

SC EPSCoR/IDeA

2018 Scientific Advocate Network (SAN) Program Solicitation

SC EPSCoR/IDeA Solicitation Number 1-2018

Revised January 26, 2018

Scientific Advocate Network (SAN) Program Information

The Scientific Advocate Network (SAN) program aims to increase diversity in materials research and education with a goal of increasing diversity of the pipeline of Under Represented Minority (URM), women, and persons with disabilities pursuing and completing STEM degrees. The vision of the NSF EPSCoR Research Infrastructure Improvement grant titled, *Materials Assembly and Design Excellence in South Carolina (MADE in SC)* is to discover and establish new and sustainable approaches for the design and assembly of hierarchical materials at multiple relevant length scales that service South Carolina's STEM research, education, and workforce needs and invigorate economic development. The focus of this initiative is to discover and develop new intelligently designed optical and magnetic materials, stimuli-responsive polymeric materials, and interactive biomaterials.

MADE in SC Research Priorities

- **Modeling and Computation Core (MCC).** The goal of the MCC is to develop multiscale models and computational tools synthesizing theories, methods, and infrastructure to provide optimized solutions for the materials system. Supporting goals are the development of advanced multiscale theoretical foundations, fast algorithms for high throughput computations, high resolution/fidelity imaging and visualization, and big data analytics including uncertainty quantification.
- **Research Thrust 1 – Intelligently designed optical and magnetic materials.** The goal of Thrust 1 is to explore the inorganic crystal structure and mesoscale assembly of hybrid inorganic and organic materials to control and tailor their optical and magnetic properties. These designed materials and assemblies will exhibit multi-functional, correlated, collective properties leading to, e.g., materials for enhanced energy transfer for lasing and harvesting applications.
- **Research Thrust 2 – Stimuli Responsive Polymeric Materials.** The goal of Thrust 2 is design and develop synthesis strategies for polymers able to respond to external cues leading to, e.g., materials for efficient water treatment and self-repairing materials for harsh environments.
- **Research Thrust 3 – Interactive Biomaterials.** The goal of Thrust 3 is to develop fundamental understanding of the effect of physical and chemical signals on cellular behavior across a range of length scales, leading to the development of interactive biomaterials, e.g., for use in regenerative medicine.

SAN Program Awards

The SAN program provides two primary funding types:

- Support for underrepresented students in *MADE in SC* Research, including travel to meetings
- Support for increasing the recruitment of a diverse group of graduate students

TYPE I: Engaging Underrepresented Students in MADE in SC Research

MADE in SC aims to increase research participation by underrepresented students (including race/ethnicity and gender in appropriate fields, e.g., engineering, mathematics, etc.) during the academic year and/or the summer. Research experiences must be aligned with *MADE in SC* research priorities as listed in the previous section. Research experiences can take place either at the student's home institution or another institution in South Carolina. Student researchers are required to complete Responsible Conduct of Research (RCR) training, and appropriate documentation must be submitted to SC EPSCoR/IDeA Program State Office. Students receiving support will be considered *MADE in SC Research Fellows* and will be required to participate in the *MADE in SC Research Fellows* annual materials science symposium. The funding for this program supports stipends, travel (e.g., to research sites, conferences), and materials and supplies for research.

Proposals should include an implementation and management plan with action items that address the following:

- Description of the research project on which underrepresented student(s) will be working (e.g., significance of research, relationship to *MADE in SC* project goals, research framework)
- Start date and end date
- Research location
- Description of student recruitment and selection process
- Student responsibilities in the research project
- Identity/qualification of research mentor(s) including previous experience with underrepresented student research and mentoring.
- Student mentoring plan including assessment
- Opportunities for students to disseminate results (e.g., presentations, publications, senior thesis, etc.).

TYPE II: Recruiting a Diverse Group of Graduate Students

MADE in SC aims to increase the number of URM students pursuing graduate degrees in associated scientific fields in South Carolina. Graduate school program areas can include Mathematics, Polymer Science, Chemical Engineering, Materials Science and Engineering, Textile Engineering, Chemistry, Biomedical Engineering, Biology, Physics, Electrical Engineering, Computational Science, and Computational Modeling. The PI for this program type should have student recruitment responsibilities at his/her institution. The funding for this program type will go towards:

- Providing support for exhibit booths at conferences (e.g., NOBCChE, ABRCMS) for student recruitment to include exhibiting fees, advertising in the conference program/website, and travel.
- Student travel to conferences including ABRCMS, NOBCChE, etc. and national laboratories supportive of *MADE in SC* research priorities for professional development to strengthen candidacy for graduate school.
- Travel and honoraria for invited speakers experienced in recruitment, mentoring, and retention of historically underserved populations to share effective strategies to diversify the STEM workforce on SC campuses.
- Travel support for tenured faculty from SC institutions pursuing graduate student hires to provide lectures at SC HBCUs.

