PEARC19 Student Program Information Sheet

IMPORTANT LINKS

● PEARC19 Student Program Website: https://www.pearc19.pearc.org/student-program
● PEARC19 Program Schedule: https://ssl.linklings.net/conferences/pearc/pearc19_program/views/at_a_glance.html
● Student Program Email List: pearc19students@googlegroups.com
● Slack Workspace: PEARC19-StudentProgram
  ○ URL: http://pearc19-studentprog.slack.com
● PEARC19 Student Program Information Sheet: https://docs.google.com/document/d/1TlLB0wyRAjY1DbQ-LhV380squTGG1yG9Urw9utuszA4

Travel from O'hare to the Hotel

From O'hare airport take the CTA Blue Line train to downtown Chicago (~40 minutes). Exit the train at the Clark/Lake station. From the station exit, walk east on Lake Street (1.5 blocks) to Dearborn street. Go north (left) on Dearborn Street (1 block) to Wacker Drive. Go east (right) on Wacker Drive (4+ blocks) and the Hyatt is on the right side. Approximately a 10-minute walk.

Hyatt Regency
151 East Wacker Drive, Chicago, Illinois, United States, 60601
(312) 565-1234

STUDENT PROGRAM ACTIVITIES

Student Program Opening and Welcome

There will be a Student Program and Welcome session on Sunday, July 28th from 5:00 pm until 7:00 pm in the Crystal A.

Bringing together students and chairs of the various student programs to meet and greet. There will be a variety of speakers from students, committee, and invited guests. This gathering will allow the students to ask questions about the conference and gain insight into how they may best maximize their experience at this conference. Appetizers and refreshments will be served.

Event coordinators: Student Program Committee

Student Modeling Challenge

The Student Modeling Challenge is designed to introduce students to the concepts and practice of computational modeling as a method for engaging in scientific analysis. During the challenge, students work in teams to develop a model of a scientific problem from one of a number of different domains including biology, physics, and chemistry. Students prepare for the Modeling Challenge with targeted PEARC19 tutorials, and the primary modeling activity happens the following day. On the final day of PEARC19, the teams present their results in a session open to all attendees.
Specific Activities:

- **Introduction to Python for Scientific Computing** (Monday, July 29, 8:30 am-12:00 pm - Crystal A): Optional tutorial serving as a quick immersion in the basics of the Python programming language and associated packages for scientific computing, including tools used in the Student Modeling Challenge.

- **Student Modeling Challenge** (Tuesday, July 30, 11:00 am-5:00 pm - Comiskey): Students work in teams to develop a model of a scientific problem, each from a number of different domains including biology, physics, and chemistry. Over the course of the day, teams read background information about their problem, identify the questions to be considered, work with a basic starting Python code, and develop a solution by adding complexity. Finally, teams each create a presentation of their work and results throughout the day.

- **Student Modeling Challenge Presentations** (Wednesday, July 31, 1:30 pm - 3:00 pm - Comiskey): Teams present their previous day’s work in a session open to all conference attendees. Each group has an opportunity to be awarded Most Outstanding Student Modeling Challenge Presentation during the next day’s Awards Lunch.

- **Awards Lunch** (Thursday, August 1, 12:00-1:30 pm, Regency AB): The award is given for Most Outstanding Student Modeling Challenge Presentation among other conference awards.

Event coordinator: Aaron Weeden (contact via aweeden@shodor.org or Slack)

Any additional information for students:

The Student Modeling Challenge is intended for undergraduate and graduate students taking part in the Student Program who are interested in learning more about computational modeling. It is only available to students who are part of the Student Program. Students must bring their own laptops to the event and should install Anaconda ahead of time (the Python 3 version available at https://www.anaconda.com/). Students who have participated in the event in past years can participate again. Participants must attend both the Student Modeling Challenge on Tuesday and the Student Modeling Challenge Presentations on Wednesday for the entire duration of each session. Students who are not familiar with Python are strongly encouraged to attend the Python tutorial on Monday.

**Student Posters and Papers**

Student papers and posters provide a platform for students to meet others both in and out of your field during the PEARC19 program as well as a chance to discuss your work in greater detail with conference attendees and exhibitors. Student posters offer a great opportunity to share your research and network with people both inside and out of your field. Enjoy the conversation and consider new angles and ideas related to your research topic. If you have any questions about student papers and posters, please contact us at pearc19-posters@googlegroups.com.

