Ethics & Community Engagement

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Outline

1. Ethics
2. Community Engagement Frontier (CEF) Summary

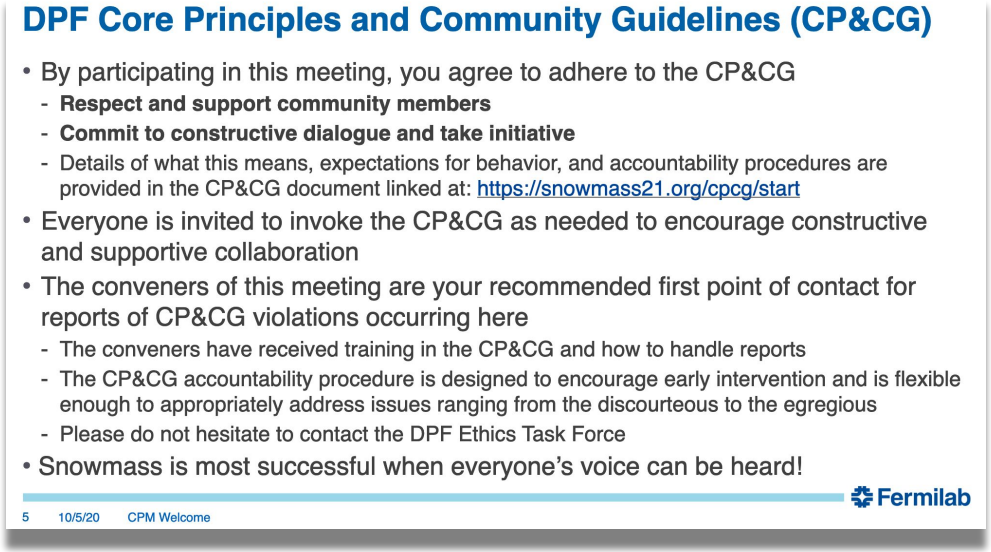
Ethics and Snowmass

DPF Executive Committee convened an Ethics Task Force this year

- Comprised of DPF Ex Comm members & Snowmass convenors

Created a code of conduct for DPF activities, and gave several recommendations, including recommending the formation of a standing committee on Ethics

- Thank you for your nominations!



Building a healthy community

- We encourage everyone to read the CP&CG. Comments are welcome.
- It has 3 parts:
  - **Core principles**: what our community values most
  - **Community guidelines**: expectations of behavior
  - **Accountability:** procedures with an emphasis on early intervention for the wellbeing of all community members
- CP&CG is everyone's responsibility:
  - You can invoke the CP&CG to ensure constructive participation by everyone
  - You can discuss possible violations with your conveners
  - You can discuss directly with the subset of the Ethics Task Force which forms the CP&CG response team

Real life examples of reports & actions

Stats: 4 reports so far, 3 have been resolved, 1 in progress

- Spoke with a community member about appropriate use of cross-posting in the Slack channels
- Instituted protective processes in response to concerns that a person's past behavior might interfere with their role in snowmass activity
- Informed participant that comment in CPM presentation was offensive to some community members

Please don't hesitate to contact members of the CP&CG Response Team

General Ethics Reminder

New ideas are flourishing as a result of snowmass work. If you are working on an idea which overlaps with some presented work, we encourage you to disclose the connection. Progress is best made through transparency and collaboration! Trust is fundamental to our process.

CEF Summary

1. Key questions in CEF
2. Activities in CEF + cross-cutting activities with other frontiers
3. Next steps / plans between CPM and CSS

Acknowledgements

Special thanks to the CEF Conveners, Liaisons & session organizers for their contributions

https://snowmass21.org/community/start

CEF Topical Group (TG) Convenors & Liaisons to other Frontiers

Applications & Industry (20 LOIs)

Farah Fahim
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Alex Murokh
Radiabeam
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Koji Yoshimura
Okayama

~100 LOIs
(several overlapping)

Diversity and Inclusion (33 LOIs)

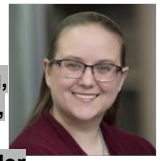
Carla Bonifazi
(Univ. Fed. do Rio de Janeiro)

Mu Chun Chen
(UC Irvine)

Samuel Meehan
(CERN)

Career Pipeline & Development (31 LOIs)

Liaisons:
Claire Lee, Devin G. Walker, Farah Fahim, Jeroen van Tilborg, Mateus Carneiro, Sergei Gleyzer, Sijbrand de Jong, and Sophie Middleton, David Bruhwiler



