



**KANSAS NSF EXPERIMENTAL PROGRAM TO
STIMULATE COMPETITIVE RESEARCH
(EPSCoR)**

January 2008

REQUEST FOR PROPOSALS:

- Major Initiatives to Improve Research Infrastructure

Letters of Intent

Due February 1, 2008

Proposals (by invitation only)

Due April 1, 2008

***Funded by the National Science Foundation and the State of Kansas
through Kansas Technology Enterprise Corporation (KTEC)***

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Note: Some text in this RFP is excerpted directly from *NSF 08-1*.

1.0 Contact Information

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Sources of Additional Information

- Kansas NSF EPSCoR Web site: <http://www.nsfepscor.ku.edu>
- NSF Web site: <http://www.nsf.gov/od/oia/programs/epscor/about.jsp>
- Sponsored research offices at KU, KSU, and WSU

2.0 Introduction

2.1 Intent of RFP

In the latter half of 2008, Kansas NSF EPSCoR (KNE) will submit a Research Infrastructure Improvement (RII) proposal to NSF for funding for Phase VI. The current level of funding for RII awards is \$15 million over five years. To develop the RII proposal, KNE is seeking proposals that will be the components of this multi-million dollar/multi-year request to NSF. This internal RFP is addressed to faculty and administrators at Kansas State University (KSU), the University of Kansas (KU), and Wichita State University (WSU). Within are described the kinds of proposals KNE is seeking and the procedures for applying and proposal review. Funding for proposals selected in response to this internal RFP is contingent upon full funding by the NSF of the KNE RII proposal.

2.2 Goals of NSF EPSCoR

The National Science Foundation (NSF) established the Experimental Program to Stimulate Competitive Research (EPSCoR) in 1979 as a way to increase the research capacity and competitiveness of states that have historically received “lesser” amounts of Federal R&D funding. The program currently operates in 25 states: Alabama, Alaska, Arkansas, Delaware, Hawaii, Idaho, **Kansas**, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, West Virginia, and Wyoming, as well as the Commonwealth of Puerto Rico and the U.S. Virgin Islands.¹

EPSCoR’s mission is:

to assist the National Science Foundation in its statutory function "to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education." EPSCoR goals are: a) to provide strategic programs and opportunities for EPSCoR participants that stimulate sustainable improvements in their R&D capacity and competitiveness; and b) to advance science and engineering capabilities in EPSCoR jurisdictions for discovery, innovation and overall knowledge-based prosperity.²

2.3 Kansas NSF EPSCoR (KNE): Brief History

In 1992, Kansas received a 36-month NSF EPSCoR Research Infrastructure Improvement award that was matched by the State of Kansas through Kansas Technology Enterprise Corporation (KTEC) and by additional funds from the participating universities — KSU, KU, and WSU. These funds constituted Phase I (1992-1995) of Kansas NSF EPSCoR. Since then, Kansas NSF EPSCoR has received four additional awards: Phase II from 1995-1999, Phase III from 1999 - 2003, Phase IV from 2003 - 2006, and Phase V from April 1, 2006 through March 31, 2009.

The KNE proposal to be submitted in 2008 will request funding to continue activities from April 1, 2009 potentially through March 31, 2014. This proposal, if funded, will constitute Phase VI of KNE’s infrastructure development efforts to take the research enterprise to the next level.

3.0 Phase V: Objective and Focus

In 2004, the Kansas Legislature passed the Kansas Economic Growth Act³, a \$500 million plan to develop a stronger biosciences economy in the State. Out of this legislation came the

Kansas Bioscience Authority⁴ and the development of the Kansas Bioscience and Innovation Roadmap⁵. In alignment with this State S&T plan, KNE will concentrate its Phase VI resources on enhancing research infrastructure in order to maximize the impact of this legislation, while achieving synergy between state economic development and university research initiatives.

Over the last 15 years of KNE funding the research culture in the State of Kansas has shifted from one of primarily single-investigator projects to one in which multi-disciplinary, multi-institutional, and multi-state collaborations are enabling researchers to investigate more complex problems, resulting in larger awards. By encouraging interaction among researchers at progressively broader scales and by rewarding collaborative efforts with funds for research infrastructure improvements, KNE has helped increase the research capacity in Kansas.

