

SIGHPC Education Chapter

A virtual special interest group of the ACM

Update on organization and activities

Chapter Goals

- Promote an increased knowledge of, and greater interest in, the educational and scientific aspects of HPC and their applications.
- Provide a means of communication among individuals having an interest in education and career building activities relating to HPC.
- Promote and collate education activities and programs through formal and informal education activities.
- Provide guidance to the community on the competencies required for effective application of computational modeling, simulation, data analysis, and visualization techniques.
- Provide information on quality educational programs and materials as well as facilitating experience building access to existing HPC resources.

Chapter Officers

- Officers elected annually by the membership in April
 - Chair
 - Vice-Chair
 - Secretary-Treasurer
 - At large officers
 - Two elected from general membership
 - One each designated to represent Europe and Asia/Pacific respectively
- Three named officers must also be members of ACM
- At-large officers only need to be members of the chapter

Committees Do the Work

- Computational Science Education Committee
 - Develop strategies to incorporate and/or enhance computational science education at all levels of education
- Education Content Committee
 - Curating and making available educational material relating to computational science and High Performance Computing
- Workshop Committee
 - Coordinate and manage the development and implementation of in-person and virtual events
- Outreach Committee
 - Arranging and promoting a variety of communications mechanisms for the Chapter
- Systems Operations Committee
 - Curating, recommending and making available material and resources addressing topics of interest to the HPC systems professionals
- K-12 Committee
 - Support educators introducing computational science, HPC, and Data Science concepts in pre-university settings

2019-2020 Activities

- Webinars describing efforts to integrate computational science into the undergraduate curriculum
- Webinars on a variety of other computational science training and education topics
- Workshops at major conferences (SC, PEARC, ISC)
- Coordination with HPC Certification Forum to develop HPC skill tree
- Assembling references to training materials for educators and Systems professionals
- Sharing information on K-12 outreach and education efforts

Recent Examples

- Introducing Computational Science in the Undergraduate Physics Curriculum
 - <https://youtu.be/eXfiMXRDowg>
 - <https://youtu.be/tzhIfTbrCpo>
- Mentoring: Maximize Your Impact
 - <https://sighpceducation.acm.org/events/mentoring.html>
- Using flipped classroom and Jupiter Notebooks to teach undergraduates parallel programming
 - <https://youtu.be/NqE5zMVj2gw>

Past and Upcoming Workshops

- Second Workshop on Strategies for Enhancing HPC Education and Training (at PEARC19 Conference)
- Workshop on HPC Education and Training for Emerging Technologies (at ISC2019)
- Third Workshop on Strategies for Enhancing HPC Education and Training Call for Proposals (at PEARC20)
- Journal of Computational Science Special Issue on Training and Education

Links to Resources

- Listing of past and upcoming events
 - <https://sighpceducation.acm.org/events.html>
- Training and Education Resources
 - <https://sighpceducation.acm.org/resources.html>
- YouTube Channel with recorded webinars
 - https://www.youtube.com/channel/UChrmHj6nFfkhlxPv18LpBzw?view_as=subscriber
- Blog on computational science education activities
 - <http://sighpceducation.hosting.acm.org/wp/>
- List of Systems Professionals materials
 - <http://sighpceducation.acm.org/systems.html>
- HPC Certification Forum
 - <https://www.hpc-certification.org/wiki/b>
- K12 Materials Repository
 - <https://github.com/SIGHPC-Education-Chapter>

<http://sighpceducation.acm.org/>

Journal of Computational Science Education

- Open, online journal
- Refereed articles on broad set of computational science education topics
 - Articles on computational science instructional materials and projects and research on the efficacy of instruction with computational science
 - Student articles detailing their experiences in computational science internships and research experiences
- Annual special issue with papers from SIGHPC Education workshops
- Become a reviewer! Sign up on our website: www.jocse.org

How Can You Help?

- Join the chapter
 - <https://sighpceducation.acm.org/membership.html>
 - Only \$10 annually for professionals and \$5 for students
- Be a leader
 - Join one of the committees and share your expertise.
 - Submit your name for one of the officer positions.
- Be a contributor
 - You have important ideas, techniques, and approaches that need publicity – write a blog post.
 - You have great training materials - send us the links.
 - Got an important announcement related to HPC education or training? Send email to chair@sighpcedu.com and the officers will disseminate if approved.