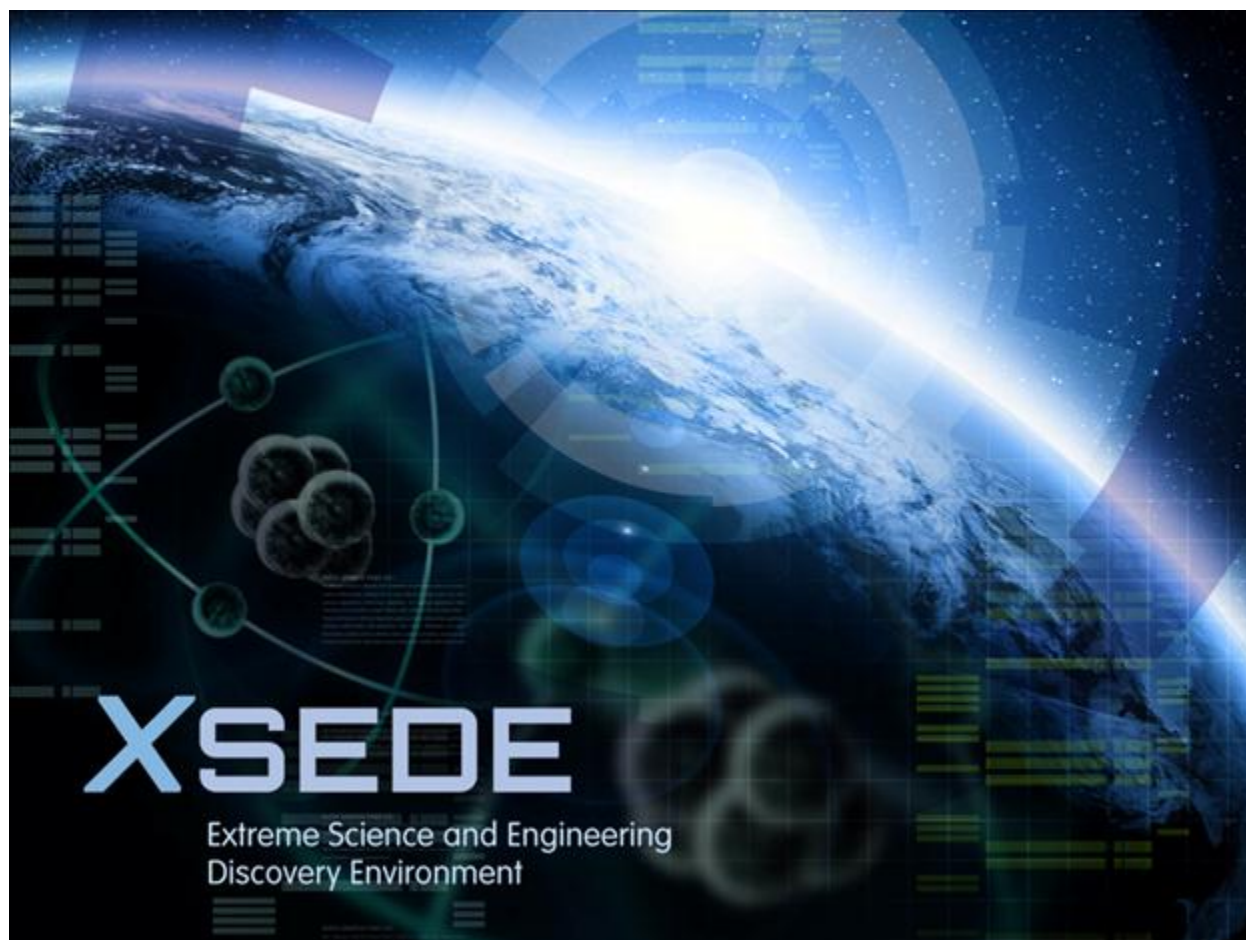


# Extreme Science and Engineering Discovery Environment (XSEDE) Industry Challenge Program

24 May 2013



## A. XSEDE Industry Challenge Program Solicitation

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### A.1. Program Description

The XSEDE Industry Challenge Program aims to accelerate scientific discoveries and technological innovations by awarding, on a competitive basis, faculty and staff time supported by XSEDE and a grant for access to XSEDE resources to address computationally intensive challenges faced by industry. The program brings together researchers, scientists and engineers from academia and industry with interdisciplinary backgrounds, deep knowledge in chosen disciplines, and technical, professional, and personal skills. The program is intended to establish a new model for cooperative and collaborative research between industry and academia that transcends traditional disciplinary boundaries.

