National Science Foundation
WHERE DISCOVERIES BEGIN

NSF Scalable Nanomanufacturing (SNM)

The National Science Foundation (NSF) announces a fifth year of a program on collaborative research and education in the area of Scalable Nanomanufacturing. This program is in response to and is a component of the National Nanotechnology Initiative Signature Initiative: *Sustainable Nanomanufacturing - Creating the Industries of the Future* (http://www.nano.gov/node/611). Although many nanofabrication techniques have demonstrated the ability to fabricate small quantities of nanomaterials, nanostructures and nanodevices for characterization and evaluation purposes, the emphasis of the Scalable Nanomanufacturing program is on research to overcome the key scientific and technical barriers that prevent the production of useful nanomaterials, nanostructures, devices and systems at an industrially relevant scale, reliably, and at low cost and within environmental, health and safety guidelines. Competitive proposals will incorporate three elements in their research plans:

- A persuasive case that the nanomaterials, nanostructures, devices or systems to be produced have or are likely to have sufficient demand to justify eventual scale-up;
- A clearly identified set of research issues for science and engineering solutions that must be addressed to enable the production of high quality nano-enabled products at low cost; and
- A compelling research plan with clear objectives and approaches to overcome the identified research issues.
- The mode of support is Nanoscale Interdisciplinary Research Teams (NIRT).

Proposals submitted to this program should consider addressing aspects of the nanomanufacturing value chain:

- Novel scalable processes and techniques for large-area or continuous manufacturing of nano-scale materials and structures and their assembly and integration into higher order systems;
- Fundamental scientific research in well-defined technical areas that are compellingly justified as approaches to overcome critical barriers to scale-up and integration; and
- Design principles for production systems leading to nanomanufacturing platforms; identification of metrology, instrumentation, standards and control methodologies needed for process control and to assess quality and yield.

Competitive proposals are expected to address the training and education of students in nanomanufacturing. An inter-disciplinary approach is strongly encouraged. Disciplines could range from mathematics to the physical sciences to engineering. While not required, the involvement of an industrial or small business partner or partners is encouraged. These collaborations have the potential to significantly strengthen a proposal. Other research and education projects in nanoscale science and engineering will continue to be supported in the relevant programs and divisions.

THIS IS A LIMITED SUBMISSION GRANT OPPORTUNITY. An Institution may submit one proposal no more than one (1) proposal on which it is the lead organization in response to this solicitation.

If you are interested in applying, **please submit a one page Letter of Intent and the PI's abbreviated CV to rifs@wayne.edu by 5PM on Monday, December 8, 2014.** The full proposals are due to NSF by 5PM on January 20, 2015.