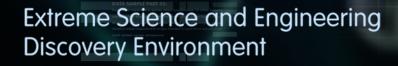
XSEDE Education Program

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XSEDE





#### **XSEDE Education Program Goals**

- Prepare the current and next generation of researchers, educators and practitioners.
- Create a significantly larger and more diverse workforce in computational sciences
- Inculcate the use of digital services as part of their routine practice for advancing discovery.



#### **Assistance with Program Development**

- Campus visits
- Model programs and competencies to shorten the time to implementation
- Assistance with program proposals





## **Developing Faculty Expertise**

- Faculty professional development workshops
  - Two to six day workshops on a variety of topics
    - Computational thinking
    - Computational science education in science and engineering domains
  - Focus on local/regional audiences to reduce travel costs

SEI

Subsidies for faculty to travel to workshops at other sites

# Special Workshops for Faculty and Students

- Development of synchronous and asynchronous education and training sessions
  - Multi-site broadcasts of workshops
  - Online training and education modules
  - Experimenting with full courses that can be widely shared for credit and non-credit inclusion in curricula (e.g.

https://cvw.cac.cornell.edu/apc/default)



#### **Blue Waters Online Courses**

- Similar in format but focused on more advanced topics
- Topic for Spring 2016
  - Designing and Building Applications for Extreme Scale Systems

- Taught by William Gropp, University of Illinois
- Possible second course
- Watch for formal announcements soon

### **Other XSEDE Online Materials**

- <u>https://portal.xsede.org/web/xup/online-</u> <u>training</u>
- Materials on a wide range of technical topics
- Free self-paced tutorials
- Could be embedded in a class or used to help students advance their skills

SEL

## **XSEDE Badging Program**

- Beginning to add assessments to both live and online training events
- Assessments used to earn a badge on that topic
- Should be added to a number of materials in the near future
- Provides a way to measure expertise for both academic and non-academic learners



#### **Repository of Shared Materials**

- Developing a repository of computational science education materials
  - Reviewed by professional staff and faculty
  - Indexed by subject and a detailed competencybased ontology
  - Goal: trusted, comprehensive source of information for computational science educators
  - <u>http://hpcuniversity.org/resources/search/</u>

#### **Opportunities for Students**

- Blue Waters Graduate Fellowship Program
  - <u>https://bluewaters.ncsa.illinois.edu/fellowships</u>
  - Modeled after NSF fellowship
  - Students enrolled at US institution
  - US Citizens or landed immigrants
  - Focus on advanced computational science research that can use Blue Waters

SEI

- Deadline this year - February 3, 2016



#### **More Student Opportunities**

- Blue Waters undergraduate internships
  - <u>Year-long program for undergraduates</u>
  - Two-week intensive training on parallel computing techniques
  - Work with a mentor on a project for the rest of the year
  - Need both applicants and mentors with projects



## **Some Other Opportunities**

- Journal of Computational Science Education
  - www.jocse.org
  - Peer reviewed articles on computational science education experiences
- Become a reviewer for JOCSE or reviewer and contributor to the online repository



## **Opportunities for Students and Faculty**

- Internships
  - Within XSEDE
  - List of opportunities on HPCU site
- Fellowships
  - <u>Blue Waters Graduate Fellowship</u>
- <u>XSEDE Scholars Program</u>
- <u>Faculty workshops</u>



### **New Chapter of the ACM**

- SIGHPC Education Chapter
  - <u>http://sighpceducation.acm.org/</u>
  - Inexpensive to join
  - Webinars on education opportunities and programs
  - Reviewing training and education materials to create a list of high quality materials

#### **Question and Discussion**

