**MISSISSIPPI EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH (MS EPSCoR)**

**MODELING AND SIMULATION OF COMPLEX SYSTEMS SEED RESEARCH GRANT PROGRAM**

**2014**

**Deadline: April 11, 2014**

**BACKGROUND**

The 2009-2014 Mississippi EPSCoR award from the National Science Foundation (NSF) promotes research in

Modeling and Simulation of Complex Systems. The three research focus areas within this grant are computational chemistry (CompChem), computational biology (CompBio) and biosystems simulation (BioSim). The grant provides support for up to six seed grants per year for innovative research in or between the three focus areas. The research programs within each focus area are:

• Modeling and Simulation of Nanoscale Chemistry (CompChem)

• Modeling of Biological Systems (CompBio)

• Multi-Scale Simulation Framework for Biological Systems (BioSim) More information on the MS EPSCoR can be found at http://[www.msepscor.org](http://www.msepscor.org/)

**SEED RESEARCH GRANT OBJECTIVES**

The MS EPSCoR Seed Research Grants are designed to strengthen competitiveness in the focus areas of computational chemistry, computational biology, and biosystems simulation in the partnering institutions as defined in the funded proposal. The partnering institutions are Jackson State University, Mississippi State University, the University of Mississippi (including the University of Mississippi Medical Center), and the University of Southern Mississippi. The seed research grants are targeted for research that builds on the foundation of existing research focus areas, that extends the breadth of research in the three research areas, and that establishes bridges between the focus areas. The intent is to promote a stronger interdisciplinary research network in Mississippi and to make Mississippi researchers more nationally competitive in research in each of the three focus areas and in research that cuts across focus areas. The proposals must be for new unfunded research or a continuation of a previously funded seed grant.

The grants are targeted to less experienced investigators initiating research in one of these areas or to experienced faculty changing fields and/or initiating a project in a new area that will strengthen research in modeling and simulation of complex systems. Although the budget can remain entirely at a single institution, grants promoting multi-university collaborations and research that involves more than one focus area will be a priority. Preference will be given to projects that integrate research across institutions and across the focus areas of computational chemistry, computational biology, and biosystems simulation.

All research must be tightly integrated with core goals of the current project. Applicants are encouraged to read the description of the 2009-2015 project and Strategic Plan at: <http://www.msepscor.org/>prior to preparing proposals to ensure that the proposed project is consistent with the objectives of the award. Applicants are also encouraged to contact the Science Coordinator to discuss the proposed research prior to submission (see contact information below).

These seed research grants are intended to stimulate new research leading to grant proposal submissions in the near future and to the rapid growth of the research network targeted by the EPSCoR proposal. Innovative, high- risk-high-reward projects are particularly encouraged. They are not intended for additional support for established research.

**ELIGIBILITY**

Faculty members at any of the four partnering institutions are eligible to apply. Faculty members at other Mississippi institutions of higher learning can also apply for seed grants if their research is tightly integrated with the MS EPSCoR research at one of the partnering institutions. The proposed research must be integrated with the goals of the project as described at [http://www.msepscor.org/](http://www.msepscor.msstate.edu/) . Researchers who received seed research grant funding in a previous year are eligible to apply for a continuation. Proposals for continuing grants will compete with new grant proposals and will be evaluated based on results from the first year of research and publications and proposals generated during the first year in addition to the criteria used to evaluate other proposals.

**FUNDING AMOUNT**

Funding for each proposal is for one year and will not exceed **$36,000 per researcher** including Facilities and Administration (F & A) pending availability of funds from NSF. **Proposers should use the appropriate F & A rate for their institution** and F & A must be included in the $36,000. Linked proposals from two or more of the partnering institutions are allowed. In linked proposals, a single proposal is submitted, but separate budgets are submitted for each institution. Linked proposals will be reviewed based on the scientific merit of the single submitted proposal and must represent a single, integrated research effort. Each researcher can only be a PI or co- PI on one proposal and may be listed as unfunded collaborator on up to two additional proposals.