Specific Activities:
**Student Mentor Program**

The aim of the Student Mentor Program is to foster the next generation of scientists and science leaders. With a focus on connecting the mentee to the PEARC19 conference, provide the mentee with networking opportunities during the conference, and allowing the mentee to learn more about Practice & Experience in Advanced Research Computing. The conference mentor’s primary role will be to help guide his/her student through the conference and to share his/her personal experiences in the field of Advanced Research Computing. Mentors are expected to share their advice, help their students select sessions, introduce their student to others, explain research being presented, and be a familiar face at the conference.

Specific Activities:
- **Student - Mentor Dinner:** (Monday, July 29, 6:00-8:00 pm, Regency D)
- **Student-Mentor Lunch:** (Wednesday, July 31, 12:30-1:30 pm, Gallery 5,6,7)

Any additional information for students:

Mentors need to be in touch with mentee through the conference, not just mentor-dinner. If that is not happening, I need to know so I can reach out to the mentor.

**Hackathon**

Join us for two days of hacking with some of the best programmers in the field! The PEARC Student Program is featuring a Hackathon to challenge the future generation of HPC and science gateways professionals. Undergraduate and graduate student teams can compete on gateway projects, learn how to use important tools and methods, and win awesome prizes. The HACK@PEARC is an excellent opportunity to have fun and understand some of the coding challenges within the HPC and Science Gateway communities.

Specific Activities:
- Mentors enter challenge problems Google Form for Project Task/Challenge: [https://forms.gle/YGng2rd2oKQmDJq7A](https://forms.gle/YGng2rd2oKQmDJq7A)
- Webinar for mentors Tuesday, July 9, 2019, 10:00 am eastern [https://zoom.us/j/171480338](https://zoom.us/j/171480338)
PEARC19 Student Program Information Sheet

- Webinar for students and mentors Tuesday, July 23, 2019, 10:00 am eastern [https://zoom.us/j/171480338](https://zoom.us/j/171480338)
- Students and Mentors meet together Sunday, Monday & Tuesday
- Final Presentations Wednesday, July 31, 3:30 pm-5:30 pm.
- Thursday @ PEARC Awards Luncheon Awards given to first and second place teams plus a People’s Choice team award.

Event coordinators: Linda Hayden (contact via haydenl@mindspring.com or Slack) and Je’aime Powell (contact via jeainehp@gmail.com or Slack)

**Student Tutorials**

Practical hands-on experience in research computing through workshops and tutorials in a wide range of areas, including machine learning, data analytics, and scientific programming.

Specific Activities:
The following sessions are recommended for student attendees:

- **Introduction to Python for Scientific Computing** (Monday, July 29, 8:30 am-12:00 pm Crystal A)
  - OR -
  - **Deep Dive into Microsoft’s Azure for Research** (Monday, July 29, 8:30am-12:00 pm - Columbian)

  **NOTE:** Introduction to Python for Scientific Computing is a prerequisite for students attending Student Modeling Contest. However, if a student has already attended Introduction to Python session in the previous years, we recommend them to attend: “Deep Dive into Microsoft’s Azure for Research

- **HPC & ML on Google Cloud Platform** (Monday, July 29, 1:30-5:00 pm Columbian)

  More information on Workshops and Tutorials at PEARC19 can be found here: [https://www.pearc19.pearc.org/workshops](https://www.pearc19.pearc.org/workshops)

Event coordinator: Sarvani Chadalapaka (contact via schadalapaka@ucmerced.edu or Slack)

**Speed Networking**

The Speed Networking session will allow students to meet one-on-one with representatives from the PEARC19 exhibitors and to share their enthusiasm for advanced computing, visualization, data analysis, and research. In this round robin-style event, students move around to the exhibitors’ tables and meet them in two-minute rounds. Bring your resume and your “personal elevator pitch” – we want you to make a good impression!

Specific Activities:
PEARC19 Student Program Information Sheet

- Student/exhibitor Speed Networking Event (Tuesday, July 30, 4:30-6:30 pm in Regency D)

Event coordinator: Ron Payne (contact via rpayne@illinois.edu or Slack)

Additional information:
   Students should bring their resume' and a well-practiced 'personal elevator pitch'. Business dress is expected.

**Student Volunteers**

The Student Volunteer Program is a great way to get a behind the scenes look at conference activities and network with other students who are passionate about advanced research computing. As a student volunteer, you will have an all-access pass to the conference program and tutorials. By helping to support the conference, you will have a unique opportunity to meet and learn from leading researchers, professionals, and educators. Students with a passion for leadership and service are encouraged to apply this exclusive opportunity!

