

SC EPSCoR/IDeA

Phase-0 Program Solicitation

SC EPSCoR/IDeA Solicitation Number 2-2018

Phase-0 Program Objectives

The goal of the Phase-0 Program is to encourage and support South Carolina small businesses in their proposal development activities to compete effectively for SBIR/STTR Federal funding to support the “*Materials Assembly and Design Excellence in South Carolina*” (**MADE in SC**) initiative funded by the National Science Foundation EPSCoR Research Infrastructure Improvement Track-1 Program and/or the SC Science and Technology Plan.

The vision of *MADE in SC* initiative 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. As part of this program, the Phase-0 program will **support internships for SC undergraduate students for materials science projects only** in a functioning entrepreneurial environment to expose them to the world of entrepreneurship. Students must be enrolled in a four-year degree granting program in a SC college or university.

MADE in SC Priorities

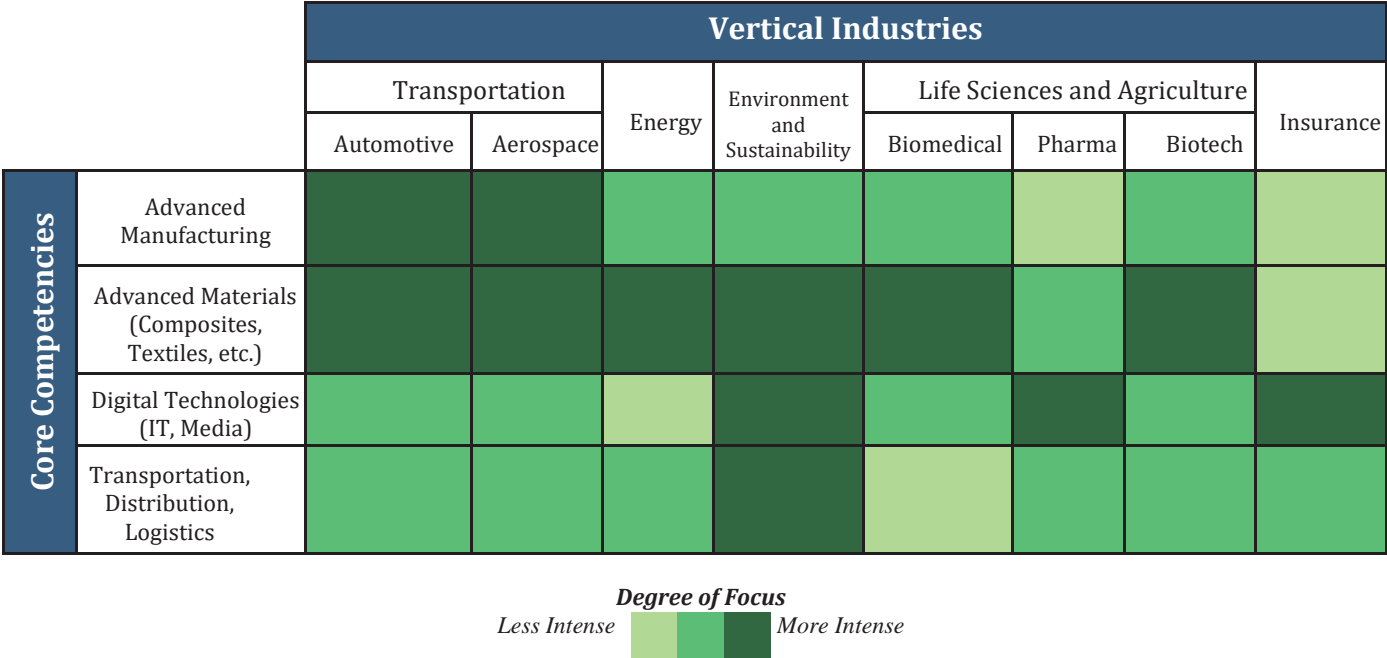
The following are the areas of the MADE in SC research, and proposals may address one or more of these topics:

- **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.
- **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.
- **Thrust 3 – Interactive Biomaterials.** The goal of Thrust 3 is to develop a 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.
- **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. This includes the development of advanced multiscale theoretical foundations, fast algorithms to handle high throughput computations, high resolution/fidelity imaging and visualization, and big data analytics including uncertainty quantification.

