

Computing Workshop Synopsis

Graduate students and postdocs spend a significant amount of time developing software and analyzing data using specific data analysis software. Software development and data analysis require knowledge of high level programming languages and interfacing with new operating systems. Several users have expressed interest in having a formal introduction to the data analysis tools and techniques used at Jefferson Lab to reduce the initial learning time required to develop these skills. In previous years, Software Carpentry was hired to lead workshops on UNIX, Python, and high throughput/parallel computing. In coordination with GSPDA and UGBOD, the JLab Computing Center held a Computing Workshop for graduate students and postdocs in the previous two years. Both workshops have been well attended. The topics covered included: command shell, GitHub, JLab computing, computing on the Open Science Grid, Python, and ROOT.

Computing Workshop Executive Summary

The computing workshop will utilize multiple instructors from Jefferson Lab and nearby Universities in order to provide a three-day comprehensive workshop on computing in UNIX, Python, ROOT, and parallel computing. Food for the workshop is matched at 50% from JLab as per Bob Mckeown.

The first Computing Workshop took place from May 17th – May 19th, 2017. There were 41 students officially registered (48 seats in total available), and we allowed students who were not registered but wanted to attend to sit in on the workshop provided they did not take the seat of someone who did register. The time of year that the workshop was held was beneficial to the many new students just arriving to begin their summer research. The Unix section was most useful to new students. The GitHub section was received well by all. The majority of students were signing up specifically for the Python modules. This was taught well for beginners and a more advanced version is desirable for users who are already familiar with programming in C++ and Java. In the post workshop surveys, students are already expressing a desire for more lectures at a higher level.

Survey results from the computing workshop are available here:

RESULTS PRE-WORKSHOP: <https://www.surveymonkey.com/results/SM-RTK6G3VH/>

RESULTS POST-WORKSHOP: <https://www.surveymonkey.com/results/SM-FDWJB3VH/>

The computing program guide can be found here: <https://swc-osg-workshop.github.io/2017-05-17-JLAB/>

The second Computing Workshop took place from May 21st – May 23rd, 2018. There were 30 participants registered, which was the maximum due to room size restrictions.

We believe the time of year this workshop is held is best for students. It is after finals and usually around when new graduate students first report to Jefferson Lab to begin their research. From verbal feedback, the Linux introduction was too basic and would need to be at a higher level. The GitHub and Jupyter notebook tutorials were very well received. There was also an introductory ROOT workshop lead by Ole Hansen. He has offered to also lead an intermediate level workshop. The schedule for the 2018 computing workshop can be found here: <https://kevin-vilbig.github.io/2018-05-21-JLAB/>

Computing Workshop Evaluation Plan

Computing Workshop attendees will answer questions about their current skill level and objectives when registering for the workshop. During the workshop, attendees will work through guided, practical exercises so that they will have codes accessible for reference at the end of the workshop that they can use to build on in their own computing. After the workshop, attendees will be asked to fill out a survey to see if they met their expectations and objectives for the workshop and seeking suggestions for improving these software workshops. As we are planning for three workshops, the feedback we obtain from each will be important to the success and planning of future workshops. The evaluations will be maintained by the Graduate Students and Post Docs Association for evaluation and planning purposes.

Computing Workshop Budget Justification

The computing workshop requires Software Carpentry instructors, and the associated materials, which is \$2500. The travel support necessary for the instructors, which includes their stay at the SURA residency facility, amounts to \$900. Refreshments for the three days that will be provided to both the participants, volunteers, and participants amounts to \$600. Thus, we are requesting an amount of \$4000 in order to support the computing workshop.