

DPF Early Career perspective: Themes from Snowmass and P5

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DPF Executive Committee Early Career Representative, 2023



HEP Early Career Award Network Workshop

June 8, 2023

Early Career voices in the Snowmass process

- **Snowmass Early Career (SEC):** Early career (EC) physicists brought together by Snowmass process
 - Historically “Snowmass Young” [[2013](#), [2001](#)]
- “*Early Career*” = Roughly 10 years from highest degree, including engineers/technicians
 - Guideline rather than a hard rule → largely self-identifying

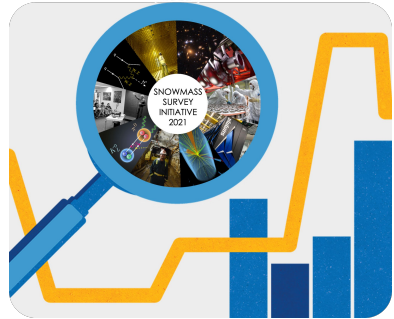
Two arms of the organization:

[[Early Career Memo](#)]

**Snowmass
Coordination:**
collaboration of
EC liaisons for
each frontier

Key Initiatives:
Snowmass-independent
offshoot

Key Initiatives Highlights



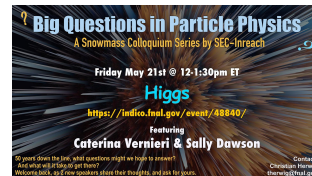
[2207.07508](#)

Survey

- Collecting opinions/experiences on careers, physics outlook, workplace culture, visa policies, COVID-19, & more [[FNAL News](#)]
- White paper: [2203.07328](#)

Inreach

- Very successful & well-attended “Big Questions” Colloquium Series
- Ex. Higgs physics, neutrino low energy excess, Muon g-2, future colliders, dark matter [[YouTube channel](#)]



DEI

- Co-organizing DEI Town Halls with Community Engagement Frontier
 - June 2021: “[Navigating Mentor/Mentee Relationship](#)”
 - Sept 2021: “[Supporting Early Career People in Academia](#)”



Dr. Marcela Hernandez



Dr. Caglayan Kurda



Dr. Brooke Russell



Dr. Sara Simon



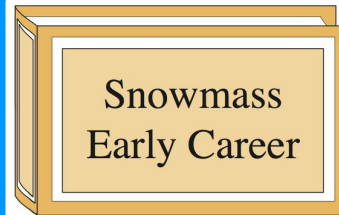
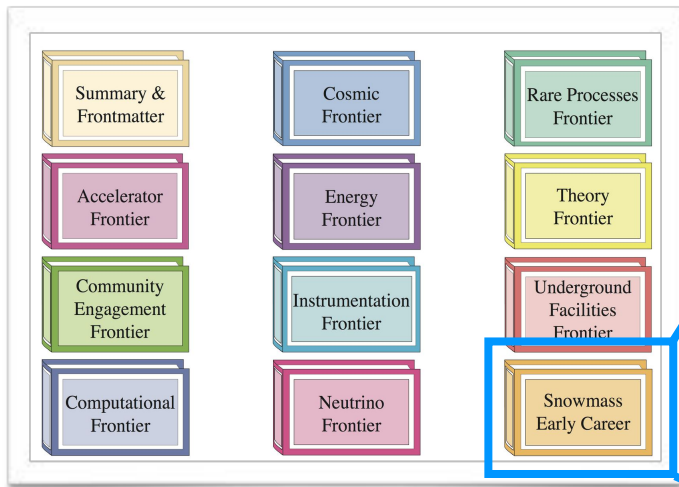
Dr. Sweeney Windchief

Long-Term Organization

[LOI](#) submitted in Community Engagement Frontier

Snowmass Early Career Report

- For the first time, the Early Career organization has a chapter in the Snowmass Book [[2210.12004](#)]
 - Includes a summary of the SEC survey report and **Early Career recommendations for P5**



