

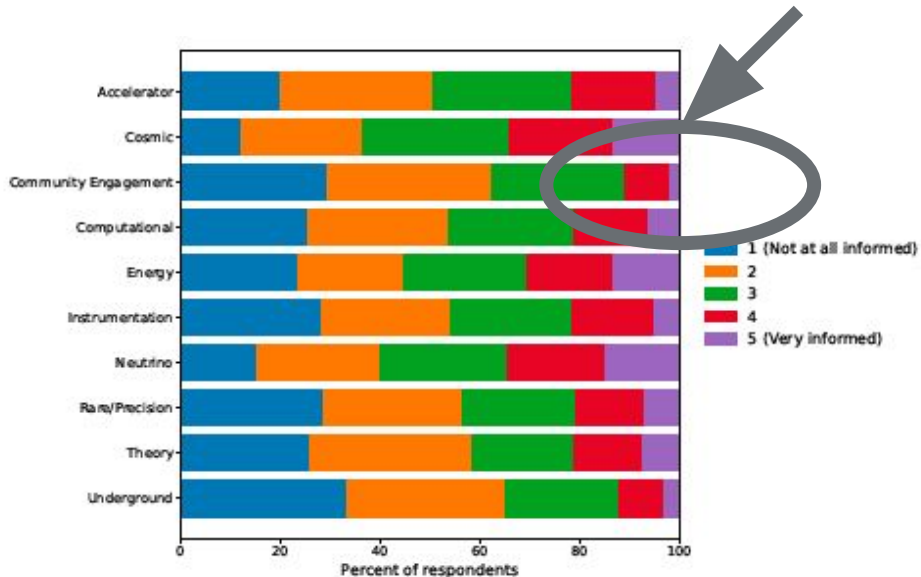
Community Engagement Frontier

What do we need to move HEP vision forward?



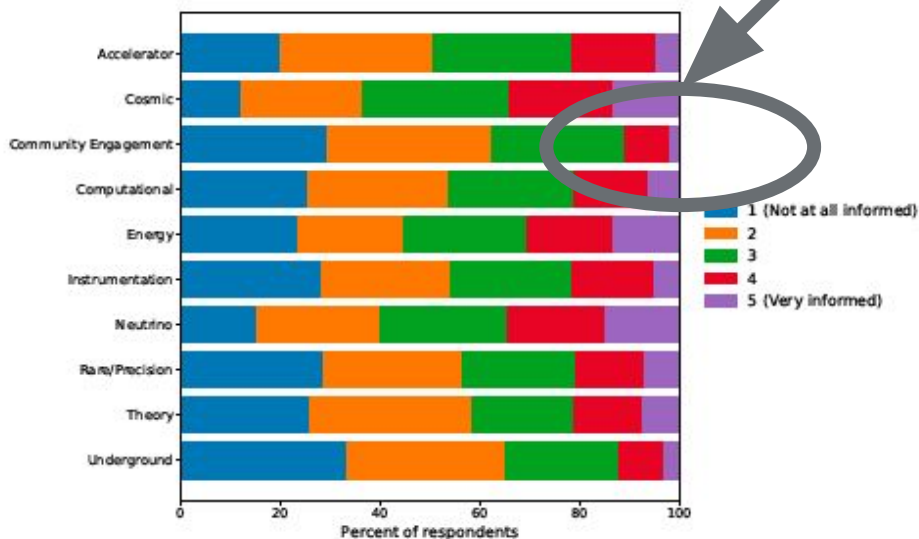
Panel 2
July 25th, 2022

How well-informed did people feel about the future directions of the Frontiers



arXiv:2203.07328

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[arXiv:2203.07328](https://arxiv.org/abs/2203.07328)

How folks responded to opportunities to learn



Legitimate and understandable structural and career advancement reasons!

