



NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

NSF 17-088

Dear Colleague Letter: Supporting Fundamental Research to Enable Innovation in Advanced Manufacturing at Manufacturing USA Institutes

May 25, 2017

The National Science Foundation (NSF) is interested in receiving research proposals addressing critical fundamental research needs in advanced manufacturing, and particularly in projects that may enable innovations in the technical focus areas of one or more of the Manufacturing USA Institutes. Such proposals should leverage the facilities, infrastructure, expertise and member companies of one or more Institutes.

Since 2001, close to five million manufacturing jobs have been lost in the United States, compelling the development of a robust innovation policy as outlined in *A National Strategic Plan for Advanced Manufacturing*.¹ One fundamental and far-reaching development is Manufacturing USA (formerly the National Network for Manufacturing Innovation), intended to secure the future of manufacturing in the U.S. A key component of Manufacturing USA is the creation of public-private partnerships to accelerate investment in and deployment of advanced manufacturing technologies. The Manufacturing USA Institutes have been established in topic areas that exemplify the challenging and high-tech world of advanced manufacturing, from the use of 3D printing to the production of flexible hybrid electronics. The National Science Foundation is part of the multi-agency team that has guided the formation of Manufacturing USA and continues its support through this Dear Colleague Letter (DCL).

Basic research in advanced manufacturing feeds the upstream pipeline of breakthrough technologies and innovations that the Institutes transform into scalable production processes and systems for use by industry. Research proposals that detail explicit collaborations with Institutes to facilitate this transition are particularly encouraged. A summary of the Institute focus areas can be found at <https://www.manufacturingusa.com/institutes>.

Submission Process

This is not a new program. Proposals should be submitted to established NSF programs and will be subject to the deadlines and review procedures of the program to which they are submitted. Proposals in response to this DCL must meet the requirements of the *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) and the review criteria of the program to which they are

submitted. Proposals in response to this DCL should have a title prefixed by “Manufacturing USA:”

Special Note: AIM Photonics has provided detailed procedures for collaboration, as specified in [NSF 17-073, Dear Colleague Letter: Research on Integrated Photonics Using AIM Photonics Capabilities](#). Proposals for collaboration with AIM Photonics must follow the procedures indicated in [NSF 17-073](#), and their titles must be prefixed by “PIC:” instead of “Manufacturing USA:”

Procedures for collaborating with Manufacturing USA Institutes in proposals to NSF’s Advanced Technological Education (ATE) Program are addressed in [NSF 16-007, Dear Colleague Letter: Advanced Technological Education \(ATE\) Program Support for Manufacturing Innovation Institutes \(MIIs\) and Investing in Manufacturing Communities Partnerships \(IMCPs\)](#).

The NSF’s points of contact for the Manufacturing USA Institutes are shown below. These contacts will assist in identifying the most appropriate NSF program for proposal submission; however, principal investigators are encouraged to think broadly about opportunities for proposal submission to NSF programs and solicitations, including cross-NSF solicitations, such as the National Robotics Initiative and the Cyber Physical Systems Program.

Institute	NSF Contacts
AFFOA (Advanced Functional Fabrics of America)	Mary Toney
AIM Photonics (Manufacturing Integrated Photonics)	Larry Goldberg, Dominique Dagenais
America Makes	Steve Schmid
ARM (Advanced Robotics Manufacturing)	Steve Schmid
ARMI (Advanced Regenerative Manufacturing)	Michele Grimm, Steve Schmid
CESMII (Clean Energy Smart Manufacturing)	Bruce Kramer
DMDII (Digital Manufacturing and Design)	Bruce Kramer
IACMI (Advanced Composites Manufacturing)	Bruce Kramer
LIFT (Lightweight Materials Manufacturing)	Alexis Lewis
NextFlex (Flexible Hybrid Electronics)	Usha Varshney, Khershed Cooper
NIIMBL (Biopharmaceutical Manufacturing)	Steve Peretti, Khershed Cooper
Power America (Wide Bandgap Semiconductors)	Bruce Kramer
RAPID (Process Intensification)	Lakis Mountziaris
REMADE (Sustainable Manufacturing and Recycling)	Khershed Cooper

Guidance in selecting the most appropriate program for submission can be sought from:

1. Khershed Cooper (khcooper@nsf.gov, 703-292-7017), Division of Civil, Mechanical and Manufacturing Innovation (CMMI);

2. Dominique Dagenais (ddagenai@nsf.gov, 703-292-2980), Division of Electrical, Communications & Cyber Systems (ECCS);
3. Michele Grimm, (mgrimm@nsf.gov, 703-292-4641), Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET);
4. Larry Goldberg (lgoldber@nsf.gov, 703-292-8339), Division of Electrical, Communications & Cyber Systems (ECCS);
5. Bruce Kramer (bkramer@nsf.gov, 703-292-5348), Division of Civil, Mechanical and Manufacturing Innovation (CMMI);
6. Alexis Lewis (alewis@nsf.gov, 703-292-2624), Division of Civil, Mechanical and Manufacturing Innovation (CMMI);
7. Lakis Mountziaris (tmountzi@nsf.gov, 703-292-8320), Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET);
8. Steve Peretti, (speretti@nsf.gov, 703-292-7029); Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET);
9. Steve Schmid (sschmid@nsf.gov, 703-292-8611), Division of Civil, Mechanical and Manufacturing Innovation (CMMI);
10. Mary Toney (mtoney@nsf.gov, 703-292-7008), Division of Civil, Mechanical and Manufacturing Innovation (CMMI); and
11. Usha Varshney (uvarshne@nsf.gov, 703-292-8339), Division of Electrical, Communications and Cyber Systems (ECCS).

Sincerely,

Barry Johnson
Acting Assistant Director for Engineering (ENG)
National Science Foundation

¹ Executive Office of the President, National Science and Technology Council, February 2012.