Pod A

Names (Afternoon):
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HEP/CS Collaboration

1) *How could we proceed to put together a document in the next 6 months summarizing HEP computing challenges in a language that CS people understand and map it to established discipline areas in CS?* (useful for developing future synergistic and collaborative projects/relationships with CS faculty?)

- As part of the CWP process, each CWP area can put together a page of the challenges (not a part of the CWP document) targeting CS
- Invite CS to read and give feedback/Recruit some CS people that we can partner with during the CWP process
- Ensure CWP is in language understandable to CS
- Talk with CS experts here about mapping CWP areas to CS community
- Possible workshop?

Integrate into existing CWP process: 1) each area summarize challenges targeting CS audience 2) ensure language is understood by CS 3) get CS engaged early and get feedback

2) *What are the incentives for such collaboration for HEP people? For CS people? For non-CS people?* E.g. recognition, funding, publications, students, new problems to solve, new places to apply technologies, new solutions to current problems, pride in working on a global-scale problem. *How could an S2I2-HEP institute create the relevant incentives and promote HEP/CS research collaborations?*

- *CS incentives: large datasets and challenging practical problems, Ph.D. and master theses, internships, research visits, future funding opportunities for CS proposals (domain applications),*
- *HEP incentive: CS expertise and new ideas, access to people with different skillset and possible guidance (should we build what we think we want to build), CS perspectives on industry trends and tools which further HEP research*

- *funding for people/projects at the HEP-CS computing interface*
- *give credit for software work*
- *fellowships*

3) **What can an S2I2-HEP institute do to create an environment of increased communication and awareness by individual HEP and CS researchers of each other's problems, expertise and research interests?**
- Create broader ties to the communities
- Steering committee with HEP and CS researchers
- Create exchanges: teach each other about what's going on
- Virtual seminar series & meetings?
- Hackathons
- Workshops
- CS Courses (program/curriculum) for HEP graduate students to take
- Send people to external conferences (CS, ML) and (data science, CS, ...) departments
- Host datasets
- Challenge problems

4) **Will HEP have anything interesting to offer in 5-10 years for CS researchers?**

- Unique datasets
- Practical challenges (e.g., storage, distribution)
- Areas to apply new ideas (eg. ML...)

S2I2-HEP Scope

5) The S2I2-HEP will not be trying to solve all problems for HL-LHC or HEP for that matter. Rather, it will be laying out a set of software activities for US Institutions for which the US can play a leading role. **What are the areas that the S2I2-HEP should play a leading role in, informed by activities and interests within the US HEP and US CS communities?**

- Machine Learning
- Distributed computing
- Data management and delivery
- Storage
- Languages

- Computer architectures
- Immersive technologies (i.e. [VR](#))
- Outreach and education
- Training
- Fellowships