disciplines, and students prepared and interested in careers in the skilled technical work force or further education and science careers.

**RODA ID**: 553
**Last Updated**: Thursday, May 16, 2019