



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

NSF 17-147

Dear Colleague Letter: Announcing Creation of the Engineering for Civil Infrastructure (ECI) Program which is Replacing the Engineering for Natural Hazard (ENH), Geotechnical Engineering and Materials (GEM), and Structural and Architectural Engineering and Materials (SAEM) Programs

September 26, 2017

Dear Colleagues:

The Division of Civil, Mechanical and Manufacturing Innovation (CMMI) within the National Science Foundation's Directorate for Engineering, announces creation of the Engineering for Civil Infrastructure (ECI) program. The ECI program represents a new and integrated vision for fundamental research to underpin transformative innovations for the built environment that are resilient, economical, and adaptable to enhance national prosperity and societal benefits. In support of this vision, the ECI program replaces the Engineering for Natural Hazard (ENH), Geotechnical Engineering and Materials (GEM), and Structural and Architectural Engineering and Materials (SAEM) programs. ECI will also support research in construction engineering that is compatible with this vision.

The ENH and SAEM programs will no longer accept proposals. The GEM program will not accept proposals after 5:00 p.m. submitter's local time on December 29, 2017. Active awards in ENH, GEM and SAEM programs will be managed by the ECI Program Directors and will remain eligible for supplements and extensions.

NEW PROGRAM HIGHLIGHTS

The ECI program supports fundamental research that will shape the future of our nation's constructed civil infrastructure, subjected to and interacting with the natural environment and to meet the needs of humans. In this context, research driven by radical rethinking of traditional civil infrastructure in response to emerging technological innovations, changing population demographics, and evolving societal needs is encouraged.

The ECI program focuses on the physical infrastructure, such as the soil-foundation-structure-envelope-nonstructural building system; geostructures; and underground facilities. It seeks proposals that advance knowledge and methodologies within geotechnical, structural, architectural,

materials, coastal, and construction engineering, especially that include collaboration with researchers from other fields, including, for example, biomimetics, bioinspired design, advanced computation, data science, materials science, additive manufacturing, robotics, and control theory.

Research may explore holistic building systems that view construction, geotechnical, structural, and architectural design as an integrated system; adaptive building envelope systems; nonconventional building materials; breakthroughs in remediated geological materials; and transformational construction processes. Principal investigators are encouraged to consider civil infrastructure subjected to and interacting with the natural environment under "normal" operating conditions; intermediate stress conditions (such as deterioration, and severe locational and climate conditions); and extreme single or multi natural hazard events (including earthquakes, windstorms, tsunamis, storm surges, sinkholes, subsidence, and landslides). Principal investigators are expected to bear in mind broader impacts associated with, for example, economic, environmental, habitant comfort, and societal benefits, which may include implications for resource and energy efficiency, life cycle, adaptability and resilience, and reduced dependence on municipal services and utilities.

Full program details are available at: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505488.

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