CAREER & TRAINING WG

Closeout: Progress and Plans

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HSF Workshop, *Annecy*

Progress

The scope of the group is to:

- *Motivate why training is crucial for R&D and applying new techs*
- *Draw a roadmap for new training programs and utilization of existing ones based on existing challenges and available resources*

First day of the meeting

Training Chapter - Community White Paper

June 2017

Contents

First day of the meeting

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Google Doc with bullet point style relevant ideas.

LINK HERE

1

MN/MJ: Perhaps useful to have a "call out" in the CWP, not a big piece, but present, even if not exactly the same status as the other WG (may be a specific paragraph in the final document, to be discussed later)
MN: Also could help frame "software" as a useful "upgrade" activity within the experiments
OS: There's a number of issues I can think of:

- Software is developed by people with insufficient training, e.g. grad students or senior physicists who are not aware of modern technologies
- People with proper training can not be engaged because:
  - Universities have no positions for software engineers or application experts outside their computing centres
  - Academic salaries are not attractive for software experts, and in general not seen as adequate for this high-stress job
  - Trained software developers have little understanding of underlying physics or hardware problems
  - Physics departments can not award degrees in CS, hence can not attract PhD students from CS/IT
- Quality software development is a full-time job and thus detrimental to the academic career
  - No career path
  - No academic credits: even if software can be cited as e.g. a paper, one typically works on only one piece of software, which means only one "publication"
  - When done by grad students, is seen as an obstacle to their main project progress
- Even if we succeed in hiring a properly trained expert, they don't have career path in academy and remain low-level programmers/engineers for the rest of their employment
- I have to mention unattractiveness of our work to women: it is a stressful environment with tough competition, when success at times depends on hidden political currents. Disorderly manner of many developments only adds to the frustration.

- PC
  - does writing a successful Open Source library further your career?
    - Would publishing in a CS journal helps?
    - Receiving a grant is known to work!
  - Why has there never been a jenkins or github or numpy coming out of our community?
    - Are we really special?
- RK: In order to design training materials/processes we should have answers to the following questions:
  - What is the set of computing skills that (almost) every member of our community should have?
    - Which of these skills should be designated prerequisites and which should be taught by our community?
    - How should people acquire prerequisites?
  - There are many computing skills not included in the above; what fraction of our community should have each of these skills and how should they acquire them?
  - How do the answers to these questions change over the life cycle of an experiment?
    - On new experiments with "green field" software, there are often no "analysis TTrees" with information that is accessible to a new student who is supervised by someone who knows the physics and the detector but not the main body of the software