Proposals submitted to the XSEDE Industry Challenge Program must fully describe a computationally challenging problem which hinders industry today. The research proposed must demonstrate how the cooperative efforts of academia, industry and XSEDE, and potentially government research laboratories, will provide a framework for solving the problem.

#### **Key Features of XSEDE Industry Challenge Program projects include:**

- a well-defined computationally challenging problem hindering industry
- integration of interdisciplinary research with effective use of XSEDE resources and services
- a plan to establish a supportive environment for innovation and cooperative sharing upon completion of the research
- an agreement that all source code written under this solicitation will become open source code
- clearly defined characteristics of the XSEDE-supported personnel to be part of the research team
- an estimation of the amount of personnel time and computational resources required for the project

#### **Principal Investigator**

The Principal Investigator (PI) shall direct the project and is expected to be an essential participant in its activities. The PI will have the overall responsibility for the management of the project and interactions with XSEDE.

### A.2. Program and Award Information

The awards in this program will come in the form of commitments of faculty and staff time supported by XSEDE and a grant for usage of XSEDE resources. The staff time commitment from XSEDE must be matched by at least the same level of effort collectively by the proposing team.

This XSEDE Industry Challenge Program anticipates making up to three awards subject to availability of resources.

### **Anticipated Resources:**

- between 0.5-1.0 FTE personnel for the duration of the project from XSEDE to be at least matched by the proposing team
- up to 200,000 CPU core-hours/year, with the ability to request additional time.

**Letter of Intent Due Date (*required*)** (due by 5 p.m. proposer's local time): July 19, 2013

- XSEDE is striving to provide feedback to those submitting a Letter of Intent within three weeks of the submission deadline.

**Full Proposal Deadline** (due by 5 p.m. proposer's local time): September 13, 2013

- XSEDE is striving to be able to tell applicants whether their proposals have been declined or recommended for support within one month of the submission deadline.

### **A.3. Eligibility Information**

Proposers eligible to submit proposals to the XSEDE Industry Challenge Program are faculty and researchers from accredited universities, industry researchers and researchers from government laboratories. The PI must be on the faculty or research staff of the submitting institution or a research scientist (or equivalent) at the submitting corporation.

A multi-institutional/corporation proposal is defined as one that has at least one co-PI at a different academic institution or corporation than that of the PI.

Any given individual may participate as a PI or co-PI in only one XSEDE Industry Challenge proposal submission. However, a PI or co-PI on one XSEDE Industry Challenge proposal may serve as an individual participant on any number of other proposals.

### **A.4. Preparation and Submission Instructions**

#### **A.4.1.Proposal Preparation**

##### *A.4.1.1. Letters of Intent*

A two page Letter of Intent (LOI) is required. One LOI per lead institution/corporation for the XSEDE Industry Challenge Program will be accepted. LOIs are used to judge the overall response and requirements for reviewers. In addition, they will be used to potentially refine the solicitation in advance of submission of final proposals. They are not used as pre-approval mechanisms for the submission of full proposals and no feedback is provided to the submitters. The letter should be submitted via email no later than the deadline for the LOI specified in this solicitation. XSEDE is striving to provide feedback to those submitting a Letter of Intent within three weeks of the submission deadline. Any proposal submitted without the aforementioned required Letter of Intent will be returned without review.

Submit your two page LOI through email, including each of the following categories ONLY:

- The name and departmental/corporate affiliation of the Principal Investigator.
- The name(s) and departmental/corporate affiliation(s) of the Co-PI(s).
- The lead institution and any other participating institutions.
- Project title: The project title should reflect the primary class of problem being addressed.
- Synopsis (maximum of 500 words in this section). Provide a brief statement of the vision and goals of the proposed research including a brief statement of the primary class of problem being addressed. The theme should be clearly responsive to the goals of the XSEDE Industry Challenge Program.

When submitting a Letter of Intent through email in response to this Program Solicitation please note the conditions outlined below:

- A Minimum of 0 and Maximum of 4 Other Senior Project Personnel are allowed
- A Minimum of 0 and Maximum of 10 Other Participating Organizations are allowed
- Submission of multiple Letters of Intent from the same lead institution is not allowed

#### *A.4.1.2. Full Proposals*

Full proposals must contain the items listed below and adhere to the specified page limitations. Proposals that exceed the specified page limitations may be returned without review. No additional information may be provided by links to web pages within the proposal, except as part of citations in the References Cited section.

