



## **Request for Proposals** **SD EPSCoR Research Infrastructure Improvement Track-1 Award**

### **Summary of Program**

The SD EPSCoR Program invites proposals to identify the Research Infrastructure Improvement (RII) Track-1 science and engineering research focus area(s) that will be included in the state's NSF RII Track-1 proposal that will be submitted in the late summer or early fall of 2018. This request for proposals describes a two-phase submission process. The first phase requests a required Letter of Intent to submit an RII Track-1 proposal to the SD EPSCoR Program in an NSF-fundable area. In the second phase, full proposals submitted in response to this call will undergo peer-review process will select the STEM research focus area(s) that will form the basis of the next NSF RII Track-1 proposal.

### **Contacts:**

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### **Eligibility Information:**

Eligibility as a lead institution is limited to South Dakota Regental institutions that offer doctoral degrees in science and/or engineering.

Letters of Intent and proposals must represent a collaborative effort among 2 or more of the South Dakota Regental institutions that offer doctoral degrees in science and/or engineering. Collaborations involving the other public, tribal or private institutions in South Dakota are required. Collaborations involving the private sector, national laboratories or investigators from outside South Dakota are strongly encouraged. No funds may be requested for participants from outside South Dakota as a part of an RII proposal.

### **PI Eligibility Limit:**

An investigator may participate in only one proposal as a project director. An investigator may participate in more than one proposal as a senior investigator.

### **Award Information:**

- Anticipated Funding Amount: Each proposal may request up to \$10 million (NSF funding) and \$3.35 million (costshare) for a total of \$13.35 million over a five-year period.

- Continued funding in project years 2 through 5 will be based on an external assessment of the accomplishments achieved during the prior year.

## **Proposal Preparation and Submission Instructions:**

### A. Proposal Preparation Instructions

- Letter of Intent: Submission of a Letter of Intent (LOI) is required. Please see the full text of this solicitation for instructions on preparing the LOI. Once received, letters of intent will be posted on the SD EPSCoR website at <http://sdepscor.org/resources/rii-t1-proposal-preparation>.
- If there is sufficient interest based on the Letters of Intent submitted a statewide workshop or webinar will be held to provide an opportunity for projects to pursue potential collaborations.
- Projects submitting a Letter of Intent by the deadline noted below may submit a full proposal. No other proposals will be accepted. Please see the full text of this solicitation for instructions on preparing the full proposal.

### B. Budgetary Information

- Proposals may request up to \$13.35 million over a five-year project period. The remainder of the total RII Track-1 award (\$10 million) will be used to fund the required education, outreach and administrative components of the RII Track-1 project. The amount requested for the research plan in the final proposal submitted to NSF may be different from the amount requested by a proposal submitted in response to this solicitation.

### C. Due Dates

- Letter of Intent (required—due by 5 PM submitter’s local time):
  - o November 3, 2017
- Proposals (required--due by 5 PM submitter’s local time):
  - o January 19, 2018
- Panel Presentations and Review
  - o April 2018
- REACH Committee Approval
  - o June 2018
- NSF Full Proposal Submission Deadline
  - o August 2018

### D. Proposal Review Information

- Merit Review Criteria: Standard NSF criteria will apply. An external review of proposals will be conducted using *ad hoc* reviewers and a review panel review.
- Additional merit review considerations apply. Please see the full text of this request for further information.

## I. INTRODUCTION

South Dakota is nearing the end of a five-year National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR) Research Infrastructure Improvement (RII) Track-1 award and will be eligible to submit a new proposal to NSF in the next competition that will close in Fall 2018.

EPSCoR is based on the premise that universities and their faculty and students in science, technology, engineering and mathematics (STEM) fields are valuable resources that can have positive influence on a state's development in the twenty-first century in much the same way that agricultural, industrial and natural resources did during the twentieth century. EPSCoR's goal, therefore, is to identify, develop, and fully utilize a state's academic science and technology resources in a way that will support a more productive and fulfilling way of life for its citizens. To achieve this end, NSF cooperates with state leaders in government, higher education, and business to support productive long-term partnerships in support of common goals. These partnerships are designed to stimulate local action that will result in lasting improvements to the state's STEM research and educational infrastructure and increased national R&D competitiveness.

