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
  – 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

- [https://portal.xsede.org/web/xup/online-training](https://portal.xsede.org/web/xup/online-training)
- 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
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 competency-based ontology
  – Goal: trusted, comprehensive source of information for computational science educators
  – http://hpcuniversity.org/resources/search/
Opportunities for Students

- Blue Waters Graduate Fellowship Program
  - [https://bluewaters.ncsa.illinois.edu/fellowships](https://bluewaters.ncsa.illinois.edu/fellowships)
  - 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
  - Deadline this year – February 3, 2016
More Student Opportunities

• Blue Waters undergraduate internships
  – Year-long program for undergraduates
  – 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
  – Blue Waters Graduate Fellowship

• XSEDE Scholars Program

• Faculty workshops
New Chapter of the ACM

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