IRIS-HEP area SSC

Sudhir Malik (Univ. of Puerto Rico Mayaguez)
Peter Elmer (Princeton University)

Mailing lists
hsf-training-wg@googlegroups.com
full-team@iris-hep.org

IRIS-HEP Steering Board Meeting - 20 May 2019
Training Vision Pyramid

HEP Software Training

- Mentors
  - Tier 3: Advanced Ph.D. Students, Postdocs, Senior

Developer training

- Tier 2: Early Ph.D. Students, New Researchers

HEP domain training

- Tier 1: Early Ph.D. Students

University courses

Experiment software training

- Tier 3: Advanced Ph.D. Students, Postdocs, Senior

Carpentries workshops tailored for HEP

Tier 2

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

Tier 1

- CMSDAS
- ATLAS tutorial series
- LHCb starter kit

Programming

- Advanced ROOT
- Geant4

Data science

C++

- CERN school of computing
- MLHEP school (EU)
- Industry (Intel, NVIDIA, ...)

- ROOT Data
- Python
- Git
- Unix

- Python
- Git
- Unix
## Milestones and Deliverables: Work Done

<table>
<thead>
<tr>
<th>Type</th>
<th>Time</th>
<th>Description</th>
<th>WBS task</th>
<th>Risks</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3-9</td>
<td>Co-organize (with FIRST-HEP) introductory level Software Carpentry (bash/git/python) workshop at Fermilab combined with topical discussion on interoperability of ROOT for advance PhD students</td>
<td>5.1</td>
<td>M.5.1, M.5.5</td>
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<tr>
<td>M</td>
<td>3-9</td>
<td>Introductory level Carpenter session for CMS/ATLAS at CERN</td>
<td>5.1</td>
<td></td>
<td>M.5.1, M.5.5</td>
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<tr>
<td>M</td>
<td>0-6</td>
<td>Invite LHCb/ALICE to showcase Starterkit on pre and first analysis steps</td>
<td>5.1</td>
<td>R5.1, M.5.6</td>
<td></td>
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<tr>
<td>D</td>
<td>6-9</td>
<td>Carpentries curriculum for HEP for newcomers at a LHC/ FNAL Experiments</td>
<td>5.6</td>
<td>M.5.1, M.5.3, M.5.6</td>
<td></td>
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<tr>
<td>M</td>
<td>6-9</td>
<td>Post-training co-survey with FIRST-HEP on better assessing training needs</td>
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<td></td>
<td>M.5.7</td>
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<tr>
<td>M</td>
<td>6-9</td>
<td>Retune next Carpentry workshop benefiting from above participant survey</td>
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<tr>
<td>M</td>
<td>9-12</td>
<td>Organize and run CoDaS-HEP School (Parallel Programming, ML, Big Data Tools) at Princeton</td>
<td>5.1</td>
<td>R5.2, M.5</td>
<td></td>
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<tr>
<td>M</td>
<td>6-9</td>
<td>First brainstorming workshop in conjunction with CoDaS-HEP school to re-visit software and data challenges and correspondingly design future training material and workshops</td>
<td>5.3</td>
<td>R5.1, M.5</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>6-9</td>
<td>Summer Outreach Workshop(s) on building software skills for HEP</td>
<td>5.3</td>
<td>R5.1, M.5</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>6-9</td>
<td>Second HEP Software Carpentry Workshop at a US university/Lab</td>
<td>5.3</td>
<td>R5.1, M.5.5</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>9-12</td>
<td>Carpentries curriculum for HEP using best practices for HEP</td>
<td>5.6</td>
<td>R5.1, R5.2</td>
<td>M.5.5</td>
</tr>
<tr>
<td>M</td>
<td>12-15</td>
<td>Co-organize (with FIRST-HEP) boot camp on domain specific topics like advanced ROOT, Geant4 and other HEP-specific tools</td>
<td>5.3</td>
<td>R5.1, M.5.2, M.5.4</td>
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<tr>
<td>M</td>
<td>12-15</td>
<td>First Data Carpentry Workshop catered to HEP needs (expert input from CoDaS-HEP tutors and IRIS-HEP Fellows and field experts)</td>
<td>5.3</td>
<td>R5.2, M.5.1, M.5.5</td>
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<tr>
<td>D</td>
<td>12-15</td>
<td>Software and Data Carpentry Workshops for HEP community by IRIS-HEP program, IRIS-HEP Fellows form a community of tutors for workshops and future domain specific topics</td>
<td>5.3, 5.6</td>
<td>R5.1, R5.2, M.5.3, M.5.5</td>
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<tr>
<td>M</td>
<td>18-21</td>
<td>Summer Outreach Workshop(s) on building software and data analytical skills at US universities supported by IRIS-Undergrad Fellows and IRIS-Fellows in their own community, “Hack week” as a model for data science education and collaboration</td>
<td>5.3</td>
<td>R5.1, M.5.3, M.5.5</td>
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<tr>
<td>M</td>
<td>18-21</td>
<td>Organize and run CoDaS-HEP at Princeton</td>
<td>5.3</td>
<td>R5.1, R3.2, M.5.2, M.5.5</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>18-21</td>
<td>Second brainstorming workshop in conjunction with CoDaS-HEP school to re-visit software and data challenges preparedness in terms of training material</td>
<td>5.3</td>
<td>R5.1, M.5.7</td>
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**Software Carpentry Workshop (1-2 April 2019, Fermilab)**
https://indico.fnal.gov/event/20233/
Survey: pre-workshop: https://www.surveymonkey.com/results/SM-X7BFPFY3V/