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CEF Convenors

Breese Quinn (Mississippi)

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Physics Education (31 LOIs)

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Public Education and Outreach (16 LOIs)

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Public Policy and Government Engagement (10 LOIs)

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At the CPM

- Introduction Session
  - Review of CPM Sessions
  - LOI groupings toward White Paper Study Groups
- Cross-community mobility in Science
- CEF Plenary—Community Engagement Across the Frontiers
  - Structural changes in support of Public Engagement with Science in South Africa
  - Questions for the Frontiers
- HEP and Accelerator Workforce, Career and Training
  - AF1—Accelerator Physics, Education, Outreach, and Diversity
  - CP&D—Career Pipeline & Development
  - PE—Physics Education
  - EC—Early Career
- Connection with Industry
- CEF Planning

TGs: effort on consolidation, coordination & solicitation, leading to studies & Contributed Papers November - December 2020

- **~100 LOIs**
  - To be re-organized, re-grouped and condensed into a smaller set of White Papers Work Groups
  - Encourage authors of related / merged LOIs to work towards common White Papers
  - Active solicitations of regular reports on the progress of White Papers in each of the relevant Topical Groups
  - Interim reviews of White Papers
- **CEF Survey results**
  - Community survey to collect information about your experiences engaging with the public, media, government officials, and/or students—or why you haven't participated in those activities. You can find it here: https://stanforduniversity.qualtrics.com/jfe/form/SV_ekWoPxMjX4h4LY1
- **Solicit inputs from other frontiers**
- **Towards refinement / re-definition of key questions**

LOI Topics / Categories (1)

- **Applications & Industry**
  - Tech transfers from national lab perspective
  - Industry and vector developments for HEP labs
  - Joint workshop with Computation Frontier
  - FLASH radiotherapy
  - Launching spin-off companies from national labs
  - Engaging with big business
- **Career Pipeline & Development**
  - Enhancing HEP research in 4-yr institutions and community colleges
  - Tackling Diversity and Inclusiveness in HEP
  - Retuning Physics Education and Early introduction of HEP in academic curriculum
  - Retention and reversing the brain drain in HEP
  - Facilitating transition to Industry Career
  - Enabling science and careers via the software, data and computing in HEP
  - Access to accelerators and instrumentation knowledge for HEP and related careers

LOI Topics / Categories (2)

- **Diversity & Inclusion**
  - Accessibility
  - Funding Agency Recommendations
  - Climate of the Field
  - Educational Resources for the Field
  - Lifestyle and Personal Wellness
  - Under-represented/Marginalized Communities
  - Recruitment, Evaluation, and Recognition
  - Societal Impacts of Science Projects → New Topical Group
- **Physics Education**
  - Career and Education
  - General education K12 and up
  - Particle physics specific education
  - Global software issues and HEP
  - Public Education Connections

LOI Topics / Categories (3)

- **Public Education & Outreach**
  - Early Career long-term organization
    - Public Education and Engagement is on the radar in terms of important future work for early career physicists.
  - Education and Outreach to under-represented communities
    - Multiple LoIs that are joint with D&I, focus on ethics and justice
  - Facilitating access to HEP data for educational purposes
    - Particle physics playground (python!), network of detectors at schools, dedicated shared database with curriculum/activities/ideas
  - Expanding FNAL's international outreach reach through European Networks
  - Expanding to non-traditional outlets
    - Music and cultural festivals, integrated arts research
- **Public Policy & Government Engagement**
  - HEP congressional advocacy (funding)
  - HEP congressional advocacy (non-funding)
  - HEP non-congressional advocacy
  - Public policy and government engagement training and education

Cross-community Mobility in Science (#118)

#cpm_topic_118

- **Discussion following the LoI:**
  - *Promoting participation of instrumentation subcommunities in physics research*
- **Problem:** Mobility is absent between subcommunities in HEP
  - Experimentalists and theorists (within the scientist groups)
  - Non-scientists (engineers, engineering/applications physicists) and scientists

There are many groups in labs with no formal access to the HEP knowledge production

