

ECR Workshop on EPPSU summary and next steps

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Working Groups

- WG1: Communicating the importance of particle physics
- WG2: Future colliders
- WG3: Future particle physics experiments beyond colliders
- WG4: Interplay with neighbouring fields
- WG5: Career prospects and ECR leadership

WG1: Communicating the importance of particle physics

- Communication skills are important to be visible in the community, even though we have not been trained in this direction.
- Different levels of communication: general public vs. colleagues
- **General public:** simplifying complex concepts, engaging interest, maintaining attention. Are we acknowledged for that? Should we really do that in our free time?
- **Younger colleagues:** lack of experience in mentorship, balancing mentorship and our own research. Specific training opportunities needed?
- **Other ECRs:** balancing private life and work, isolation. How does it affect the way in which we communicate about our field? How can we help each other?
- **Seniors:** building peer network, independence vs. mentorship.

WG1: Communicating the importance of particle physics

- Ideas:
 - summaries on the importance of our field and our daily activities - showing how important/interesting our field is
 - a mentorship program from senior researchers down-to high school students to encourage knowledge transfer
 - support for ECRs - “ECR Forum”, a dedicated mailing list, an anonymous chat
 - collecting further ideas from different countries regarding training
- What do we want to communicate? What kind of statement can we agree upon?
- How to make sure our work is acknowledged?

WG2: Future colliders

- Input regarding the choice of a future collider
 - criteria to be fulfilled
 - ranking of proposals?
 - our insights
- To be addressed: conditions for a successful and interesting project, transparency, involvement of ECRs in the process
- Plans for the paper: emphasize the importance of a future collider (at CERN?), demand transparency, results of community-wide survey
- Survey (soon-ish until mid-January): ranking of criteria, other questions (also from other WGs!)
- How to make sure the survey is representative?

WG2: Future colliders

- Ideas/issues - survey:
 - adding “risk” to the list of possible criteria?
 - “to ask or not to ask”: what is your “favourite” collider proposal?
 - blank space for expressing opinions(?)
 - “evaluation” of each single proposal
 - what do you work on? who do you work with?
- Create a sub-group working on the survey?

WG3: Future particle physics experiments beyond colliders

- A lot of different experiments: neutrino physics, dark matter direct detection, fixed target experiments, beam dump experiments, precision frontier...
- **Scientific contribution:** probing other scenarios than colliders and/or enhancing sensitivity
- **Community contribution:** “joining” the effort, feeling included in the decision-making process
- Collaboration with other WGs: career implications, extra time outside main topic, interdisciplinary collaboration

WG3: Future particle physics experiments beyond colliders

- Statement: non-collider experiments should maintain a prominent role in the landscape, not only as “pathfinders” but also as groundbreaking activities on their own.
- Idea: enhancing collaboration by establishing a forum for non-collider physics, e.g. a sub-group within ECFA -> exchanging experience, finding your next position
- How to locate smaller experiments in the huge-collider landscape?

WG4: Interplay with neighbouring fields

- Exchange with neighbouring fields is crucial for further development:
 - Exchange of ideas, methods, technologies
 - Expertise exchange, person-power
 - Collaboration over scientific disciplines
- Neighbouring fields understood widely: tools (e.g. statistics), subject (e.g. astrophysics), applications (e.g. medical physics)
- Identifying benefits for particle physics and other fields (exchange)
- Ideas:
 - exchange of experts (moving between disciplines)
 - exchange of tools, ideas, technologies (how?)
 - cross-disciplinary collaboration on overlapping questions

WG5: Career prospects and ECR leadership

- Career prospects among the most important issues
- What to be addressed:
 - sustainable careers for ECRs
 - more leadership roles, more visibility, more recognition
 - dedicated funding
 - interplay with industry, society
 - the choice of the collider defines our future!

WG5: Career prospects and ECR leadership

- Ideas:
 - informing undergrads about career statistics
 - making the field more attractive
 - establishing a clear path towards faculty positions
 - training (both academic and industrial skills)
 - smoothing transition between academia and industry
 - international mobility as an opportunity and challenge
 - support for independent research
 - inclusion in the decision-making process
 - funding

General comments

- We are the experts! Most of the work on future colliders is done by ECRs.
- Reshaping the WGs?
- One survey - input from different WGs needed

Summary

- 122 registered participants (up to 30 in person)
- 6 presentations (recorded) and a lot of discussions
- Still more discussions in the afternoon + a dedicated session for newcomers (please, invite your colleagues!)
- Open ECFA session tomorrow

Time	Topic	Speaker
10:00	ESPP preparation	Karl Zuber (University of Freiburg (DE))
10:20	ECFA HET Factory study: Overall status and report planning	Christina Lantieri (University of Strasbourg (FR))
10:40	ECFA HET Factory study: WG1 Higgs, top & electroweak physics and global fit	Marcin Vol (INFN Trieste (IT))
10:55	ECFA HET Factory study: WG1 Searches and Flavour	Roberto Franceschini (IT)
11:10	ECFA HET Factory study: WG2 Physics Analysis Tools	Fabrizio Azzurro (INFN Trieste (IT))
11:25	ECFA HET Factory study: W3 Detector Technologies	Mary Chad Faust (University of Southampton (UK))
11:00 - 11:15	Coffee break	
11:15 - 12:35	LHC experiments upgrades and plans	
11:20	ALICE upgrades and plans	Felix Stenlund (CERN)
11:35	ATLAS upgrades and plans	Craig Sawyer (University of Technology Sydney (AU))
11:50	CMS upgrades and plans	Rafael Heide (University of Bonn (DE))
12:15	LHCb upgrades and plans	Thomas Dorigoni (University of Bristol (UK))

Time	Topic	Speaker
13:00	Update on LHD	Prof. Dave Newland (RIKEN Advanced Photon Source Laboratory (JP))
13:15	High Field Magnets	Dr Esak Toebes (CERN)
13:30	Radiofrequency Structures	Igor Sviratchev (CERN)
13:45	Energy Recovery Linacs	Jürgen Dittus (CERN Accelerator School (CH))
14:00	Muon colliders	Carsten Schaefer (CERN)
14:15	Plasma Accelerators and the HALNF concept	Erik ABE (University of Guelph)
14:00 - 14:20	Coffee break	
14:20 - 17:20	JENAs and others	
14:30	Report from the LHC Sustainability WG	Catherine Billore (European Organization for Nuclear Research (CH)), Catherine Billore (European Organization for Nuclear Research (CH)), Dr Malgouyères
14:45	Nuclear Physics at the LHC	Andreas Kersch (CERN)
15:00	ALICE for Particle Physics: Building an infrastructure with EUCAIP and Beyond	Geoffrey Caron (CERN Accelerator School (CH))