EPSCoR increases the R&D competitiveness of an eligible state through the development and use of STEM resources residing in its research, educational, and industrial institutions. While EPSCoR focuses primarily on those universities granting the state's Ph.D. degrees in STEM disciplines, effective partnerships between those universities and other institutions across the state are encouraged (e.g., predominantly undergraduate universities and colleges, community colleges, and local school districts). There is widespread agreement that our Nation's continued leadership in science, technology, engineering and mathematics (STEM) and the corresponding economic prosperity that it creates requires that all its educational and private sector resources be fully employed. Therefore, to ensure full participation of all our universities and colleges in our nation's economic and scientific future, opportunities for research experiences that prepare citizens for STEM careers is essential. This is especially true in institutions that have a special role in serving groups underrepresented in STEM careers (e.g., two-year colleges, large urban universities, and minority-serving institutions).

Through EPSCoR funding it is expected that sustainable STEM infrastructure improvements at the state and institutional levels will be achieved that can demonstrate a significant increase in EPSCoR participants to compete for mainstream of federal and private sector R&D support.

## II. PROGRAM DESCRIPTION

An NSF EPSCoR RII Track-1 award allows South Dakota to make strategic investments in building nationally competitive programs in specific areas of science and engineering that are consistent with state goals. Strategic investments generally take several forms including:

- start-up costs for hiring new faculty in targeted areas;
- equipping and staffing core research facilities;
- postdoctoral, graduate, and undergraduate research student support;
- creating new graduate programs and/or strengthening existing graduate programs;
- funds for developing technology-transfer capacity or university-industry partnerships such as entrepreneurship programs, internships or cooperative industry/university research infrastructure;
- increasing research access to state-of-the-art information technology;
- visiting-scientist programs;
- workshops and training courses;
- investments in mentoring programs for junior faculty;
- building a "bridge" to connect basic STEM research and education programs to the applied R&D and workforce development activities aligned with state science and technology plan;
- or any other strategy to enable South Dakota to dramatically increase its research competitiveness for nationally competitive research funding, particularly for NSF research funding, in a focused research area.

*A NSF EPSCoR RII Track-1 award does not provide research project support in the traditional sense.* The purpose of an EPSCoR RII grant is to provide support for lasting improvements in a state's academic research infrastructure that are consistent with the state's strategic STEM goals. EPSCoR support is intended to add specific value to the state's academic

infrastructure not generally available through other funding sources. A RII Project enables the development infrastructure needed to secure competitive research funding, it is not a research funding program.

An EPSCoR RII Track-1 proposal must describe the strategy and implementation mechanisms to develop and use the science and technology resources that currently comprise the state's research enterprise. In preparation for submitting a proposal, the EPSCoR governing committee within each state is expected to have undertaken a comprehensive analysis of the strengths, barriers, and opportunities for development of its institutions in support of overall state objectives. Successful infrastructure improvement plans are likely to be those that represent the opportunities for enhanced academic R&D competitiveness among a state's universities, including plans for generation of sustained non-EPSCoR support. Most importantly, the state's infrastructure improvement strategy must identify implementation mechanisms that have a high probability of realizing stated goals and objectives. In all instances, specification of performance milestones and a timetable for achieving such milestones is a requirement for EPSCoR support. With EPSCoR support, it is expected that the improvement strategies will enable targeted research areas to become nationally competitive and sustained by non-EPSCoR support after the award period.

A key premise behind the initiatives undertaken with an RII award is that the outcomes must result in progress that will be sustainable beyond the life of the award. A specific goal is to demonstrate that the state is more competitive for extramural research funding, especially NSF research funding, in the chosen area at the end of an award than it was at its beginning.

It is important to note that an RII award is **NOT** the appropriate mechanism to provide support for individual faculty research projects. Requests for support of such projects should be directed to NSF's regular research and educational grant programs and a proposal must demonstrate how it will achieve this goal. In addition, because EPSCoR investments are important to enhancing a state's competitiveness, it is expected that equipment purchased with EPSCoR funds will remain in the state and will not be transferred should an investigator transfer to another state. Some examples of activities that are considered appropriate for EPSCoR infrastructure development are given in the FY2016 NSF EPSCoR RII Track-1 program solicitation ([NSF 16-557](#)).