South Carolina Science and Technology Plan

Proposals may address one or more of the strategic areas identified in *Vision 2025 Advancing South Carolina’s Capacity and Expertise in Science and Technology*. In this document, the South Carolina Science and Technology Task Force cited four general areas for advancement of South Carolina’s economy into more

technology-driven areas: promotion of research and development, growth of the health, science and technology workforce, enhancement of education and outreach, and stimulation of economic development. South Carolina has excelled in the development of new products and processes to maintain and advance the state’s global competitiveness in Advanced Manufacturing; Advanced Materials; Digital Technologies; and Transportation, Distribution, and Logistics. By enhancing these core competencies, South Carolina can foster the growth of four vertical industries – Transportation; Energy; Life Sciences and Agriculture; and Environment and Sustainability. The Figure below shows the competencies and their relation to vertical industries (taken from Vision 2025).



Award Information

Award Type: Grant

Maximum Funding Amount Per Project: \$6,000.00

Maximum Funding Amount for Undergraduate Student Internships: \$3,000.00

Anticipated Start Date: Friday, June 1, 2018

Project Duration: 12 months

Estimated Number of Awards: up to 8 Awards

Limitations: Small Businesses are limited to submitting one proposal in response to this solicitation.

Eligibility

- Eligibility for Phase-0 funds is limited to South Carolina-based small businesses that are American-owned, for-profit, with fewer than 500 employees.

- If the proposing entity is more than 50% owned by another entity or entities, the majority owner(s) will be considered the proposing entity and is subject to the basic qualifications and consideration rules as outlined in the solicitation.

Deadline

Full Proposal – Tuesday, April 10, 2018 – 5:00 PM 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: Where indicated, the number of pages refers to the maximum number of pages allowed and must not be exceeded. Proposal Format: Use 1" inch margins, Times New Roman, and font size not smaller than 10 or larger 12.*

1. Cover Page (2 Pages)

Use the Cover Page form in Appendix A. *Note: Project Start Dates and/or SBIR/STTR Federal submissions dates cannot be on or before June 1, 2018.*

2. SBIR/STTR Federal Solicitation being Pursued

Proposals must contain *a complete PDF copy of each targeted SBIR/STTR Federal solicitation* identified in the proposal as the solicitation being pursued if a Phase-0 award is made. This must be downloaded from the federal agency website and then uploaded with the Phase-0 proposal.

3. Project Description (6 Pages)

The Project Description should clearly articulate its relation and applicability to one or more of the *MADE in SC* priorities and/or the SC Science and Technology Plan. The Project Description section should have the following sections:

a. Objectives of the Proposed Work and Relevance

State the objectives of the proposed work, its significance, and how it relates to the *MADE in SC* priorities and/or the SC Science and Technology Plan outlined in the Program Objectives section.

b. Prior Relevant Research

Describe previous research relevant to the proposed work. This should not be limited to the work done by the business or the investigators associated with the proposal.

c. Research and Development Plan

- Describe the business including R&D activities, current and previous commercial technologies, IP held by the business or its principal investigators, and the management structure. Also describe plans for administering the Phase-0 award.

- Describe the proposed research innovation and its applicability to the targeted SBIR/STTR solicitation(s). Include scientific explanation and how the proposed technology will satisfy the related requirements. If pursuing an SBIR/STTR Phase-1, provide description of the planned feasibility study to be undertaken during the Phase-1 award. Describe the technology's planned commercialization and possible economic development including generation of tax revenue and increased employment.

d. Undergraduate Student Internship – *Materials Science Projects Only* (Optional)

Proposals must address this section if requesting supplementary funding to support undergraduate student intern(s) in the proposed project. Provide a description of the location and environment of the proposed internship, student intern recruitment and selection process, start and end dates of the internship, student intern job duties and other engagement activities, and expected hours of work per week. Describe plan for student intern mentoring and plan to evaluate the success of the internship.

4. References Cited

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

5. Biographical Sketches

A biographical sketch is required for the Principal Investigator and other senior personnel. NSF format is required.

- **Professional Preparation** – undergraduate and graduate education and postdoctoral training (including location)
- **Appointments** – A list, in reverse chronological order, of all the individual's academic/professional appointments beginning with the current appointment.
- **Products** – A list of: (i) up to five products most closely related to the proposed project; and (ii) up to five other significant products, where or not related to the proposed project
- **Synergistic Activities** – A list of up to five examples that demonstrate the broader impact of the individual's professional and scholarly activities that focuses on the integration and transfer of knowledge as well as its creation.