**Cover Sheet:** A short informative title for the proposed XSEDE project must be provided.

- A. **Project Summary** (1-page limit): Provide a summary description of the XSEDE Industry Challenge Program project, including its research theme and class of primary problem, in a manner that will be informative to a general technical audience. The project summary must consist of 3 parts:
  - a. At the top of this page include the title of the XSEDE Industry Challenge Program project, the name of the PI, and the lead institution/corporation. Also list any other participating institutions/organizations and indicate whether this is a multi-institution proposal;
  - b. provide a succinct summary of the proposal that describes the problem to be addressed and how it spans industries, how the proposed project will address the problem, and how the project will benefit from the integration of interdisciplinary research with effective use of XSEDE resources and services
  - c. describe the anticipated impacts for the proposed project
- B. **Project Description:** The project description section contains 5 required items. Items 1 through 5 are limited to a combined total length of 10 pages, inclusive of tables, figures, or other graphical data.
  - a. **List of Participants** (1-page limit): For up to 20 PI/co-PIs and other senior personnel expected to have the greatest roles in the project include: name, project role (PI, co-PI, faculty participant, research staff participant, industry participant, etc.), departmental and institution/corporation affiliation, disciplines and/or areas

of expertise. These should be the same key PI/co-PIs and other senior personnel for which biographical sketches are later included. Other participants may join an XSEDE Industry Challenge Program project at a later date if it is awarded. Required templates for projects are provided below.

Name	Role	Institution / Organization	Expertise
PI name	PI	Department, Institution	Relevant areas of expertise
Co-PI name	Co-PI	Department, Institution	Relevant areas of expertise
Faculty/Researcher participant name	Faculty/Researcher participant	Department, Institution	Relevant areas of expertise

Acronyms may be used if defined.

- b. **Vision, Goals, and Thematic Basis:** Discuss the vision, goals, and impacts of the proposed XSEDE Industry Challenge Program project. Describe the thematic basis and unifying aspects of the inter-industry research, with particular emphasis on creating an environment for facilitating innovation. For proposals submitted to this XSEDE Industry Challenge Program, the PIs should explicitly state how their proposed research project is responsive to the priorities of this solicitation. Describe the opportunities to take the inter-industry research findings beyond the level of discovery, as appropriate to the inter-industry theme. Proposals should clearly articulate project objectives and planned outcomes with respect to the primary class of problem.
- c. **Major Research Efforts:** Describe the major inter-industry research efforts, their transformative aspects, and how the inter-industry research efforts are interwoven and integrated to form the thematic basis for the XSEDE Industry Challenge Program project. For the project described, specify the faculty members and other principals involved, and provide sufficient detail to enable assessment of the scientific merit and relevance to the overall project. Describe the potential for economic and/or societal benefit in the inter-industry research proposed.
- d. **Organization, Management, and Institutional Commitment:** Describe plans and procedures for the organization and management of the XSEDE Industry Challenge Program project. Describe the commitment of the institution to facilitating and furthering the plans and goals of the XSEDE Industry Challenge Program project.

Should a multi-institution project be proposed, provide a careful justification that considers the administrative complexity and the expected benefits. Discuss the role of any other academic institutions or organizations such as government, non-U.S. institutions, or private foundations that are expected to participate in the XSEDE Industry Challenge Program project.

- e. **Performance Assessment / Project Evaluation:** Projects should include an annual evaluation plan that will be used by the project team to evaluate success in meeting project goals. The plan should include project goals; measurable evaluation questions and indicators based on the project goals; and a summary design of the proposed evaluation, including proposed data collection methods, timeline, and assignment of responsibilities; and provide a formative assessment to improve the project.
- C. **References Cited** (3-page limit)
- D. **Biographical Sketches:** A maximum of 20 biographical sketches may be included, and must be the same as the individuals on the List of Participants. In choosing what to include, emphasize information that will be helpful for understanding the strengths, qualifications, and specific impact the individual brings to the XSEDE Industry Challenge Program project.
- E. **Budget and Allowable Costs:** Provide a budget for each year of support requested in terms of staff assigned to the project. Also include an estimate of the amount of computational resources you will need.
- F. **Budget Justification** (1-page limit): Provide a justification for the computational resources requested for the XSEDE Industry Challenge Program project. Also, provide a justification for the level of effort requested from XSEDE along with a clear delineation of level of effort to be committed by the project proposers to at least match the level of effort requested.

Provide details of anticipated resource commitments of any other organizations expected to participate in the XSEDE Industry Challenge Program project, such as government, non-U.S. institutions, or private foundations. Appropriate letters of commitment from participating organizations should be included in Supplementary Documentation (below).