Although the current NSF EPSCoR RII Track-1 award does not end until July 31, 2019, South Dakota will need to submit a proposal sometime during the Fall of 2018 to have a new award in place at the completion of the current one. It is anticipated that a new RII Track-1 award will provide \$24M over a five-year period (\$20M NSF, \$4M required state cost-share). This amount will be used to fund the research infrastructure improvement components, and the education, outreach, human resource development and administrative components of the project. In the past, NSF has required a significant "jurisdictional and institutional commitment" in support of an RII proposal. While it is anticipated that this will continue, NSF's formal announcement of the FY19 RII competition in the spring of 2018 will have the final say on this issue.

### **III. ELIGIBILITY INFORMATION**

Eligibility as a lead institution is limited to South Dakota Regental institutions that offer doctoral degrees in one or more STEM disciplines.

Letters of Intent and proposals must represent a collaborative effort among 2 or more of the South Dakota Regental institutions that offer doctoral degrees in science and/or engineering. Collaborations involving the other public, tribal or private institutions in South Dakota are required. Collaborations involving the private sector, national laboratories or investigators from outside South Dakota are strongly encouraged. No funds may be requested for participants from outside South Dakota as a part of a NSF EPSCoR RII Track-1 proposal.

The research infrastructure development focus area must have national and statewide impact and be directly aligned with [South Dakota's State Science & Technology Plan](#).

A single investigator must be designated as the research project principal investigator and accept management responsibility for the research focus area. An investigator may participate in only one proposal in this role. An investigator may participate in more than one proposal as a senior investigator.

To be considered in this competition, a research infrastructure development focus area must be in an NSF-fundable area. Letters of Intent outside the areas typically funded by NSF are inappropriate and will be returned without consideration. A Letter of Intent is a required prerequisite to submitting a proposal.

## IV. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

### A. Proposal Preparation Instructions

Letter of Intent (required):

The Letter of Intent should be prepared as a single-spaced document with 1” margins using the Time New Roman 11 point font. It should contain the following information:

- A three-page description which includes the
  - o Project Title (cover page)
  - o Project Director’s name, contact information, and institutional affiliation (cover page)
  - o Project Summary (2 pages)
  - o The project summary should describe the research area that will be proposed with enough detail to allow proposal reviewers to be identified.
- A single table that is an alphabetically ordered list of all people in the academic or professional community who have collaborated with (within the last 48 months), or have been a Ph.D. advisee or advisor of, each of the project directors, principle investigators or senior investigators involved in the proposed project including all advisory boards (i.e. the conflicted individuals).

Please include next to the name of each conflicted individual, that individual's institution or company and the name of the project member with whom he or she has the conflict of interest. It is not necessary to list as collaborators personnel who are simply employees of an institution or company involved in the project. The list must be ordered alphabetically by the first column, i.e. the last names of the conflicted individuals. Note that past or present association with an individual as a thesis/dissertation advisor or thesis/dissertation student presents a lifelong conflict of interest with that individual. All thesis/dissertation advisees supervised must be listed in this table, not just those supervised within the last 48 months. This table has no page limits and is outside the three-page limit for the letter of intent.

Table Example: <http://bit.ly/2gIXe4O>

The Letters of Intent will be used to identify external reviewers and not as a basis for proposal selection.

**Proposal Preparation Instructions:** Proposals submitted in response to this request should be prepared in accordance with the general guidelines contained in the NSF Proposal & Award Policies & Procedures Guide (PAPPG). The complete text of the PAPPG is available electronically on the NSF Website at: [https://nsf.gov/pubs/policydocs/pappg17\\_1/index.jsp](https://nsf.gov/pubs/policydocs/pappg17_1/index.jsp).

The Project Description should clearly define the goals of the infrastructure development to be accomplished during the project, describe how the desired goals will be achieved and how the success of the activities will be evaluated. The project leadership should be provided by a small group of the senior investigators that includes the research focus area leader. This individual should be a senior faculty member with demonstrated organizational, managerial, and leadership ability who is willing and able to devote the considerable time needed to build and manage a substantial research organization (typically, a 50% time commitment is expected). The remainder of the leadership team should be drawn from the senior investigators at the project’s participating institutions and should provide guidance and oversight on the conduct of the STEM infrastructure development activities. Although a consortium of several organizations may be involved in development of the research infrastructure area, the project leader must accept overall responsibility for managing the technical, research aspects of the project and helping to coordinate the research component with the education/outreach, diversity and sustainability project components.

The NSF PAPPG describes the general format required for proposals. The following instructions deviate from the PAPPG.