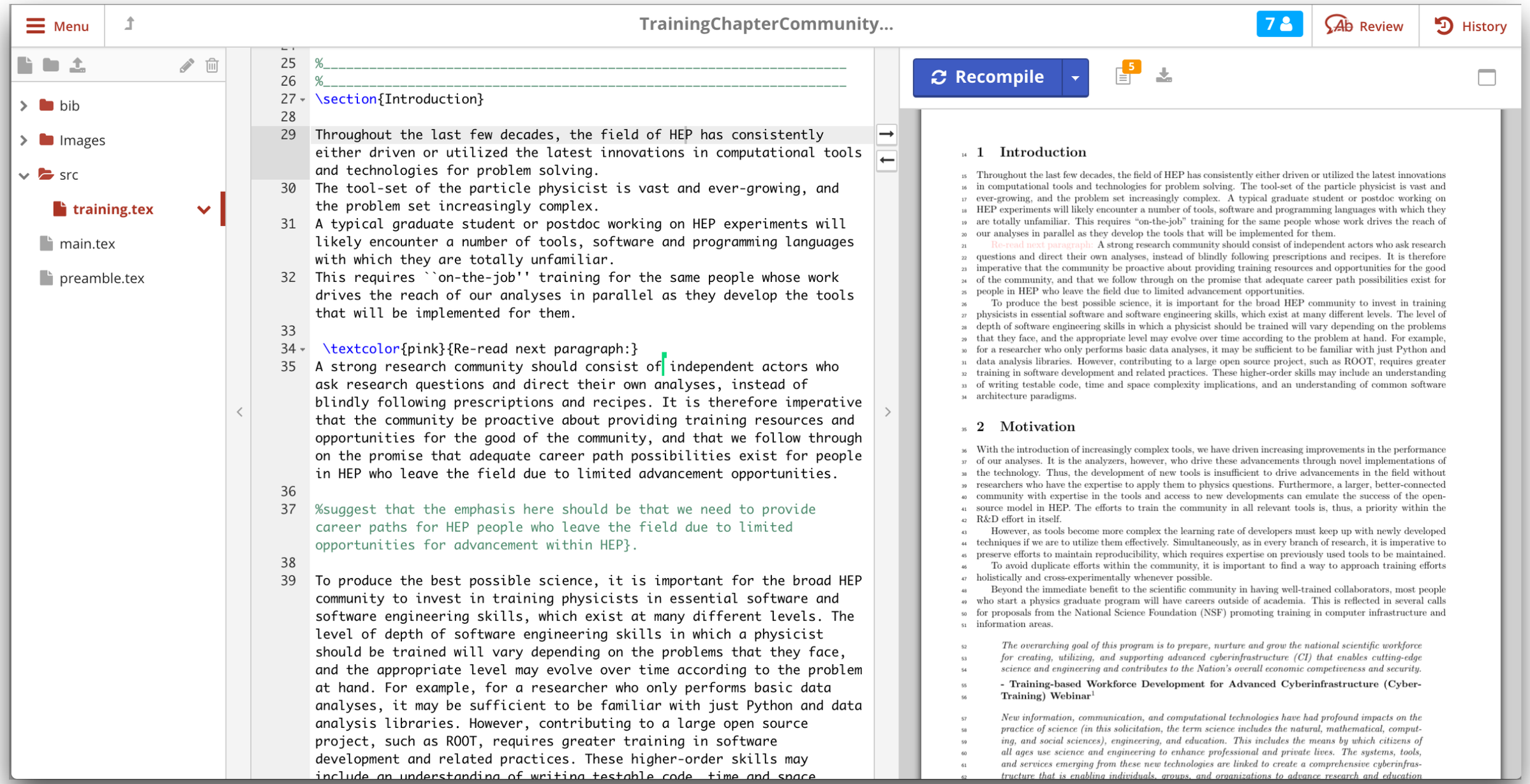
Does the community have a consensus on the answers? Is this consensus realistic?

- PS: [promotion of LHCb products] The LHCb starterkit (one week software training for students entering LHCb) got awarded with the LHCb Early Career Scientist awards in 2016. https://lhcb.github.io/starterkit/ i.e. the necessity for software training is known and gets rewarded.

Progress

We put together a document and a lot of progress has been made for the time given

