LaQuandria Murry

Travel Report on PEARC 2018

This has been an exciting hard-working week for me and my colleagues. July 22-27, 2018, I attended the PEARC conference in Pittsburgh, Pennsylvania. PEARC stands for Practice and Experience in Advanced Research Computing. Each day at the conference, I got to learn new things and I participated in many events. I was assigned a mentor and I had to have lunch/dinner with him to communicate about mostly everything that came to our mind. Even though the internet at the hotel was very bad, everyone still found a way to make sure we all got information throughout the entire week Even though the conference ended on Thursday, I still had to stay because I attend the SGCI hackathon. In this paper, I will briefly inform you about each day at the conference and about the hackathon.

On the first day, Sunday July 22nd, we arrived at the Wyndham hotel in Pittsburgh, PA. We had to register for the conference and with snacks given, we had two speakers. The first speaker was an FBI agent and she shared with us how FBI and STEM related areas can be joined together. These specialized career paths can help develop and deploy advanced technologies to support FBI operations. She stated, "At first I went to college for computer science but somehow I ended up switching my major to dealing with law enforcement." Some careers in FBI related to STEM can include: Computer Scientists, Information Technology Specialists, Forensic Biologists, Cryptanalysts, and more. The second speaker, Michael Becich, is a professor at the University of Pittsburgh School of Medicine in the department of Biomedical Informatics. He informed us about the role of artificial intelligence enabling supercomputing in Biomedical Informatics Computational Pathology. He basically told us how supercomputers play an important role in his field and how he hires people who deal with supercomputing. He stated, "I don't know anything about coding or supercomputing, so why not hire the people who do?" With computational pathology, there are diagnosis that incorporates multiple sources data. There's so much data that they need supercomputers.

On the second day, Monday July 23rd, I was a student volunteer. As I student volunteer, I had to help attendees find rooms, help the speaker get organized before and after speaking, take up evaluations for the workshops, etc. On the volunteer schedule, I had to attend a tutorial entitled Intro to MPI using IPT. The speakers were Lars Koesterke and Ritu Arora from TACC. IPT, Interactive Parallelization Tool, main purpose is to aid in parallel programming. Mr. Koesterke stated, "If you know what to parallelize and where, IPT can help you with the syntax." IPT helps with feeling burdened with the syntax of MPI, OpenMP, CUDA, and more. I had to help them pass out forms and make sure everyone who participated in the tutorial sign in. Also, as a student volunteer, I had to keep a head count of the people who participated in the tutorial before and after it was over. After this tutorial I attend a workshop that was with Python 102 for scientific computing and data analysis. The speakers were Ashwin Srinath and Jeff Denton, but unfortunately, I couldn't stay for the workshop because y computer was disabled by Microsoft. My final task for the day was to attend the Student-Mentor dinner. Before the conference, I had already communicated with my mentor, Guillermo Avendano Franco. He works for West Virginia University as a Scientific Advisor for High Performance Computing. He also conducts research and software development in Condensed Matter Physics. We shared with each other our

background history, future plans, things about the conference, etc. it was nice to talk to someone about education and get their input and advice about my future.

On the third day, Tuesday July 24th, I had to attend the student modeling challenge. I was assigned in a group with three other individuals and we had to choose which topic we would like to do our research on. We chose to do our project on Malaria. We had to create a mathematical model that will help public health professionals to have a better understanding of the disease transmission and to identify effective measures for the prevention and elimination of the disease. During lunch, we had a speaker, Sorin Matei form Purdue University. He informed us about ethical reasoning and about the project he and a team did. The project was getting data from a public park that records all the people and animals in the park. He stated, "There were several things caught on camera, like animal to animal interaction and human to human interaction such as stealing and sunbathing." He wanted to know did with think that project was ethical, and, in my opinion, it was not because they did not get consent from the people who are being recorded.

On the fourth day, Wednesday July 25th, I had to attend the Student-Mentor lunch. This would be the last time students got to talk to their mentors because the conference was over the next day. My mentor ask how I felled about the hackathon and did I need any help with it. He was very friendly and advised me to keep in touch with him after the conference. After the lunch, me and my group members had to present our model and PowerPoint. We caught the audience attention by first giving background about malaria and how devasting it can be. They were very proud of how we worked together in such a short amount of time. After the presentation, my final task was to attend Science Gateways and You. There were five gateway panelists present: Rob Garner from the University of Chicago, who works with SGCI EDS, Thomas Hauser from the University of Colorado, who works with the SGCI Bootcamp, Dave Hudak from Ohio Supercomputer Center, Eric Shook from the University of Minnesota, who works with ECSS and SGCI cybersecurity, and Nathan Wilson from Sanford, who works with ECSS. They informed us more about Science Gateways and different things dealing with their gateway.

On the fifth day, Thursday July 26th, was the last day of the PEARC conference. We ended the conference by having and awards luncheon. Everyone who participated in the conference, the speakers, volunteers, etc. were given thanks. Many awards were given such as: the best poster and oral presentation award and the best student poster and oral presentation award. We were also informed about PEARC 2019 that will be held in Chicago, Illinois. Later that day it was time to register and began the hackathon. My group and I choose the work with the SimCCS gateway that helps find solutions for greenhouse gas emissions and named ourselves the FantasticSIM4. We had to develop a wed-based mapping functionality that included adding and editing layers of georeferenced data. Our mentor was Kevin Elliot, who was not there physically but remotely, helped us with our project. First, we used leaflet to learn how to create a web-based map. Then, we used those resources to find out how to plot points on the map. Once the plots were added we learned how to create some type of graphing lines (sinks) on the map. After, we figured out how to access the data file given to us and used it to be called upon by the user once they clicked on a data point on the map.

On the sixth day, Friday July 27th, I was still in the hackathon competition. They made sure we were well feed and we had many breaks like chicken and waffles at 3am.We also

participated in small group competitions doing the hackathon. We had to make group handshakes, get on Twitter and post/ say things that included the hackathon, and we had some hands-on games made up by Dr. Hayden. The competition was over around 4:00 pm and all the groups had to present their projects on a PowerPoint with their mentors. Later that day different awards were given, and my group won the best group handshake award. Everyone got a certificate for participating in the hackathon. After that we were able to go to our rooms to get rest or explore the city before departing.

On Saturday July 28th, we departed from the hotel and returned to Elizabeth City. In conclusion, I am very grateful I got to attend the PEARC conference and the SGCI hackathon. The conference gave me a chance to be able to work with strangers and become less nervous around people. The hackathon taught us how to work as a team in a short amount of time. I look forward to participating in the PEARC conference next year in Chicago, IL.