**Project Description.** The Project Description in the full proposal should be prepared using the following page-limit guidelines for each section described below (28 pages total). Proposals should use the Times New Roman 11-point font and have 1-inch margins. Proposals not adhering to the 28 page limit will be returned without review.

1. **The current status of the jurisdiction's academic R&D enterprise relevant to the proposed project area must be described.** This description must include a comprehensive analysis of the strengths, barriers, and opportunities for development of its academic institutions in support of overall jurisdictional R&D objectives. The proposal narrative should provide convincing background and rationale for the project's scientific vision. It should show how the overall strategy and accompanying implementation mechanisms, if augmented with the requested infrastructure support, will improve the jurisdiction's competitiveness for federal, jurisdictional, and private sector R&D funding. This narrative must describe how the activities will add significantly and measurably to research capability in S&T areas of high institutional and jurisdictional priority (i.e., How are the proposed activities aligned with and support the SD State Science & Technology Plan?). It should describe how the activities are aligned with NSF's strategic research investment priorities (i.e., How are the proposed activities aligned with NSF's "[Big Ideas](#)"?). The narrative should demonstrate how the specific S&T infrastructure improvements and activities proposed will advance the jurisdiction's future research competitiveness and develop clearly focused research areas. (2 pages)

2. **Description of the research program and research infrastructure development activities.** The research program is the heart of a RII Track-1 proposal and all other project components are built around it and integrated with it. This section must demonstrate that the proposed research area will conduct nationally competitive research. Thus, a clearly articulated narrative is critical for a successful proposal.

For each area proposed, provide a concise description of the research and education goals and intellectual focus, and describe the planned activities in sufficient detail to enable their scientific merit and broader impacts to be assessed. Present proposed research in each focus area in the context of other efforts in the field (with appropriate references), state the major challenges, and comment on novelty and/or originality of the proposed approach. The Research and Education description must contain sufficient details regarding the scientific hypotheses, goals, and research and training methods (laboratory, field, theoretical, computational, or other) such that experts in the field of proposed research or closely related fields may accurately judge the intellectual merit and broader impacts of the proposed research. Any proposed activities to develop, improve, and deploy cyberinfrastructure must be integrated with and appropriate to the pursuit of the RII Track-1 project goals. Innovative use of cyberinfrastructure and technologies to broadly engage institutions, organizations, and sectors across the jurisdiction is encouraged.

In addition to providing clear and concise evidence for intellectual merit and broader impacts of the research and education activities, this section should:

- Identify the senior leadership and estimate the numbers of postdoctoral, graduate, and undergraduate research participants. Briefly outline the resources (available and planned) to accomplish the research goals.
  - Clearly establish the means of developing a coordinated, collaborative "team-science" approach involving multiple investigators and institutions. Describe interactions with other groups and organizations within the jurisdiction and at the national and international levels. The research and education program description must clearly demonstrate how each research focus area, theme, or component contributes to the jurisdiction's strategy for the advancement of future research, education, and innovation. The narrative should demonstrate how the activities are aligned with the jurisdiction's S&T Plan, and how they will advance the frontiers of knowledge and the jurisdiction's future competitiveness in the proposed research areas.
  - Briefly describe the mechanisms that will be employed to catalyze research in emerging areas including anticipated funding amounts and durations for seed projects. Seed funding through the RII Track-1 is not intended to provide a substitute for NSF individual investigator funding. The criteria and mechanisms for selecting and evaluating projects must be clearly described in terms of current needs and long-term sustainability.
  - Describe the roles of the participating institutions and the private sector partners in achieving the research and research infrastructure development goals.
  - Provide well-documented data and other evidence, including clear references and citations to data sources, to support claims throughout the Project Description. Research and Education, Workforce Development, and Diversity targets and goals should be substantiated by clear descriptions of the state of the art and current challenges in the research themes, educational arena, or academic environment, as appropriate. It is imperative that relevant baseline data be provided to support efforts to engage students, distinct groups, or populations, especially in the Workforce Development and Diversity Plans. (18 pages)
3. **Plans for workforce development, including involvement of undergraduate students, graduate students, postdoctoral associates, and new faculty hires.** The scope of RII Track-1 activities must include specific STEM workforce development activities that are integrated with the research and education program and contribute to the preparation of a new cadre of competitive researchers, innovators, and educators. The proposed program should present an implementation strategy with initial baseline assessment, clearly articulated goals, milestones, and timelines. Plans