Mostly CEF conveners.
5 Frontiers sent no representation.
(Similar in plenary/lunch sessions)

CEF07: Environmental & Societal Impacts

Major Goals

- Minimize environmental impacts of HEP activities
- Maximize the quality of our relationships with local communities
- Pursue R&D on technologies related to non-proliferation

Specific areas in need of targeted support

- Climate change mitigation
 - Comprehensive and standardized emissions and energy use reduction goal setting and reporting for all projects and facilities
 - Investment in energy-saving technologies (e.g. deployment of next-gen remote meeting tools)



CEF07 Report

CEFO6: Public Policy & Government Engagement

Major Goals

- Expand and improve advocacy for HEP funding
- Partner with broader science organizations in advocacy for non-funding issues
- Improve communication between HEP community and funding agencies

Specific areas in need of targeted support

- Support and development of the HEP Advocacy technical and logistical tools
 - WHIPS, twiki, databases
- Enhance and expand availability of training programs in HEP advocacy



www.usparticlephysics.org/

CEF06 Report



In person DC trip

CEF05: Public Education & Outreach

Major Goals

- Enact structural changes to better enable public engagement
- Build lasting relationships with all of our supporting communities based on real two-way partnerships rather than transactional interactions
 - Consider audiences, remove barriers to excluded groups

Specific areas in need of targeted support

- Develop and deploy training programs in science communication
 - Create communication plans in partnership with audience
- Establish HEP science communication awards

I love my Symmy from Snowmass 2013, but we're thinking of something a little more "meaningful"!



CEF05 Report

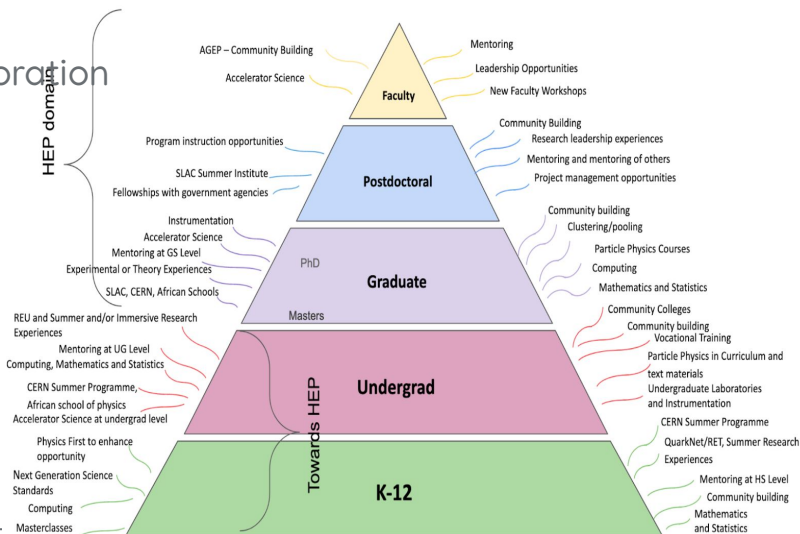
CEF04: Physics Education

Major Goals

- Build local community academia/K-12 partnership “fora”
- Enhance university degree programs to better match today’s career opportunities
- Institute programs to grow participation in HEP from non-R1 academic institutions
 - R2/PUI/CC
- Expand university programs for international student collaboration

Specific areas in need of targeted support

- Dedicated grant support for MS students
- Funding for PUI/CC faculty teaching buyouts



CEF04 Report

CEF03: Diversity, Equity, & Inclusion

Major Goals

- Employ robust strategic planning procedures, to re-envision science workplace to prioritize and addresses community-related issues.
- Implement new modes of community organizing and decision-making that promote agency and leadership from all stakeholders
- Engage in partnership with outside experts in several disciplines



Specific areas in need of targeted support

- Create pathways for members from marginalized backgrounds and to support their academic and research pursuits
 - e.g. mentorship training, accessibility tools, directed FOAs
- Fund engagement of outside experts



CEF03 Report

CEF02: Career Pipeline & Development

Major Goals

- Institute programs to grow participation in HEP from non-R1 academic institutions
- Provide more education and career opportunities for engineering and industry-focused research within HEP
 - Strengthen ties with industry etc. with effective alumni networking

Specific areas in need of targeted support

- Course buyouts for PUI/CC faculty on grant proposals
- Develop/maintain an alumni portal
- Career skill training programs
 - e.g. mentorship, grant-writing, industry skills

CEF02 Report



I work on Waymo's LIDAR team. LIDAR is one of the "senses" that self-driving car systems use to map the 3D world around them. I use my research experience in light detection to build custom sensors that enhance the safety of self-driving cars. I find that people value the data analysis skills and multidisciplinary background I bring to the team as a particle physicist.