**COST SHARING REQUIREMENT**

**NSF EPSCoR funding requires cost sharing of 20% of total NSF costs.** The cost share must meet NSF cost share requirements and cannot include any federal funds. Cost share will be the responsibility of the researcher’s home institution.

**REPORTING REQUIREMENTS**

Grantees are required to submit a final report (1-3 pages) within 2 months of the end of the grant period. The report should detail the activities, publications, extramural grant application(s), and/or extramural grant awards arising from support. Include names, degrees and demographic information for any personnel supported by the award. A reminder will be sent 1 month before the report is due.

**FORMAT OF PROPOSAL**

*Applications should be prepared with the following specifications:*

*Page Size: 8 ½ x 11 inches, Spacing: Single, Font: Times New Roman or Arial, 12 point, Margins: 1”.*

**1. Cover Page**

a. Proposal Title

b. Principal Investigator and Co-Investigator(s) (Full name, Title, Primary Affiliation, Phone Numbers, Fax

Number, E-mail Address)

c. Type of Proposal: Regular or Linked

**2. Abstract (Maximum of 200 words)**

**3. Proposal (Maximum of 5 pages—longer proposals WILL NOT be reviewed)**

a. Overview, objectives and significance (~0.5 page)

b. Background and review of relevant literature (~0.5 page).

c. Research plan—include a description of the nature of the proposed work and a publication plan (~2 pages). d. Expected results (~0.5 page)

e. Potential for generating competitive funding (~0.5 page)

f. Describe the nature of proposed collaboration with ongoing EPSCoR research activities. (~0.5 page)

g. Distinguish between current EPSCoR funding and the proposed seed grant (Only for investigators already receiving support through EPSCoR). (~0.25 pages)

**4. Budget**

All budgets are to be submitted in NSF format. Budgets may include faculty salaries, postdoctoral salaries, graduate and undergraduate student salaries, fees, and tuition, supplies, contractual, equipment and travel. The budgets must include appropriate fringes on all personnel salary and must include F&A. No subcontracts are allowed.

**5. Appendices**

a. Literature cited

b. Budget **including cost share** (NSF format, 1 page). c. Budget justification (1 page)

d. Curriculum vitae of all investigators (NSF biosketch format, 2 pages maximum for each investigator)

e. Statement agreeing to provide a final report and to present the research results at the Mississippi EPSCoR Annual Meeting.

f. Up to three suggested reviewers (optional)

**PROPOSAL REVIEW**

Proposals will be reviewed by internal and/or external reviewers for scientific merit, relevance to MS EPSCoR’s aims, multi-disciplinary collaboration, justification of budget, potential for rapid success including subsequent submissions of full proposals to external agencies, and training opportunities for graduate students especially those from underrepresented groups. The reviewers will provide scientific review without funding recommendations and the Mississippi EPSCoR Steering Committee will make the final funding decisions.

**SUBMISSION PROCEDURE, DEADLINE AND NOTIFICATION OF AWARD**

Proposals should be contained in a single PDF file and sent as an email attachment to:

Dr. Keith Walters

Science Coordinator

Modeling and Simulation of Complex Systems

Mississippi NSF EPSCoR Program

Mississippi State University Email: walters@me.msstate.edu Tel: 662-325-8231

**Deadline: April 11, 2014**

**Notification: May 15, 2014**

**Start Date for Proposals: June 1, 2014**

Proposers are strongly encouraged to contact the Mississippi EPSCoR Science Coordinator or the Lead Investigator in each research area for additional information:

Computational Biology Lead Investigator

Dr. Byron Williams

Department of Computer Science and Engineering

Mississippi State University Email: williams@cse.msstate.edu Tel.: 662-325-2079

Biosystems Simulation Lead Investigator

Dr. Keisha B. Walters

Dave C. Swalm School of Chemical Engineering

Mississippi State University Email: kwalters@che.msstate.edu Tel.: 662-325-7203

Computational Chemistry Lead Investigator

Dr. Greg Tschumper

Department of Chemistry and Biochemistry

University of Mississippi Email: tschumpr@olemiss.edu Tel: 662-915-5331