should include opportunities for faculty (especially early career faculty) and training opportunities for students; the students may be at any level of the STEM education continuum. The proposal should describe mentoring and professional development of students, junior or postdoctoral researchers, and early career faculty. Efforts that focus on high school and undergraduate education must describe the basis for their inclusion and their relevance to the research and education program. The narrative should indicate synergies between proposed workforce development activities and other NSF investments in the jurisdiction that focus on strengthening STEM workforce development. The workforce development plan should include baseline data as appropriate. RII Track-1 projects are expected to support the hiring, retention, and mentoring of new faculty; in such cases the role(s) of such faculty in the research and education program must be clearly described. Awarded RII Track-1 projects are expected to follow through on all proposed new faculty hires as described in the proposal. Plans to attract and effectively involve individuals from under-represented groups should be described. (2 pages)

4. **Description of a clearly articulated cyberinfrastructure plan for the utilization, development, improvement, and deployment of cyberinfrastructure appropriate to pursuit of the research goals of the proposed research program and related activities is required.** Cyberinfrastructure can provide opportunities to leapfrog impediments posed by limited physical infrastructure and can enable broad educational engagement at the frontiers of discovery and innovation in science and engineering. Well-articulated plans for the development, improvement, and deployment of cyberinfrastructure appropriate to pursuit of the goals of both the RII Track-1 project and the jurisdiction's S&T Plan are required. (1 page)
5. **Description of a plan for long-term sustainability of the proposed research program that clearly presents the strategy and implementation plan (with milestones) for sustaining the impacts and achievements in the science and technology enterprise after the period of proposed NSF EPSCoR support.** The RII Track-1 is not intended to provide a substitute for NSF individual investigator funding and it is expected that participants will be actively seeking and receiving NSF investigator research grants (and other agency funding as appropriate). This section should describe the vision and specific plans for supporting and continuing to grow the research activities beyond the duration of a RII Track-1 award. Present a detailed strategy to build ongoing research relationships and generate subsequent, sustained non-EPSCoR funding from federal, jurisdictional, and private sector sources. (2 pages)
6. **Description of a plan for external engagement activities that will expand institutional participation, student career options, and facilitate the entry of women and members of underrepresented groups into STEM fields.** Potential external engagement activities including outreach, communication, and dissemination are essential elements of successful strategies for the development of a diverse, well-prepared, internationally competent, and globally engaged STEM workforce and for a more scientifically literate public. This plan may include engagement of the private sector to develop partnerships that promote STEM pipeline development and research infrastructure development activities. This plan may also include other collaborations with intra-jurisdictional, inter-jurisdictional, and regional partners as appropriate. Activities in informal science education should be presented with a research-based justification for their choice.

Communicating the results, benefits, and processes of science to citizens at all educational levels builds scientific literacy and strengthens educational and research capacity throughout jurisdictions. The SD EPSCoR Program has developed programs and partnerships for meeting this infrastructure program requirement: [Dakota Seeds](#) internships, its [Education Portal](#) for outreach to K12 education, the development of infrastructure support networks for the state's [regional Science Fairs](#), AISES chapters, and Women in STEM programs, and partnerships with university research parks and STEM industry associations (e.g., [SD BIO](#)). Proposals are strongly encouraged to build upon these activities or other existing activities as means of achieving the scale needed to have an impact within the 5-year time frame imposed by the RII Track-1 project. for Engagement by NSF staff in disciplinary areas of importance to the jurisdiction's science and technology strategic plan is appropriate. Plans for the use of technology that enables and facilitates communication within and among the partnering institutions and other EPSCoR jurisdictions must be described. (2 pages)

7. **Description of the organizational structure** for the project that clearly outlines the proposed management structure, mechanisms for focusing and maintaining development activities, criteria for selection of participants, and procedures for allocation of funds and equipment. A single investigator must be designated as the research focus area leader and accept management and implementation responsibility for the research focus area. It is expected that time will be budgeted for the research focus area project director to reflect the time commitment involved (typically a 50% time commitment). Limited summer support as a part of a start-up package for new faculty hire is appropriate, summer support for project faculty participants currently on staff is generally not viewed favorably. (1 page)

