EICUG Software Working Group

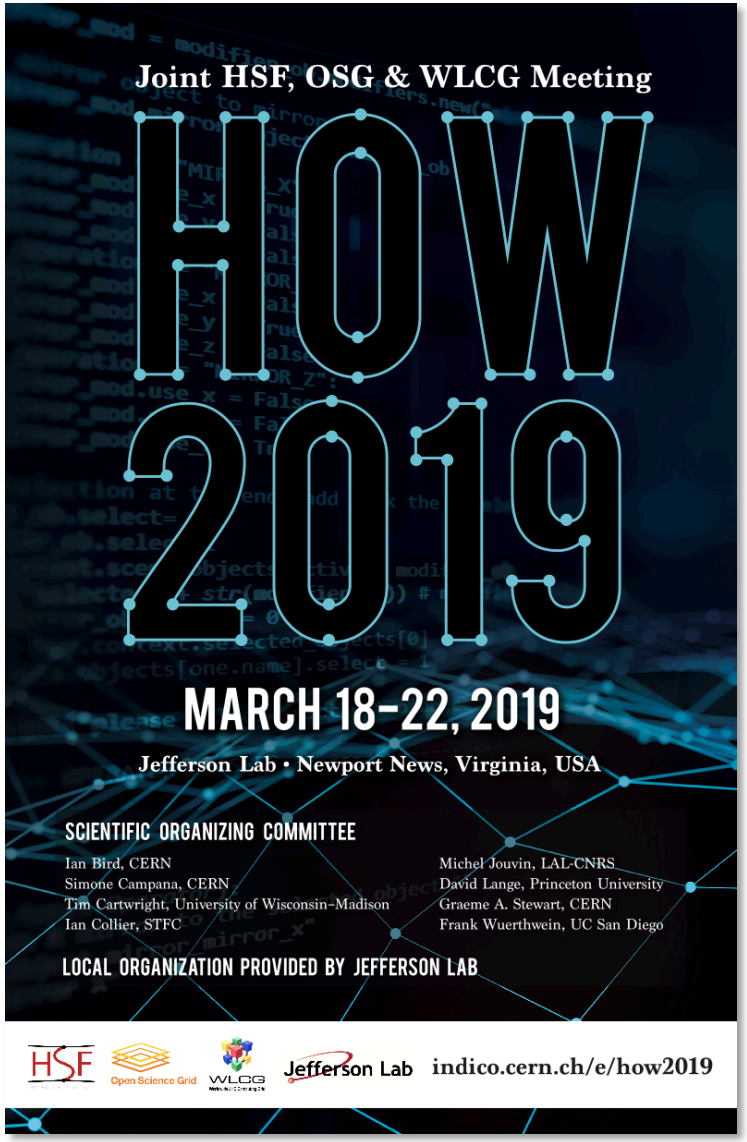
HOW 2019

EIC Software meeting

Discussion on our approach for making physics and detector simulations for the EIC more accessible to the EICUG as a whole (D. Romanov)

Markus Diefenthaler

HOW 2019



HSF-OSG-WLCG Workshop at Jefferson Lab, HOW2019

03 Apr 2019 by Graeme Stewart

The annual HEP Software Foundation workshop happened in Jefferson Laboratory from the 18th to 22nd of March. This year we had the opportunity to join forces again with the Worldwide LHC Computing Grid (WLCG) community and, in addition, the US Open Science Grid (OSG). Almost 250 scientists, from LHC, HEP and non-HEP communities joined the meeting.

On the first day we opened the meeting with an excellent introduction to JLab from lab director Stuart Henderson and an overview of JLab computing and software from Raffaella De Vita. That was followed by plenary talks from the LHC experiments, other HEP experiments and many non HEP communities, including the next generation US nuclear physics facility, the Electron-Ion Collider. That set the stage for the computing and software challenges we face in data intensive science for the next decade.

Workshop Participants. Photo © DOE Jefferson Laboratory

The theme of working more closely with other sciences was underlined by the discussion on the *Evolution of the WLCG Collaboration* on Monday afternoon. Sharing an infrastructure for big data sciences, building on what we know and already have, received wide support, but the details of how to manage this, for all communities, need to be worked out.

Common sessions for HSF and WLCG on Tuesday looked at the evolution of technology, based on the impressive work done by the HEPIX Benchmarking WG. Processors, storage and networking are all changing and HEP is having to adapt to that, as well as making more and more use of HPC facilities. As HPCs equip themselves massively with compute accelerators this led very naturally to the afternoon HSF session on *Software for Accelerators*. These devices are very different from CPUs, for which we have written most of our software for up to now, and pose serious challenges for developers. Integration with CPU frameworks and finding the best way to maintain code for a heterogeneous future were among the topics where the HSF will continue to work to identify prototypes and share best practice. ALICE showed how they were using GPUs to achieve the required throughput in Run 3. LHCb, who also face the stiff test of increased throughput in Run 3, is actively doing R&D work on GPUs and presented encouraging results.

Summary

Plan for EIC Software Meeting

Goals

- Tutorials to actively learn about status of the EIC Software and to plan our next steps

- Discuss possible common projects and collaboration with other software initiatives :
  - Geant4 International Collaboration
  - HEP Software Foundation (HSF)
  - ROOT team at CERN