- **Topics discussed:**
  - People w/o PhD degrees lack path to scientific track (“No way out of instrumentation”). Interface with Education > Is education/earning a degree on the job possible in the US?
  - People on non-scientist tracks are restricted from aspects HEP research despite completed PhD/postdocs. Cultural concern > Reminds some discussants of a class/castes system, existing within HEP.
  - Valuing creative scientific work is now managed by the FTE labor-metric in many organizations. Funding/structural concern > Proscribed-FTE approach ineffective for highly trained researchers.
- **Other observations:**
  - These features seem rather unique to HEP and are rarely found in interdisciplinary fields
  - Constraints appear related not to degree/publications, but instead to belonging to “in groups”
  - The dawning of HEP the community saw a more egalitarian approach

Community Engagement Across Frontiers

- Structural changes in support of Public Engagement with Science in South Africa
  - Why science engagement matters for Africa
  - Example of the South African context
  - Changes at
    - National policy
    - Institutional and faculty/department levels
    - Professional society level
  - To inform / stress the importance of community engagement
- Panel discussion—”Questions for the Frontiers”
  - Community Engagement is the responsibility of all
  - Understanding community engagement in the other frontiers
  - Encourage cross-cutting activities with other frontiers

#cpm_plenary_engagement_across_frontiers

HEP and Accelerator Workforce, Careers, and Training (#119)

- AF1 and CEF (CP&D, PE) and EC LoIs perspectives presented
- AF1 concerns included: workforce & student recruiting, maintaining academic representation in universities and journals, and obtaining time & funding for research and teaching outside of project duties
- CEF focus by design is more inclusive - workforce to meet HEP research goals, better ways to assist and mentor 70% postdocs and young scientists who seek jobs outside academia (industry partnerships is key to this), meet challenges of HEP faculties at 4-yr institutions
- Meeting above needs requires appropriate and aggressive training and education at different levels of education stratas (K-12 to Postdoc) of which diversity is an essential component
- HEP should view engineers, technicians more than a support staff in terms of work recognition and professional development
- Upcoming workshops and discussions to foment White Paper strategies
- In addition, post CPM discussions on Slack channel #cpm_topic_119

AF1 and CEF agreed a better framework is needed to monitor diversity statistics in field

Connection with Industry (#57)

- First set of panelists are industrial companies offering products and services to HEP labs:
  - Euclid Techlabs
  - RadiaBeam Technologies
  - Amplitude Systems
  - nLight
- R&D/prototypes development industrial programs are disconnected from lab production needs
- Businesses may be asked to develop “blue sky” such as muon collider parts under SBIR program, while the production is done at the national labs building for themselves or one another.
- No opportunity for business engagement in production. Companies need to be able to participate in projects early on and on a significant scale to be viable.

- More discussion on the challenges for labs to work with businesses in the semiconductor field, with panelists from:
  - Fermilab
  - BNL
  - MIT Lincoln Lab
  - NHanced Semiconductor
- Any small companies will get swallowed or fade away. SBIR is meaningless in an industry that has >$100M entry barrier.
- Midscale foundries may be sustainable (e.g. SkyWater) and MITLL is intended to fill the void to some extent for the USG, specifically for DOD but more broadly as well.
- HEP often wants process control which is at odds with large foundry operations. Sharing IP is a big issue and trust is also a concern. HEP has driven innovation such as 3D interconnects, which only became captive to large companies and unavailable to HEP and other small volume users.
- Split fab (front end of line work at large foundry, back end of line processing in small foundries at larger, often at larger feature sizes) is a model that should be considered);

#cpm_topic_57

Towards the Community Summer Study (CSS), #208

- Key question development for the basis of white papers
- Number of white papers and their scope well understood and defined
  - Working Groups organized
  - Regular reports in TGs
- CEF will maintain a working document, accessible to the TGs
- The document will develop into the outlines of the CEF TG reports
- This communication will be regular and continuous
  - In the form of regular reports at TG meetings
  - Encouragement and assistance to the authors
- CEF common working document to be massaged to into the preliminary report
  - Solicitation of community comments and feedback
  - Discussions and implementation of comments towards an improved report

#cpm_topic_208

Community Summer Study (CSS) July 11-20, 2021
DPF 2021

Build consensus on key questions / opportunities of particle physics, enabling technologies, community engagement. Formulate the content of Executive Summary

- CEF report matured
  - All CEF white papers finalized
  - Community inputs, feedback and comments addressed
  - Summary presentation at the CSS
- CEF Final Report, July–October 2021
  - Feedback at CSS addressed
  - Final report CEF report submitted to the Steering Group

#cpm_topic_208