**Results from Prior EPSCoR RII Track-1 Support.** Inclusion of this section is required only by those proposals whose research topics have been, or currently are, a research focus of a funded NSF EPSCoR RII Track-1 project. This section must document the competitive status of the proposed research area as a result of prior/current RII Track-1 funding. This may be documented through a list of publications (complete citations) acknowledging the support of that award, a list of the individual or group NSF research (not instrumentation or similar) grants (project title, PI/CoPIs, title agency, amount awarded, start date and duration) and any other similar metrics that the proposers wish to provide to demonstrate their progress towards competitive status. How additional NSF EPSCoR RII Track-1 funding will enhance its competitive status. The proposal must demonstrate the impact that additional funding would have on the state's research competitiveness in this research. This section is limited to 5 pages of narrative plus any additional lists of metrics provided to support. This section is outside the 28 page limit.

**References Cited.** Reference information is required. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Proposers must be especially careful to follow accepted scholarly practices in providing citations for source materials relied upon when preparing any section of the proposal. This section must include bibliographic citations only and must not be used to provide parenthetical information to circumvent the Project Description's page limit. This section is outside the 28 page limit.

**Budget and Budget Justification.** Proposals may request up to \$10 million total in NSF funds over the five years of an award. The amount of NSF funding requested in each project year may vary but the 5-year total may not exceed \$10 million. The remaining \$10 million in funding that a NSF EPSCoR RII Track-1 can request will be used to fund the education, outreach, human resource development, evaluation and administrative components of the project that will be developed after the research theme sought via this solicitation is chosen.

Cost sharing is currently required for proposals submitted in response to this request. The required "jurisdictional and institutional commitment" of 20% of the NSF-funds requested for the state submission in any project year. For the final \$20 million proposal submitted by the state, this commitment will need to average \$800,000/year. The Governor's Office of Economic Development (GOED) has committed to providing \$600,000/year in cost-share pending annual legislative appropriation of the necessary funds. The remaining \$200,000/year must be identified by the participating institutions as in-kind cost-share that supports the proposed research and education focus area and the activities that will be used to develop it (e.g., salary and start-up funding for new tenure-track hires, renovation costs for space to house equipment, clerical support staff, etc.). Because there may be institutions who may join the effort to meet the requirement of the other state submission project components, and there are activities that must be paid for with nonfederal funds, a portion of the cost-share is being set aside to accommodate their participation. For the purposes of this proposal, budgets should request a maximum of \$500,000/year in GOED cost-share funding and identify \$170,000/year in institutional cost-share. It is up to the proposers to determine how to allocate both sources of cost-share funding, but in the past, it has been well-received when a campus' portion of the institutional cost-share reflects the same percentage of its portion of the NSF funds requested (e.g., a campus receiving 10% of the total NSF funds requested in a project year would be responsible for identifying 10% of the \$170,000 total institutional cost-share required during that time).

The total and/or annual amount funded for the research plan in the final proposal submitted to NSF, and/or the assignment of project costs to NSF funding or state funding, may change during the preparation of overall state proposal as the other state-wide submission proposal components referenced earlier are integrated into the final proposal and thus be different from the amount requested by a proposal submitted in response to this solicitation.

Institutions may charge their approved F&A rate to the NSF budget request. Because GOED does not allow F&A to be charged on its funding no F&A may be charged on the cost-share.

The proposal budget and budget justification should be prepared using standard NSF budget forms following the [PAPPG's budget and budget justification preparation guidelines](#). All instrumentation/equipment requests should be carefully justified in the proposal and listed on line D of a year's proposed budget. While funding cannot be provided to collaborators outside South Dakota, it is appropriate to request NSF funds to support researchers' (undergraduate and graduate students, postdoctoral associates, senior personnel) travel to partner sites (international, industrial, or national laboratory) to conduct experiments, develop collaborations, etc.



This section is outside the 28 page limit.

**Biographical Sketches.** A biographical sketch, limited to two pages and presented in [NSF format](#), is required and should be included for each senior investigator. This section is outside the 28 page limit.

**Current and Pending Research Support.** A list of current and pending research support presented in [NSF format](#) is required for each person who provides a biographical sketch. This section is outside the 28 page limit.

