IRIS-HEP Training, Education and Outreach (TEO)

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Next Steps
Goals

- IRIS-HEP - intellectual hub - software/computing challenges of HL-LHC era
- Building the necessary software and solving related challenging problems requires a workforce
  - HEP domain knowledge + advanced software skills+ strong connections to other related disciplines
  - Need investment to grow this workforce
- Training is critical to perpetuate the learning cycle in an organized way and efficiently
- Outreach the under(un)served community to develop wider interest
Impact Role

- Coordinate training related activities

- Assemble and communicate coherent vision of a training program for HEP community - graduate students, postdocs, senior researchers in software and computing

- Develop a process with the community for implementing and updating this vision over time

- Build a “federated” view over the possible training opportunities
  - Experiments, labs, dedicated summer schools and other sources (HEP and non-HEP)

- Bring together the people organizing the training activities to articulate the vision, develop plans to enhance the sustainability, reusability and impact of the training activities

- Work with the community to build an assessment framework for the ensemble of activities that allows us to measure the impact of our activities
Current Training “Landscape”

- **Training Efforts** - CMS, ATLAS, ALICE, LHCb, Belle II, Experiments (Neutrino/Muon/Asrto)@FNAL, VIRGO/LIGO
- **Non-experiment (2)** - CoDaS-HEP, Bertinoro School of Computing, CERN School of Computing, GridKa, OSG User School
- **Data Science Courses** (e.g. Univ. of Padova)
- Have people involved in training communities together for a “Integrated” Software Training plans

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Tier 2

- **HEP domain training**
- **Experiment software training**

Tier 3

- Mentors
- CoDaS-HEP (US)
- GridKa school (DE)
- INFN ESC school (IT)

Advanced Ph.D. Students, Postdocs, Senior

Advanced ROOT

Geant4

CERN school of computing

MLHEP school (EU)

Industry (Intel, NVIDIA, ...)

CMSDAS

ATLAS tutorial series

LHCb starter kit

ROOT Data

Developer training

Tier 2
Near Term Plan

- Build starting point for newcomers to HEP
- Start introductory level Carpentry
  - Build Assemble an introductory HEP curriculum
    - Plan in works to organize introductory level Carpentry (scale it)
      - at the LPC, Fermilab in March
  - Target audience - CMS/ATLAS to begin
  - Invite LHCb/ALICE to showcase Starterkit
- Survey in preparation to assess training needs -
  - now survey is done, > 350 responses, will summarize and present...
NSF Grants to Support the Vision


- Funding for Training Workshops/Participant Support/Brain Storming Session


- Funding for Training Activities/Participant Support
- Fellowships to work on Software and Computing Projects
- Job Opportunities
- General public announcement mailing list for IRIS-HEP events, talks, meetings, workshops, opportunities for training and job opportunities (subscribe to) [announcements@iris-hep.org](mailto:announcements@iris-hep.org)

HSF (HEP Software foundation) - [https://hepsoftwarefoundation.org](https://hepsoftwarefoundation.org)
- General Information about HSF (subscribe to): [hsf-forum@googlegroups.com](mailto:hsf-forum@googlegroups.com)
- Discussions and activities in the HEP Software Foundation mailing lists can be found here (General and Dedicated Forums): [https://hepsoftwarefoundation.org/forums.html](https://hepsoftwarefoundation.org/forums.html)
- You can contribute [https://hepsoftwarefoundation.org/cwp/cwp-working-groups.html](https://hepsoftwarefoundation.org/cwp/cwp-working-groups.html)
- HSF Events/Workshops - [https://hepsoftwarefoundation.org/events.html](https://hepsoftwarefoundation.org/events.html)

FIRST-HEP website [http://first-hep.org](http://first-hep.org)
- Funding for participants and lecturer support for Training