

Senate Computing and Information Technology Committee

December 13, 2019 -- 10:00AM

Room 717 CL

Attending: Dimitriy Babichenko, Gosia Fort, Jay Graham, Daniel Gruen, Arif Jamal, Jong Jeong, Marty Levine, Ralph Roskies, Michael Spring, Albert Tanjaya, Steve Wisniewski

Approval of the Minutes: Minutes from November 22, 2019 meeting were approved as mailed.

New Business:

- Research Computing Report (December meeting)
- Foreign Student Access to Research Computing Resources(Roskies)

Chair's Matters (Michael Spring)

- Faculty Access to university phone numbers is a matter we should look at. Faculty in several departments have given up phones to save money. The question is whether the University should provide a low-cost option that links university numbers to an individual's cell phone. There are other alternatives that are emerging. Dimitry Babichenko uses Skype for business or google hangouts. Students don't like to phone call anyway. Slack is used to create channels attached to their email address. Slack acts like a text messaging service. It seems there are numerous alternatives already in use. There was an extended discussion of this issue.
- Data analytics and accessibility continues as an issue that may require some Senate oversight and the question is whether SCITC is one of the places where that should occur.
- Azure and AWS availability as a university wide service continues to develop. We need to keep up to date on how it is working.
- The transition to the new LMS – Canvas continues to progress and there is every indication that the transition is going smoothly – see report below.

CIO Report (Jay Graham for Mark Henderson)

Jay Graham reported on the transition from Blackboard to Canvas. Most things are going across seamlessly. The only thing that does not come across automatically are student projects. Basically, students products do not automatically migrate. There are several potential solutions and CSSD is looking to see which solution will work best. Dimitry continues to use canvas and he and students are seeing things work well. Ken Doty asked if canvas is tied into Panopto. Has it been used by anybody? Canvas has a built-in facility called big blue button. This may make it possible to do online lectures more easily. This will raise several issues.

Azure and AWS are moving forward. CSSD is working with faculty and departments. Azure is up and running AWS is in the last stages of being brought up. Roskies and CSSD met with a group of faculty and talked about the project and what is moving forward. It is very difficult to get a sense of how much it

will cost for various projects. One of the goals of the effort will be to simplify costs and participation paths

Dimitry asked if anyone had used Digital Ocean. CSSD found that there were some security issues related to Digital Ocean and its use is not being encouraged.

Research Computing

Roskies raised the issue of use of research computing facilities raised by export controls. There are several countries, such as Iran, that present problems. If a faculty member at Pitt is from Iran, they can use the facilities at Pitt, but if they go home to Iran and try to access the facilities, they are in violation of export controls. Basically, it matters where you are when you access the facilities. Spring agreed to invite Alan DiPalma to come to meet with the committee to talk about export controls.

Roskies indicated that he would send out an annual report to the committee on what he has done. (see attached.)

Old Business

Dimitry is making progress on both Mobile Application deployment and game hosting/publishing platform. He is working on producing a unified set of guidelines and discussion.

Spring Term Meeting Schedule:

- Fri, Jan 24, 10:00AM
- Fri, Feb 17, 10:00AM
- Thurs, Mar 19, 1:30PM
- Thurs, Apr 16, 1:30PM

The meeting was adjourned at 11:00am.

Draft minutes submitted for review by:

Michael Spring
January 10, 2019

Center for Research Computing: Research of Impact 2018-2019

Pitt's Center for Research Computing this past year helped save a life, measure biodiversity, design spacecraft computers, tackle climate change, and recruit outstanding faculty.

- **Saving a life.** Pitt biologist Graham Hatfull worked with CRC resources in sequencing three phages – viruses that attack bacteria – used to successfully treat a teenage cystic fibrosis patient on the verge of dying from a rare bacterial infection. The story went viral, with coverage in dozens of news outlets in the United States and Europe. Hatfull's team altered two genes to make the phages express the aggressive characteristics needed to attack the bacteria; CRC resources helped Hatfull's team identify those two genes. Hatfull explains. "We need the RNA sequence analysis supported at the CRC to make sense of the data. Without it we can't compare which genes are responsible for which particular gene expression."
- **Measuring biodiversity.** Biologist Justin Kitzes partners with Barry Moore, a CRC Research Assistant Professor, to develop an innovative machine learning program to document biodiversity based recorded bird calls. The project has received a prestigious AI for Earth Innovation grant from Microsoft and National Geographic.
- **Designing spacecraft computers.** Engineering professor Matthew Barry collaborated with NASA using CRC resources to model components of a supercomputer launched May 1, 2019 on a mission on the International Space Station. He is now collaborating with the Jet Propulsion Laboratory using CRC resources in modeling components of a craft for a mission to Jupiter.
- **Tackling climate change.** Finding alternatives to carbon-based fuels is a national and global priority. CRC collaborates with several faculty researchers developing alternative fuels, materials for advanced fuel cells and technologies for carbon capture and transformation. They are creating methods to not only capture CO₂ exhaust, but to transform CO₂ into valuable chemicals, creating new economic incentives for industry.
- **Recruiting outstanding prospective faculty.** CRC played a significant role in helping Pitt recruit highly sought-after astrophysicist Evan Schneider from Princeton University. Schneider required considerable and specific computing resources. She was delighted with CRC's capabilities and we look forward to working with her.

CRC enables work of impact in medicine, physical science, engineering, social sciences, and humanities, growing the next generation of researchers who draw on advanced computing to inspire insights and breakthroughs.

Supporting, Enabling

- CRC enabled work on more than 133 grants, supported by over \$81 million in outside funding.
- CRC supports 300 faculty accounts representing 798 individual users, up 27% over last year.
- CRC's usage on our primary system from July-December 2018 was up by 75% over last year.

Diversity, Access

- CRC supported users in 54 departments, schools, interdisciplinary programs, and centers.
- CRC developed services which made advanced computing accessible in a familiar desktop environment to researchers without computing experience

Investing, Growing

- CRC recruited faculty to invest \$127,353 in grant or startup funds to buy equipment that became part of CRC's shared resources, bringing the total faculty investment since 2016 to \$215,000.
- CRC's Total Hardware Resources in June 2019:
 - 8,268 CPU cores
 - 130 GPU graphics cards
 - 2.5 PB storage

Impact

- We know of more than 112 peer-reviewed journal articles, conference presentations, and book chapters, many in prestigious high-impact journals such as Nature Medicine, Journal of the American Chemical Society, and JAMA Oncology that depended on CRC resources.