Proposals should include an implementation and management plan. Depending on the specifics of the proposal, relevant items from the following list must be addressed:

- Description of the graduate program(s) being proposed for URM student recruitment including baseline demographics of historical and current URM enrollment.
- Description of URM student recruitment and selection process.
- Alignment with the *MADE in SC* research priorities
- For conference exhibits, a description of the conference, projected number of attendees, and how it will potentially increase URM enrollment.
- If proposing opportunities for URM students to strengthen their candidacy for graduate school, a listing of professional development activities (e.g., attending and presenting at conferences, laboratories, other venues).
- If applicable, a description of proposed workshop/seminar focusing on recruitment, mentoring, and retention of URM students, and how it will broaden participation in Materials Science.
- If applicable, a description of proposed invited speaker(s) and credentials in recruitment, mentoring, and retention of URM populations.
- If applicable, a description of marketing plan to promote the workshop/seminar.

Award Information

Award Type: Grant

Maximum Funding Amount Per Project: \$10,000.00

Project Duration: 12 months

Estimate Number of Awards: Number of awards will be based on quality of proposals received and availability of funding.

Who May Apply

Proposals may be submitted by a single Principal Investigator from any South Carolina college or university.

Deadline

Full Proposal – Friday, February 9, 2018 – 5:00PM EST

Full Proposal Content

The sections below represent the body of the proposal. Failure to submit the required sections will result in the proposal not being accepted, or being returned without review. *Note: The number of pages for each section below (shown in parentheses) must not be exceeded.*

1. Cover Page (2 Pages)

Use the Cover Page form in Appendix A.

2. Project Description (5 Pages)

The Project Description should provide a clear statement of work to be undertaken and must address the objectives outlined for the proposed program outlined in the SAN Program Types above. A statement about the merit and the potential impact of the proposal should also be included in this section.

3. References Cited

Reference information is required. Each reference must include the name of all authors (in same sequence in which they appear in the publication), article title, journal title, book title, volume number, page numbers, and year of publication.

4. Biographical Sketches (2 Pages)

A biographical sketch is required for the PI in NSF format. For more information on NSF format, visit https://www.nsf.gov/pubs/policydocs/pappg17_1/pappg_2.jsp#IIC2f

5. Budget

Use the Budget form in Appendix B.

6. Budget Justification (2 Pages)

The budget justification must be composed of no more than two pages and must address every budget item requested.

Submission Instructions

Lead PIs should submit their proposals via the SC EPSCoR/IDeA Proposal Submission Portal at <http://scepscoridea.org/Solicitations/proposals/>. Follow the instruction to register for SAN then to upload proposal components.

Proposal Review Process

Proposals that meet the eligibility requirements and the guidelines of this solicitation will be evaluated by external reviewers based upon the extent to which they meet specific criteria including but not limited to:

- Significance, technical merit, and potential impact on the research community
- Potential for broader impacts and the increase of diversity
- How well the proposal addresses the specific requirements listed in the SAN Program Types section and its potential for success in achieving these requirements
- Reasonableness of budget request and justification

Award and Reporting Requirements

- Principal Investigators will receive notice of the SAN award/declination via email.
- Each award will be made to the Lead Principal Investigator's Institution.
- All publications (e.g., research publications, press releases, other publications or documents about the research funded by the SC EPSCoR/IDeA Program) and presentations resulting from the SAN must include an acknowledgement of SC EPSCoR/IDeA Program support and a disclaimer. *“Research reported in this [publication, press release, presentation] was supported in part by the NSF and SC EPSCoR/IDeA Program under award number (NSF Award # OIA-1655740 and specific SC EPSCoR/IDeA grant number). The views, perspective, and content do not necessarily represent the official views of the SC EPSCoR/IDeA Program nor those of the NSF.”*
- Student researchers will be required to present their research findings at the SC EPSCoR/IDeA State Conference therefore, travel expenses for the State Conference can be included in the budget.
- The SC EPSCoR/IDeA Program reserves the right to conduct site visits during the project period for evaluation and reporting purposes. Awardees are expected to provide required information and documentation to the SC EPSCoR/IDeA Program staff and External Evaluator as needed.
- Reassurance of Responsible Conduct of Research (e.g., CITI Certification) are required for faculty researchers and student researchers to be submitted to SC EPSCoR/IDeA Program State Office.
- Progress reports are due every six months after the start date of the award. A template will be provided to the PIs.
- A final report will be due 60 days after the end of the award.

Contact Information

General inquiries should be made to:

April Heyward, MRA
Program Manager, SC EPSCoR/IDeA Program
T: 803.733.9068
E: april.heyward@scra.org