For more information on NSF format, visit

https://www.nsf.gov/pubs/policydocs/pappg17_1/pappg_2.jsp#IIC2f

6. Budget

Use the Budget forms in Appendix B.

7. Budget Justification (2 Pages)

The budget justification must be composed of no more than two pages and must include the following sections:

- Senior Personnel

- Other Personnel
- Fringe Benefits
- Student Internship (Material Science Projects Only) (if requested)
- Materials and Supplies
- Equipment
- Domestic Travel Support
- Other Direct Costs

8. Current and Pending Support

The Principal Investigator must complete Current and Pending Support document in Appendix C.

Budget Information

Funding for the Phase-0 Program is intended to support proposal development activities and not intended to support small business infrastructure.

- The Phase-0 Program is a cost-reimbursement program and awardees will be reimbursed for *paid expenses NOT incurred expenses*. Small business infrastructure costs are not supported by this program. Therefore, the following costs are unallowable:
 - Computers, laptops, printers, software that is not project specific
 - Rent for office space, utilities, facility maintenance, membership fees, etc.
- The budget requested *may not exceed \$6,000.00 per proposal*.
- Total salaries, wages, and fringe benefits requested for all project personnel (Section A, B, and C on budget page) may not exceed \$1,200.00 of the total Phase-0 budget requested.
- Total salaries plus consultant fees may not exceed \$3,000.00 or 50% of the total budget requested.
- *Up to an additional \$3,000 can be requested for a student internship (Materials Science Projects only)*. The internship funds can only be used for the student internship and cannot be later re-budgeted into any other budget category. Support for an undergraduate student intern must be entered on the budget sheet in the column labeled student internship.
- Travel support is allowed only to SBIR/STTR Conferences and to meetings with Project Officers at Federal Agencies. Travel expenses may be claimed only for the PI and Senior Personnel listed in the proposal. Reimbursement for travel expenses including per diem, mileage, lodging, and transportation will be in accordance with SC EPSCoR/IDeA policy on domestic travel support posted on the SC EPSCoR/IDeA website at Travel Policy.
- Indirect costs are not allowed.
- Awardees must ensure that costs claimed under SC EPSCoR/IDeA Program grants are allowable, allocable, and reasonable.

Submission Instructions

Lead PIs should submit their proposals via the SC EPSCoR/IDeA Proposal Submission Portal at <http://scepacoridea.org/Solicitations/proposals/> as follows:

- PIs should complete registration in the Proposal Submission Portal.
- PIs will receive a temporary password and should immediately change this password.

- PIs should upload the 8 items listed in the Full Proposal Contents section into the Proposal Submission Portal.
- PIs will receive a confirmation email of proposal submission.

Proposal Review Process

Proposals will undergo two levels of review:

- a. Administrative Review. This review will determine which proposals will advance to the next level of review. This review is based on the whether the submitted material is complete and the current SC EPSCoR/IDeA forms are used. Proposals that do not pass the Administrative Review will be not be considered for funding.
- b. Proposal that successfully pass the Administrative Review will be sent to external evaluators for review based upon the following:
 - The proposal’s technical merit and its relevance to *MADE in SC* and/or SC Science and Technology Plan.
 - The extent to which the proposed activity suggests innovative and creative concepts.
 - How well conceived and planned is the proposed activity.
 - The potential of success in executing the proposed activities.
 - The potential that the project will lead to SBIR/STTR funding.

Award and Reporting Requirements

- Principal Investigators will receive notice of the Phase-0 award/declination via email.
- Each award will be made to the Lead Principal Investigator’s Organization.
- The SC EPSCoR/IDeA State Office 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 State Office staff and External Evaluator as needed.
- A progress report will be due no later than 60 days after the end of the award.
- Projects with student interns will be required to include student demographic information and 1-page PDF report from the student intern about their internship experience.
- Since this is a proposal development program, a copy of every SBIR/STTR Federal submission confirmation page identified in the proposal must be submitted to the SC EPSCoR/IDeA State Office. If the submission to the federal agency results in an SBIR/STTR award, a copy of the Notice of Award must be submitted to the SC EPSCoR/IDeA State Office.

Contact Information

General inquiries regarding this program should be made to:

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