**CoDaS-HEP (22-26 July, 2019, Princeton)**
http://codas-hep.org

**HEP Software/Computing Training Survey**
LINK to the survey

**An introduction to programming for STEM teachers (3-4 June, UPRM)**
https://indico.cern.ch/event/817539/

**Machine Learning Workshop/Hackathon (24-26 April 2019, UPRM)**
https://indico.cern.ch/event/809812/
More Carpentries Workshops at HEP Labs

First-HEP/ATLAS Training (Argonne)

- US-ATLAS June meeting @ Argonne - 9-14 June, training on 10 June
- Co-organizers: Stephanie Majewski, Tim Andeen, Jahred Adelman, Verena Martinez Outschoorn, Jeremy Love
- David Yakobovitch and Jim Pivarski (Git and Python) for 1 day training on 10 June
- https://indico.cern.ch/event/811577/overview (ATLAS-protected)

First-HEP/ATLAS Training (LBNL)

- ATLAS August (19-23) meeting (organizer Sam Meehan) @ LBNL
- Links https://indico.cern.ch/event/816946/
- Want to integrate to carpentries to build sustainable practice
- Take from carpentry
  - Carpentries or us using Carpentries curriculum?
  - Build systems: Henry Schreiber - Compressed version of what already exists
    - https://cliutils.gitlab.io/modern-cmake/
  - Testing and CI from Katy Huff- http://katyhuff.github.io/python-testing/
  - Containers module: Matthew Feickert - https://github.com/matthewfeickert/Intro-to-Docker
Activities in Works - 2

- Blueprint meeting in early Fall
- Plan event at CERN
  - Invite current LHCb to showcase StarterKit/ImpactKit
  - Software Carpentries at CERN
- Carpentries instructor training this fall
- After above series of activities we can be in good shape for the deliverable:

| D | 6-9 | Carpentries curriculum for HEP for newcomers at a LHC/ FNAL Experiments | 5.6 | M.5.1, M.5.3, M.5.6 |

- JLAB interest in training
  - Work with IRIS-HEP/OSG on training, particularly leveraging the carpentries in a way that is well suited for a physics community
  - Staff members interested in expanding training opportunities for staff and users and train a couple to as serve an instructors
IRIS-HEP Fellows Program

- Promote the development of advanced research software skills by providing opportunities for undergraduate and graduate students to connect with mentors within the larger HEP and Computational/Data Science community.

- Preparing for a more formal/organized call soon for projects and proposals for a round of fellows in the fall.

Summary

- Training has picked momentum
- Progress on track against the NSF milestones and deliverables to date and as expected in Year 2.
- No concerns about in Year 2
- NO changes expected to SOW
Related Links/Info

  - 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