The current Federal funding climate has opened up opportunities for expanded research initiatives, namely, the development of multidisciplinary collaborations that more effectively enable today's complex global science and technology challenges to be addressed. In keeping with the concept of an expanded research enterprise, KNE will select one or more state-level **Major Initiatives** that define and implement a broad and integrated plan to build on existing strengths and prepare the research infrastructure necessary to compete for large NSF awards. These initiatives will address problems that are directly related to the science and technology goals of the State, with particular emphasis on building infrastructure in focus areas of **Global Climate Change** and **Renewable Energies**. Projects selected must also include a strong component that addresses sustainability after KNE funding. Enhancing cyberinfrastructure will also be included in the RII proposal for Phase VI either as a component of a Major Initiative and/or separately.

4.0 Major Initiatives

4.1 Purpose

Major Initiatives are intended to add significant capacity to the academic research infrastructure in the focus areas mentioned in Sec. 3.0. These multidisciplinary projects should address science and technology challenges in areas that directly relate to the mission of the National Science Foundation by crossing disciplines, institutions, sectors, and potentially state lines in order to develop integrated scientific research programs. Major initiatives are expected to lead to significant, non-EPSCoR extramural funding for the proposed research after the award to enable continuation and leveraging of EPSCoR funding.

4.2 Characteristics

In terms of scientific focus and organization, Major Initiatives should;

- address science and technology challenges in the focus areas of **Global Climate Change** or **Renewable Energies**;
- increase the scope and scale of research by establishing or enhancing state-level research collaborations that cross disciplines; by involving at least two and preferably the three Kansas research universities (KU, KSU, WSU); by fostering linkages with the private sector or the government; and by involving regional, national and/or international collaborators. [NOTE: KNE funds cannot be subcontracted to non-EPSCoR jurisdictions. See Section 5.2 for more information.];
- be led by faculty with established research programs and experience in collaborative research;
- implement activities that add significant and measurable value to the research capability of the State in the areas of Global Climate Change or Renewable Energies, ultimately

becoming competitive for a major interdisciplinary center or program that will sustain the activities begun by the Major Initiative award; and

- contribute to the Science and Technology strategy of the State of Kansas for future research innovation and economic growth.

*A Major Initiative is **not** the appropriate mechanism to provide support for individual faculty research projects. Requests of support of such projects should be directed to NSF's regular research grant programs.*

Each Major Initiative should include a visible and substantive effort to integrate research and education in order to develop human resources. The Major Initiative should:

- include both senior and junior faculty researchers and be designed to enable mentoring of junior faculty and students by more senior project participants;
- increase diversity by enabling participation by women and men, underrepresented minorities, and persons with disabilities to the extent possible within the scope of the project;
- create graduate research training groups or mechanisms that will lead to submission of IGERT or similar proposals to the NSF or other Federal agencies. Examples include: integrating education and research; encouraging multidisciplinary educational experiences; developing internships; establishing links with industry and national laboratories; and nurturing a synergistic "corporate" educational and research responsibility; and
- link the research activities to enhancements in the K-12 curriculum, expand opportunities for community college students and/or faculty or underrepresented groups to participate in university research, or test a new graduate education initiative prior to submission of an IGERT or similar proposal to NSF or other Federal funding agencies.

4.3 Examples

Below are **examples** of infrastructure improvement activities excerpted from the current NSF EPSCoR RFP⁶ and consistent with the KNE objectives for Phase VI. Actual proposals may include and combine these kinds of activities or present other strategies that will help develop the research infrastructure in Kansas to the next level of funding competitiveness in the designated focus areas.

- *Development of meaningful partnerships, including regional collaborations, among EPSCoR jurisdiction-based colleges and universities; partnerships between such EPSCoR colleges and universities and nationally recognized centers of R&D activity (e.g., federal and industrial R&D laboratories, NSF-sponsored research centers, and academic institutions with nationally-recognized research capabilities); and productive partnerships between the jurisdiction's research universities and the private sector in the region. Of special value are those alliances that increase linkages between EPSCoR researchers and their counterparts in research and/or technology-based small businesses and thereby increase the competitiveness of the jurisdiction's/region's S&T entrepreneurial talent for federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants;*
- *Establishment of graduate research training groups or similar appropriate mechanisms that integrate research and education, encourage multidisciplinary research-based educational experiences, and establish links with the private sector, industry and national laboratories;*