—Kanika Sachdev, Waymo



I am the director and co-founder of INQNET, a collaboration between AT&T Foundry and Caltech, to develop intelligent quantum networks and technologies. Bringing together diverse expertise to solve this challenging problem was inspired by my experience working with physicists from around the world in the massive ATLAS collaboration at CERN.

—Rishiraj Pravahan,
INQNET



Part of my job is to understand detector physics and how it can be used to create new medical imaging technology. We're able to image anything where there's a lot of blood flow by using radioactive tracers. This technique is based on the physics of the particle detection experiments I worked on at Fermilab. My job is deeply rooted in physics, and I like that my skills are transferable.

—Wesley Gohn,
Siemens Medical
Solutions, USA

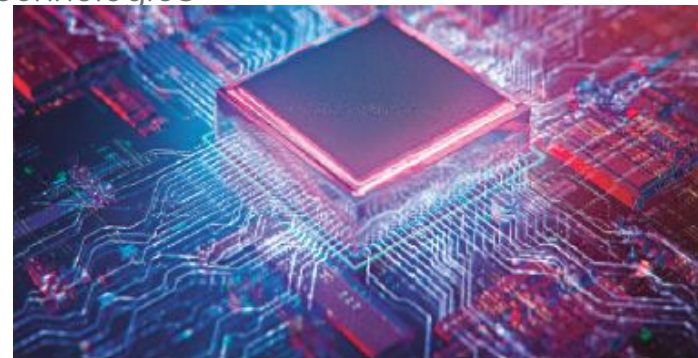
CEF01: Applications & Industry

Major Goals

- Engage engineering departments to create technology-focused education and application-driven research opportunities in HEP
- Implement policies and programs to foster cross-agency technology development and technology transfer
- Pursue partnerships with early stage scaleup companies on HEP projects
- Update policies and collaborative programs directed to specific technologies

Specific areas in need of targeted support

- Create public – private partnerships between academia, national labs and Industry for accelerating lab-to-fab innovation
- Prioritize and simplify domestic stakeholders access to HEP resources for FLASH radiation therapy development



CEF01 Report

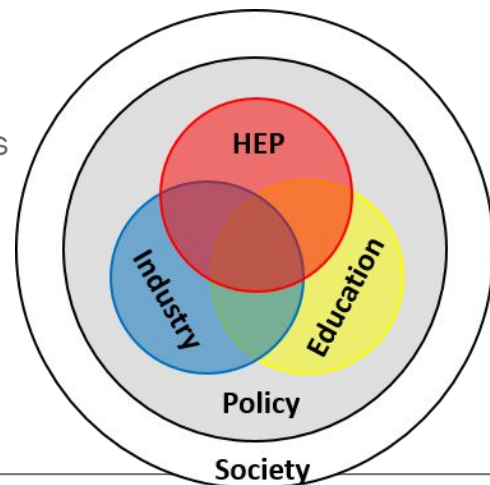
CEF: Frontier-wide

Major Goals

- It is critical that we all agree on the importance of *everyone* working together to organize and develop our ongoing efforts in CE in a *coherent* manner focused on improving our HEP community and achieving the vision for our field
- A *structure* must be established within HEP for taking ownership and responsibility for *implementing* CEF recommendations and *monitoring* their progress across the entire field

Structural Change

- All stakeholders form a P5-equivalent panel to shepherd CEF recommendations
 - Must have direct connection to multiple streams of resources
 - As opposed to P5: agencies fund/implement projects, so P5 lives within DOE/NSF
- Review CEF integration in Snowmass
 - Perhaps do major work on field-wide CEF planning asynchronously, enhance participation
 - Other Frontiers could still report on CEF activities during Snowmass



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Specific areas in need of targeted support

- Staffing for the group tasked with implementation and monitoring
- Research and surveys on existing work and activities
- Developing monitoring and evaluation tools/rubrics
- Tangible support for researchers participating in *all* areas of Community Engagement
 - e.g. in grant, hiring, performance reviews

CEF Report