Specific Activities:
   - Student Volunteer Hangout room is located in Stetson BC

Event coordinator: Ken Hackworth (contact via hackwort@psc.edu or Slack)

**Student Campus Champions Program**

The Campus Champions program is a one-of-a-kind “community of practice” around research computing and data. The Student Champions program was formed as part of the Champions overall workforce development program goals, seeking to provide mentoring and professional development opportunities for Student Champions to increase their knowledge and skills and provide a professional network within the advanced cyberinfrastructure/research computing field.

Students with an active Campus Champion willing to serve as a mentor will be eligible to apply. Students interested in learning more about the Student Campus Champions program may visit https://www.xsede.org/community-engagement/campus-champions/student-champions or seek out Marisa Brazil, Champions Coordinator, throughout the week at PEARC19.

Program Contact: Marisa Brazil (contact via brazil@purdue.edu or Slack)

**Students Awards**

Students will have an opportunity to win a Best Student Poster and/or Best Student Paper for their contributed work. Plus, all student accepted submissions are eligible for publication in ACM PEARC19 Conference Proceedings.
Student Awards Include:

Best Student Paper in "Facilitation of Advanced Research Computing" Track
PULSAR: Deploying Network Monitoring and Intrusion Detection for the Science DMZ
Authors: Shivam Trivedi, Lauren Featherstun, Nathan DeMien, Callum Gundlach, Sagar Narayan, Jacob Sharp, Brian Werts, Lipu Wu, Lev Gorenstein, Erik Gough, Xiao Zhu

Best Student Paper in "Machine Learning and Artificial Intelligence" Track
A Novel Pruning Method for Convolutional Neural Networks Based off Identifying Critical Filters
Authors: Mihaela Dimovska, Travis Johnston

Best Student Paper in "Advanced Research Computing Software and Application" Track
Shuffler: A Large Scale Data Management Tool for Machine Learning in Computer Vision
Authors: Evgeny Toropov, Paola A. Buitrago, José Moura

Honorable Mention in "Workforce Development and Diversity" Track
Integrating scientific programming in communities of practice for students in life science
Authors: Alexa M. Salsbury, Anne M. Brown, Justin A. Lemkul

The following two student activities, Advanced Computing for Social Change and AI4GOOD are co-located with this year’s PEARC19 Student Program.

**Advanced Computing for Social Change**
Advanced Computing for Social Change has selected 20 undergraduate students from diverse disciplines and backgrounds who will be working collaboratively at PEARC19 to:

- Learn to apply data analysis and computational thinking to a social challenge
- Experience the latest tools and techniques for exploring data through visualization
- Expand skills in team-based problem solving
- Learn how to communicate ideas more effectively to the general public

Specific Activities:
- ACSC Student Presentations (Wednesday, July 31, 9:00-11:45 am in Stetson E, F, G)

Event coordinator: Rosalia Gomez (contact via rosie@tacc.utexas.edu or Slack)

**AI4GOOD: Horner Room (Hyatt)**
AI4GOOD will enlighten participants about applications for artificial intelligence (AI) that are used for social good. Biomedical advances, economic empowerment strategies, agricultural innovation and quality of life improvements for citizens in underserved regions will be emphasized. Hands-on
training sessions will acquaint participants with a variety of useful AI skills, and our security panel will foster thoughtful discussion about related privacy, ethics and compliance challenges associated with inter-institutional and international research.

Specific Activities:
- Students will learn how machine learning, neural networks, and other AI workflows are used in a variety of scientific domains for social good. A hands-on session by Kang Lee (U-Iowa) will cover basic skills (Python & Jupyter Hub/Notebooks). Students are also encouraged to attend Lee’s 1.5 hour session on Tuesday (it’s a follow-on; no repeats here). Ryan Quick (Proventia Worldwide; of PayPal fame) will teach a second training session on Monday that will cover everything you ever wanted to know about consensus algorithms (but were afraid to ask–lessons learned from DLT/Blockchain). Finally, a cybersecurity panel will explore security, privacy and ethical complexities of international collaborations. A full description can be found here: [http://www.stem-trek.org/2019/06/12/ai4goodpearc19/](http://www.stem-trek.org/2019/06/12/ai4goodpearc19/)

Event coordinators: Elizabeth Leake (contact via itbeth2@gmail.com or Slack) and Alana Romanella (contact via aromanel@vt.edu or Slack)

Additional information on the AI4GOOD program can be found at: [http://www.stem-trek.org/2019/06/12/ai4goodpearc19/](http://www.stem-trek.org/2019/06/12/ai4goodpearc19/)

**Further Information and Questions**

For further information or questions about the Student Program, please contact Student Program Chair **Semir Sarajlic** at semir.sarajlic@oit.gatech.edu.