- *Promotion of partnerships between U.S. scientists and engineers and their international counterparts to enhance research excellence and foster development of the next generation of globally engaged U.S. scientists and engineers; and*
- *Development of nationally competitive high-performance computing and networking capabilities that strengthen and enrich the cyberinfrastructure environment to enable more robust science and engineering research and education, and facilitate broader collaborative interactions with researchers at minority serving institutions within the jurisdiction.*

4.4 Amount and Duration of Award

A Major Initiative may receive between \$500,000 and \$800,000 direct costs per year for up to five years. The start date is expected to be April 1, 2009, contingent upon notice of award from the NSF. Awards will be made in 12-month increments with continued funding contingent upon successful completion of project milestones as determined by an external review of the project.

4.5 Matching Funds

It is not yet known if there will be a match requirement for this NSF competition. However, statements of institutional and other commitments that do not specify exact dollar amounts are encouraged. Principal Investigators may wish to consult their institution's proposal preparation unit for assistance with letters of commitment. These are not required for letters of intent.

4.6 Eligibility

Regular, tenured faculty members and principal academic administrators at KSU, KU, and WSU may submit Major Initiative proposals as **Principal Investigators**. Proposals **may** include, as **co-principal investigators**, faculty and administrators holding full-time tenured positions at other Kansas universities as well as junior and/or senior faculty members or principal academic administrators at KSU, KU or WSU. It is, however, strongly encouraged that non-tenured, tenure track faculty not be given roles entailing substantial administrative burden. Only multi-investigator, cross-disciplinary proposals that include researchers from at least two of the three research universities in Kansas (KSU, KU, and WSU) will be considered.

5.0 Application Procedures

A Major Initiative proposal requires a Letter of Intent and, *contingent upon selection*, a full proposal.

5.1 Letter of Intent

Letters of Intent should be prepared electronically as a PDF on departmental or university letterhead and submitted via email attachment to nsfepscor@ku.edu by 5:00 p.m., Friday, February 1, 2008. The Letter of Intent should contain the following information:

- planned title of the proposal;
- the name and contact information of the Principal Investigator and Co-Principal Investigators;
- a description of the project (not to exceed 1500 words);
- tentative investigators with their affiliations, and roles (i.e., subgroup leader, researcher, etc.);
- future target funding sources for sustainability;

- the names and contact information for three potential reviewers of the proposal and, if desired, names of reviewers that should not be included. (*Note: Do not contact the potential reviewers to determine their availability.*)

Letters of intent will be reviewed internally by the KNE and the Vice Provosts for Research at KSU, KU, and WSU. Projects considered to fit best within the specified focus areas and/or to be the most promising in terms of improving the State’s research infrastructure will be invited to submit full proposals. It is anticipated that invitations for full Proposals will be issued no later than February 15, 2008.

5.2 Proposal

Only the PIs of the invited projects will be encouraged to submit full proposals. Un-invited proposals will be returned without review. Full proposals must be submitted through the research office at the Principal Investigator’s institution which will submit one PDF electronic copy of the proposal to the Kansas NSF EPSCoR Project Director by 5:00 p.m., Tuesday, April 1, 2008 and 7 paper copies by 5:00 p.m. Friday, April 4, 2008. (*Note: Proposals are submitted directly to KNE, not through NSF FASTLANE.*)

Proposals should follow the NSF margin and spacing requirements in *NSF 08-1* and include:

Component	Guideline
Cover Sheet	Prepared using the form in NSF’s forms kit (see link on the Kansas NSF EPSCoR web site). Be sure to specify the NSF center or program where the initiative will eventually be targeted.
Project Summary	Prepared in accordance with the <i>NSF 08-1</i> .
Project Description	Prepared in accordance with the <i>NSF 08-1</i> , <u>except</u> limited to 10 pages. The Project Description must describe: recent activities related to the proposed activities; the proposed activities and how they will address the purpose of Major Initiative Grants; how the initiative will be structured and managed; and what proposals will be submitted to the NSF or other federal agency within the award period and afterward as a result of the Major Initiative.
Biographical Sketch	For the PI and Co-PIs, prepared in accordance with the <i>NSF 08-1</i> .
Budget	Prepared on the Kansas NSF EPSCoR Budget Form available on the Kansas NSF EPSCoR web site. Show direct costs only; do not include any indirect costs (F&A). EPSCoR funds may not be sub-contracted to non-EPSCoR jurisdictions; however, researchers in Kansas may, for example, facilitate collaborations with researchers in non-EPSCoR jurisdictions by requesting funds to travel to meet with collaborators or to bring them to Kansas. In addition, EPSCoR funds may be used to establish educational linkages or programs with institutions in Kansas, such as K-12 schools, community colleges, four-year colleges, and museums.
Budget Justification	Prepared in accordance with the <i>NSF 08-1</i> .
Project Timeline	1-2 pages that specify when the project activities and expenditures will

	occur. See example at Kansas NSF EPSCoR web site.
Current and Pending	Prepared in accordance with the <i>NSF 08-1</i> .
Facilities	Prepared in accordance with the <i>NSF 08-1</i> .

Principal Investigators are encouraged to discuss their proposal with the KNE Project Director before submission.

5.3 Proposal Review

Invited proposals will be peer reviewed by a panel that will make recommendations for inclusion in the KNE RII proposal to be submitted later in the year. The reviewing process may also include an interview of the potential project leaders. KNE expects to inform Principal Investigators of the results of this review in May 2008.

5.4 Selected Proposals

KNE expects the Principal Investigator and Co-Investigators of selected proposals to work with the KNE Project Director, Assistant Director, and other team members to prepare the section of the KNE proposal narrative describing the Major Initiative(s). This preparation is anticipated to begin soon after acceptance of the project.

6.0 Review Criteria

Major Initiative proposals for activities in the areas of **Global Climate Change** and **Renewable Energies** that show the greatest potential for long-term impact in Kansas on academic research capacity and ability to compete for large programmatic grants will receive priority.

KNE solicits reviews of proposals from peers with expertise in the subject area of the proposed project. This review is facilitated if the investigator suggests the names of appropriate reviewers (see Section 5.1).

In reviewing proposals, Kansas NSF EPSCoR uses the general merit review criteria established by the National Science Foundation Board. The two merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While investigators must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

1. What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative, original **or potentially transformative** concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

2. What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic,

etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Kansas NSF EPSCoR will give careful consideration to the following in making funding decisions:

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria

Reviewers of Major Initiative proposals will also be asked to place special emphasis on the likelihood that the proposed project will enhance research competitiveness and substantially improve the ability of researchers in Kansas to obtain sustained non-EPSCoR funding from Federal, State, or private sector sources. Major Initiative proposals that show the greatest potential for long-term impact on research capacity and competitiveness in Kansas in **Global Climate Change** or **Renewable Energies** will receive priority for funding.

7.0 General Conditions of Award

If a proposal is selected for funding, the Project Director reserves the right to negotiate the budget and the term of the award.

During the term of the award and for two years after the end date, the principal investigator (PI) must inform the Project Director of: 1) changes in the principal investigator's contact information, 2) proposals submitted, and 3) awards received as a result of the KNE award. Information about proposals and awards should include the title of the proposal or award, the PI and, when applicable, co-PIs, the funding agency, the amount of the proposal or award, and its duration.

During the term of the award and for one year after the end date, the principal investigator and co-principal investigators must participate in the annual Statewide EPSCoR Conference.

The PI of each project will be required to submit annual reports and a final project report. More information about reporting requirements and deadlines will be provided in the award letter.

Any publication resulting from the award must include the following statement of acknowledgment:

This research is based upon work supported by the National Science Foundation under [Grant Number to be provided with letter of award] and matching support from the State of Kansas through the Kansas Technology Enterprise Corporation.

8.0 Endnotes

¹ <http://www.nsf.gov/od/oia/programs/epscor/statewebsites.jsp>

² <http://www.nsf.gov/od/oia/programs/epscor/about.jsp>

³ <http://www.kansasbioauthority.org/aboutus/kega.html>

⁴ <http://www.kansasbioauthority.org/aboutus/index.html>

⁵ http://www.ktec.com/sec_bioscience/section/roadmap/overview.htm

⁶ NSF 08-500