- G. **Facilities, Equipment and Other Resources** (1-page limit): Provide a description of facilities and major instruments that are available to the project and require no additional support from XSEDE.
- H. **Supplementary Documentation:** One internal letter of commitment, up to 2 pages in length, from the appropriate senior institutional administrator is required. This letter should specify how the institution will facilitate implementation of the XSEDE Industry Challenge Program project and support its goals over the life of the project. If matching staffing effort is also being committed by this institution, the letter should specify and commit that effort.

A letter of commitment, up to 2 pages in length, is required from any participating institution from which matching staffing effort is being committed. This letter should come from the appropriate senior institutional administrator. This letter should include a description of the role that the partner will play in the XSEDE Industry Challenge Program and specify and commit the matching staffing effort.

Up to five additional supporting letters, each one page in length may be provided. Supporting letters should be provided for each major key outside partner (institution, organization, or individual) involved in the XSEDE Industry Challenge Program project.



External letters should include a description of the role that the partner will play in the XSEDE Industry Challenge Program.

#### **A.4.2.Submission Requirements**

All proposals must be submitted via email to [IndustryChallenge@xsede.org](mailto:IndustryChallenge@xsede.org)

#### **A.5. Review Criteria**

The proposals will be reviewed by a committee established by XSEDE. Awards will be determined based on the merits of the proposal with respect to the objectives of the XSEDE Industry relations Program as stated above.

##### **Additional Solicitation Specific Review Criteria**

For the XSEDE Industry Challenge Program, a proposal that is non-responsive to the priorities articulated for this solicitation and that is not clearly addressing a well-defined computationally challenging problem hindering industry will be returned.

#### **A.6. Review and Selection**

Proposals submitted in response to this program solicitation will be reviewed by a committee established by XSEDE. Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The XSEDE Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the XSEDE Program Officer recommends to the XSEDE Senior Management Team whether the proposal should be declined or recommended for support. XSEDE is striving to be able to tell applicants whether their proposals have been declined or recommended for support within one month of the submission deadline.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator by the XSEDE Program Officer. In addition, the proposer will receive an explanation of the decision to support or decline the project.

#### **A.7. Award Administration Information**

##### **A.7.1.Notification of the Award**

Notification of the award is made to the submitting Principal Investigator by an XSEDE Program Officer. Principal Investigators whose proposals are declined will be advised as promptly as possible by the XSEDE Program Officer administering the program.

##### **A.7.2.Award Conditions**

An XSEDE award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the XSEDE staffing commitment and expected matching level of effort from the project participants, which indicates the amount of staff time allocated per year to this project; (3) the computational resources budget, which indicates the amount of computational time or access to other resources allocated per year on the XSEDE resources; (4) the proposal referenced in the award letter; (5) the applicable award conditions and (6) any announcement or other XSEDE issuance that may be incorporated by reference in the award letter.

### **A.7.3. Reporting Requirements**

For all supported multi-year projects, the Principal Investigator must submit an annual project report to the XSEDE Program Officer within 30 days of the anniversary date of the award date. Within 60 days after expiration of a project, the Principal Investigator also is required to submit a final project report, and a project outcomes report for the general public which can be expected to be posted to the XSEDE website.

### **A.8. Program Contacts**

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- John Towns, XSEDE PI and Project Director, telephone: (217) 244-3228, email: [jtowns@illinois.edu](mailto:jtowns@illinois.edu)
- Martin Biernat, XSEDE Industry Relations Project Manager, telephone: (217) 300-2007, email: [mjbierna@illinois.edu](mailto:mjbierna@illinois.edu)

### **A.9. Other Information**

The XSEDE website ([www.xsede.org](http://www.xsede.org)) provides the most comprehensive source of information on XSEDE contacts and programs. Use of this website by potential proposers is strongly encouraged. In addition, XSEDE provides a free e-mail subscription service designed to keep people informed for XSEDE's activities.

## **B. About the Extreme Science and Engineering Discovery Environment (XSEDE)**

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XSEDE accelerates open scientific discovery by enhancing the productivity of researchers, engineers, and scholars and making advanced digital resources easier to use.

The Extreme Science and Engineering Discovery Environment (XSEDE) is a virtual organization that provides a dynamic distributed infrastructure, support services, and technical expertise that enable researchers, engineers, and scholars to address the most important and challenging problems facing the nation and world. XSEDE supports a growing collection of advanced computing,



high-end visualization, data analysis, and other resources and services. XSEDE is funded by the National Science Foundation