https://www.sharelatex.com/project/595500273c5204ff35dfdcf9



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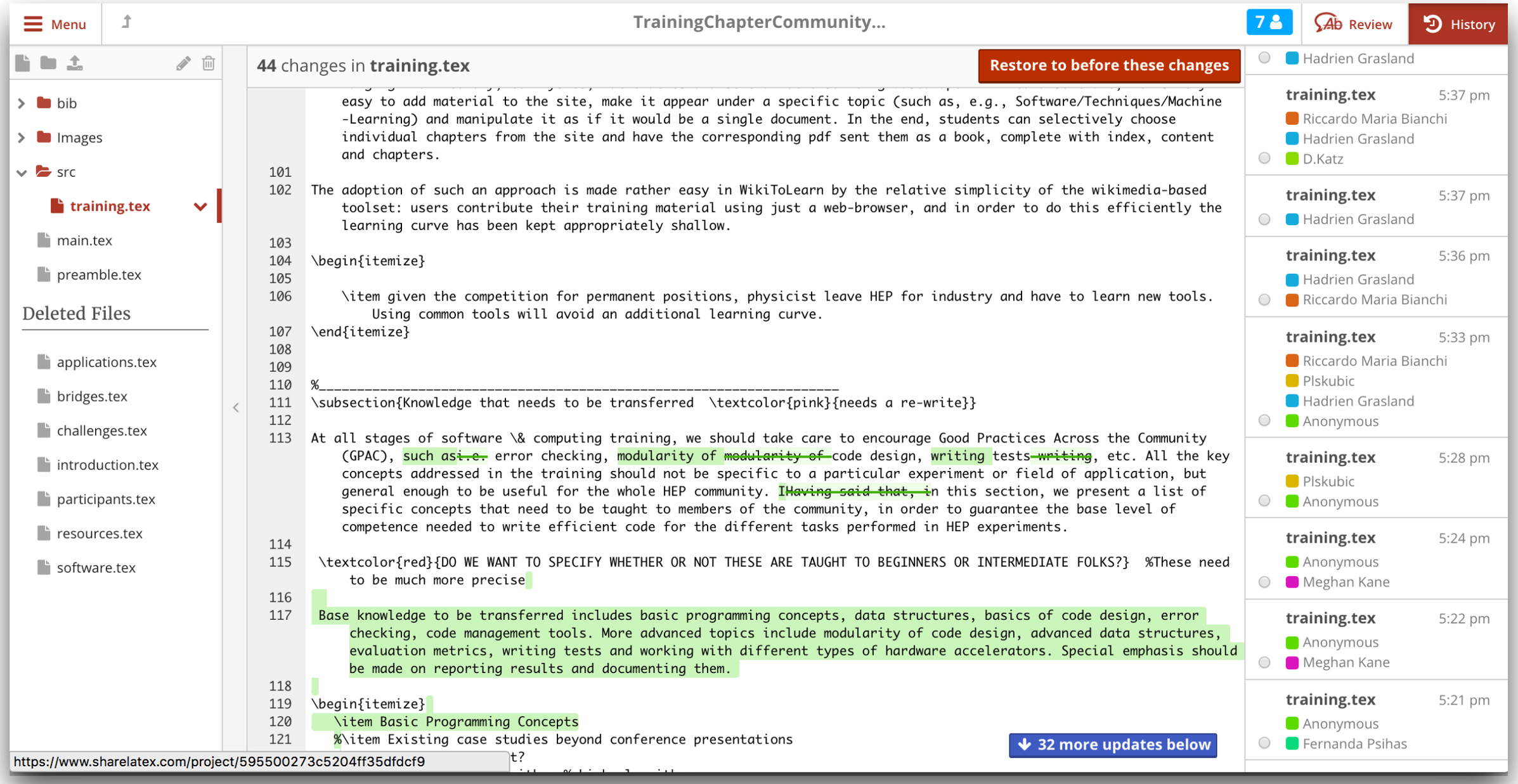

Progress

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He always logs in before editing the sharelatex and you should too

Today

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1

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1

The current document is mostly in readable paragraph format and summarized the discussions from this week. . LINK HERE

A lot of work is still needed.

Progress

This meeting:

We started with no document and one working session.

Progress

This meeting:

We started with no document and one working session.

~10 enthusiastic attendants!

Incorporated content from other sections which better motivates training

Brainstormed on some key points about existing efforts, overlap, needs and incentives

Discussion narrowed down to main ideas to communicate in the chapter:

Motivation and Training needs of the community

Challenges

Implementation Roadmap and Incentives

Plans for next few weeks

More writing is needed to finalize the current version but it is mostly outlined in the document already.

Will contact leads from other groups to proofread and add to "community training needs" in the coming weeks

Roadmap is not evident from the content at this point.

More participation is needed, please join the google group

https://groups.google.com/forum/#!forum/hep-sf-training-wg

You can still make a large impact on the outcome of this section.