**Facilities, Equipment and Other Resources.** A description of existing Facilities, Equipment and Other Resources to support the proposed research theme. This section of the proposal is used to assess the adequacy of the resources available to perform the effort proposed to satisfy both the Intellectual Merit and Broader Impacts review criteria. Proposers should describe only those resources that are directly applicable. Proposers should include an aggregated description of the internal and external resources (both physical and personnel) that the organization and its collaborators will provide to the project, should it be funded. Such information must be provided in this section, in lieu of other parts of the proposal (e.g., Budget Justification, Project Description). The description should be narrative in nature and must not include any quantifiable financial information. This description is outside the 28 page limit.

**Postdoctoral Mentoring Plan.** A proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. See [Chapter II.C.2.j](#) of the PAPPG for further information about the implementation of this requirement. This section is outside the 28 page limit.

**Data Management Plan.** All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. The Data Management Plan will be reviewed as part of the Intellectual Merit or Broader Impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>. See [Chapter II.C.2.j](#) of the PAPPG for further information about this requirement. This section is outside the 28 page limit.

**Letters of Commitment.** Letters of commitment should be included as an appendix. These are not letters of support for the project but letters that commit resources to its implementation, for example new tenure-track lines, the required cost-share, etc. Each participating institution should provide a separate letter on institutional letterhead and signed by an individual with the authority to make the commitment described. This section is outside the 28 page limit.

Quotations for requested equipment should be included as an appendix. These items are outside the 28 page limit.

No other materials are permitted. Incomplete proposals will be returned without review. Proposals that do comply with these guidelines will be returned without review.

## V. DUE DATES

Letters of Intent and full proposals must be submitted electronically in PDF format, each as a single file, e-mail attachment to the SD EPSCoR program office by the date and time indicated below using the following e-mail address: [Elizabeth.Martinson@sdstate.edu](mailto:Elizabeth.Martinson@sdstate.edu)

- Letter of Intent (required—due by 5 PM submitter’s local time):  
o November 3, 2017

- Proposals (required--due by 5 PM submitter’s local time):  
o January 19, 2018

- Panel Presentations and Review  
o April 2018

- REACH Committee Approval  
o June 2018

- NSF Full Proposal Submission Deadline  
o August 2018

## VI. WHERE TO SUBMIT

Letters of Intent and proposals should be submitted electronically as a single file in PDF format as e-mail attachments by 5:00 PM proposed local time on their respective due dates to the SD EPSCoR Office using the following e-mail address:

[Elizabeth.Martinson@sdstate.edu](mailto:Elizabeth.Martinson@sdstate.edu)

Hard copies will not be accepted and will be returned without review.

## VII. PROPOSAL REVIEW INFORMATION

**Proposal Review Process.** A two-phase proposal review process will be used to select the research focus area for the next state submission. An external organization will be contracted to conduct the review of proposals. Phase I of this review will consist of an *ad hoc* technical review of the proposals received. These reviews will be used by the SD EPSCoR Advisory Committee (REACH) to select the proposals that will be invited to participate in Phase II of the review process. Phase II will be an in-state panel review conducted managed by the external organization contracted to conduct the Phase I review. Details of, and preparation instructions for, the Phase II review will be provided to the leadership of the proposal invited to participate in it.

**Proposal Review Criteria.** Proposals submitted in response to this solicitation will be reviewed and evaluated by an external panel convened on behalf of the SD EPSCoR program. Project directors will receive a written summary of the review panel's assessment of their proposal.

Proposals will be reviewed using the [NSF review criteria](#) described in the PAPPG (Intellectual Merit, Broader Impacts, etc.). Additional evaluation criteria that the reviewers will be asked to consider in their assessment of the proposals include:

1. Are the proposed infrastructure improvement activities consistent with NSF funding priorities?
2. What is the potential of the scientific activities to impact the nation's and South Dakota's research infrastructure?
3. Are the proposed infrastructure improvement activities consistent with the State Science & Technology Plan?
4. What is the potential of the proposed infrastructure improvement activities to contribute to state economic and workforce development goals?
5. What is the potential for proposed activities to achieve self-sustaining status (i.e., the potential for "graduating")?
6. The quality of the project's education and training components, especially plans to attract and effectively involve individuals from under-represented groups.
7. The character and quality of the multi-institutional interactions.
8. The capabilities of the project leadership, including managerial and organizational ability of the director and of the proposed leadership team.
9. The quality of the project management plan.
10. The competitive status of the research area as a result of prior/current RII Track-1 funding (if any) and the competitiveness impact that additional funding would have.