Percy Adams Jr
ECSU 4 Week Coding Institute
PEARC17 Report
July 14, 2017

PEARC17 Conference

It's conference time! What conference? The 2017 conference on Practice & Experience in Advanced Research Computing (PEARC17). Located in the beautiful city of New Orleans, Louisiana, PEARC17's dates took place from July 9-13, 2017. The theme of the conference this year was Sustainability, Success, and Impact, which reflects key objectives for those who manage, develop, and use advanced research computing throughout the nation and the world: sustainability of the infrastructure environment; measuring and ensuring success for organizations that provide and use advanced research computing; and impact of the technologies on the workforce and on science and scholarship. A theme that is also relevant or the inauguration of the PEARC conference series and a strive to create a self-sustaining event with continued impact. Organizations such as the Advancing Research Computing on Campuses: Best Practices Workshop (ARCC), XSEDE, the Science Gateways Community Institute, the Campus Research Computing (CaRC) Consortium, the ACI-REF consortium, the Blue Waters project, ESnet, Open Science Grid, Compute Canada, the EGI Foundation, the Coalition for Academic Scientific Computation (CASC), and Internet2 were the support system for the conference. Presumably, a conference with plenty of interesting topics and important people to speak upon.

As we arrived at the conference on July 9th, after our arguably restless flight, my colleagues and I were greeted by Ms. Alana Romanella, an assistant director of the conference from Blacksburg, Virginia, who gave each one of us our corresponding lanyards with all our information attached. We then scurried to the student welcome event which welcomed student attendees to the conference with this mixer, ice breaker session, and cybersecurity talk. Some other schools that were represented were as followed: FAMU, UC San Diego, Slippery Rock University, William & Mary, Indiana University, and many more. During the welcome event, Special Agents Tracey Lin and Tracie Smith from the FBI Cyber Squad in New Orleans gave a talk about cybersecurity, and a local police officer gave a short briefing about safety in New Orleans." Always keep your wallet in your front pocket, and don't go down dark allies," are two quotes that I recall from the briefing. However, this is just the beginning of this information indulged conference.

On July 10th, my colleagues and I attended a tutorial, Introduction to Python, that was introduced by three knowledgeable people. Katharine Cahill, Antonio Gomez-Iglesias, and Steven Lantz were all speakers at this event. This tutorial was a quick engagement in the basics of the Python programming language, including all the tools that would be needed to participate in the PEARC17 Student Modeling Day on July 11th. Topics discussed were variables, types, operators, input/output, control flow, functions, classes, lists, libraries, plotting, data files, and Jupyter notebooks. The tutorial was intended for Python beginners, so hands-on experience was strongly emphasized. For us to participate fully in exercises, we had download and install the Anaconda Python 2.7 package prior to the tutorial. After that, I attended the XSEDE New User Tutorial: Using Science Gateways, where I did volunteer work. The speakers at this event were Marlon Pierce, Mark Miller, Suresh Marru, and Amit Majumdar. Later that day, as a part of the student program, we were all required to meet with our mentors for a student-mentor dinner. Alan Craig, of the Institute for Computing in Humanities, Arts, and Social Science (I-CHASS), was the mentor that was assigned to me. A man with a deep background in virtual reality, and

augmented reality, who gave me an abundance of useful information throughout the entire conference. During the luncheon, Anthony R. Howard, a Dell representative, presented some information about Dell and few of their most interesting projects. Still, the conference was young, and there were many more events to come.

July 11th was a busy day for us students as we had a six-hour program to attend! This event, Student Modeling Day, was a terrific opportunity for us to work in teams to understand a model and its behavior, simulate a range of conditions, write and test the computer codes in Python that were needed to solve real-world problems, improve the user interface of the codes, and validate the codes against real data or different models. This was the most interesting activity of the conference to me, because we were put in groups with random people and we had to use our teamwork skills to come up with answers, as well as make a presentation of our answers on the models given. During this event, I networked with several people and enjoyed the attacking the tasks at hand with my fellow group members. My group members were the following: Temilola Aderibigbe of FAMU, Jacob Harless of William & Mary, Zachariah Miller of Slippery Rock University, Esther Ryu of UC San Diego, and Grace Lo of UC San Diego. After Student Modeling Day, we were all required to attend the Poster Reception where we got the chance to speak with poster presenters about their efforts to improve and enhanced research computing. Judging of the posters also took place, and we had to vote on which poster was the best, which concluded the workflow of the day.'

On July 12th, to begin the day, Alan Craig and ate lunch together at the student-mentor lunch. We continued to do discuss future studies and plans. Following the lunch, we went to go get Mr. Craig's android tablet so he could show me some projects that he has already completed. One of the primary developments that he showed me was an augmented reality application made for android devices. The app displayed a molecule, from the databank that was implemented through code on the software side of the application, which could only be seen when I used a cellular devices camera. After the student-mentor session, we were entitled to attend the Speed Networking session where students met with agencies such as, Intel, Seagate, Lenovo, Dell, Starfish, and NVIDIA. There was three minutes per consultation between each agency, and business were exchanged. Now, as the end of the conference neared there were a few more sessions that I had to attend.

Finally, on July 13th, I started the day with some volunteer work. I attended the "A Platform for Computationally Advanced Collaborative AgroInformatics Data Discovery and Analysis," tutorial. The International Agroinformatics Alliance (IAA) is a coalition of public and private institutions that are cooperating to develop a platform for computationally advanced collaborative analysis of agricultural data. By combining large agricultural data sets with advanced analysis techniques, IAA seeks to catalyze agricultural research, leading to improved agricultural productivity and stability. IAA has constructed a platform that combines Jupyterhub web notebooks for interactive data analysis, relational databases for storage of crop genetic and geospatial data, and the Globus file transfer system for efficient data transfer and authentication. The platform uses a data permissions system that allows users to share data with collaborators. In this session, I was responsible for keeping a head count of how many people attended. Andrew Gustafson, Michael Milligan, and Tom Prather were speakers at this tutorial. Shortly after the volunteer work, I attended the Student Modeling Day Presentations, where the group and I had to present the presentation that we work on during Modeling Day.

To conclude the conference, we closed out the PEARC17 with a plated luncheon and presentation of awards for best student paper and poster, and best visualization showcase entry.

The chairman of PEARC17 gave his lasting words about the conference and encouraged everyone to attend the PEARC18 conference in Pittsburgh, PA. All in all, I learned many new skills, and techniques to help tone the skills that I already I have. Also, I networked with many individuals whom I feel will have great support for me in the future. I would to thank Dr. Hayden for the opportunity and I hope to attend PEARC18 next year!