Conveners: Julia Gonski, Fernanda Psihas, Sara M. Simon

[Frontier Summary Report](#)

[arXiv:2210.12004](#)

Topical Group Reports:

[Key Initiatives Organization](#)

[arXiv:2207.07508](#)

Conveners: Joshua Barrow, Kristi L. Engel, Tiffany R. Lewis,
Sara M. Simon, Jorge Torres

[Community Survey Report](#)

[arXiv:2203.07328](#)

Conveners: Garvita Agarwal, Joshua L. Barrow, Mateus F. Carneiro,
Erin Conley, Maria Elidaiana da Silva Pereira, Sam Hedges,
Samuel Homiller, Ivan Lepetic, Tianhuan Luo Sam He

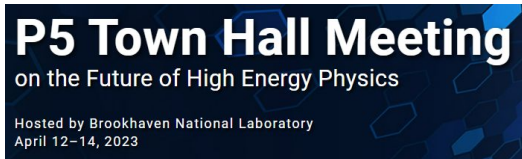
Early Career voices in the P5 process



Invited Early Career plenary @ SLAC: [Julia Gonski](#) (on which this talk is based)

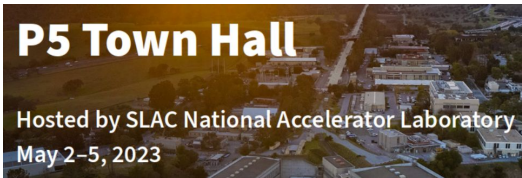


Other invited plenaries: [Erin Hansen on Climate of the Field](#), among others



Early Career closed session with the P5 committee

- Panel of Early Career representatives and leaders from many experiments, collaborations, and sub-fields
- Approximately 50 participants



Numerous 5min contributed remarks by Early Career Scientists or about Early Career issues!

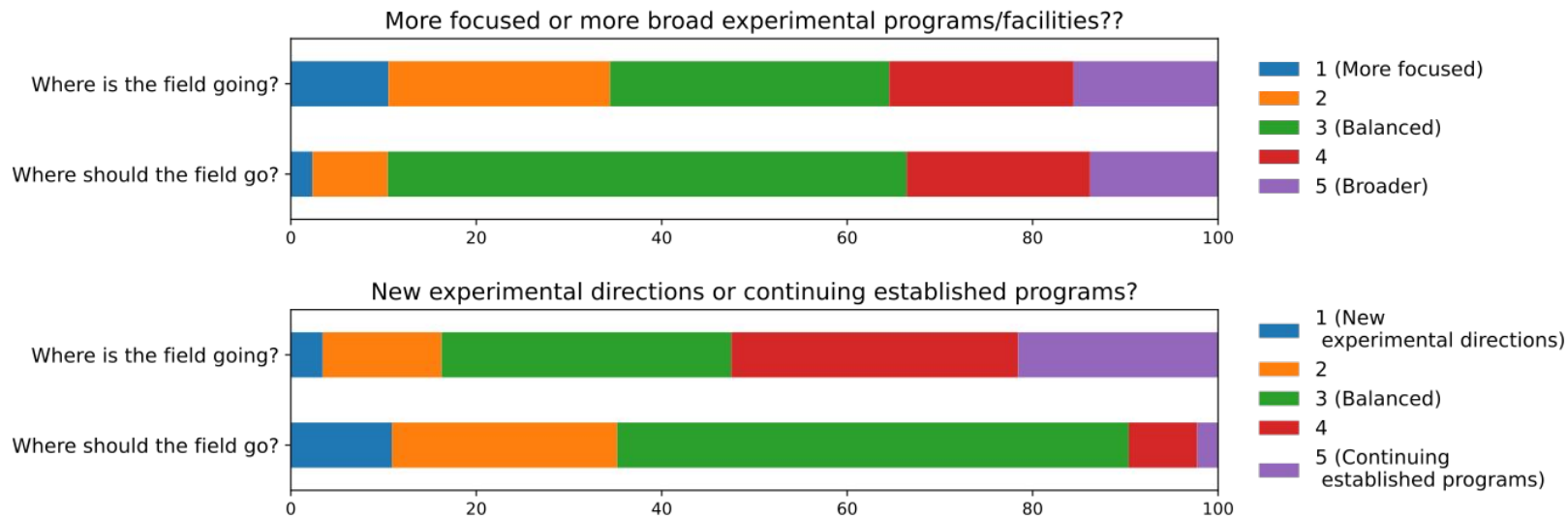
Four major themes:

1. Engagement in the physics
2. Logistical barriers to participation
3. Cultural barriers to participation
4. Early Career representation

Theme 1: Engagement in the Physics

Common question: What are our Early Career members interested in?

No single answer! Early career community is diverse in identity, background, and physics interests.



Theme 1: Engagement in the Physics

One clear commonality: Everyone is motivated to help shape a future that they are invested in!

Leads to calls for projects that can:

- Deliver results on timescales useful to the academic career track
- Allow Early Career members to take on scientific and technical leadership roles
- Provide well-rounded training opportunities in a variety of skills

This often looks like:

- Small-scale experiments
- R&D
- Phased approaches to large projects, with demonstrators and prototypes

Bottom line: Early Career experience and training should be carefully considered when making decisions about the future of the field.

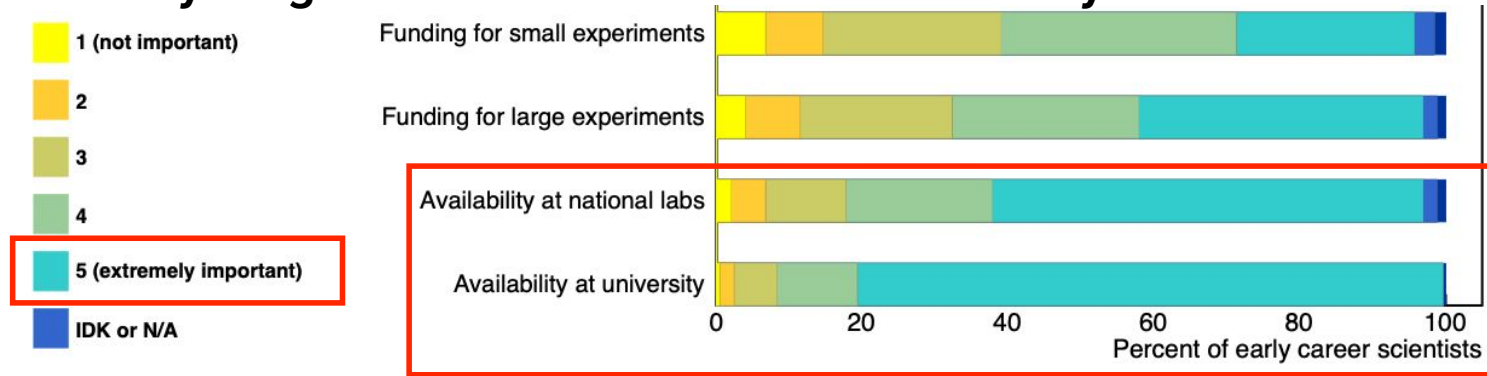
Theme 2: Logistical barriers to participation

If possible, Early Career members largely want to stay in physics: > 80% likely to apply for University & Lab jobs

What logistical factors may force them to leave?

- Economic concerns: affordability, benefits, caretaking responsibilities, etc.
- Accessibility: captioning/interpretation, ADA compliance, etc.
- Immigration or visa concerns
- *Availability of academic jobs*

What are your greatest career-related concerns for your future in HEPA?



Theme 2: Logistical barriers to participation

Solution must be (at least) two-fold:

Enable people to stay in the field by:

- Searching for ways to retain talent (more positions, alternative career paths, etc.)
- Building a culture of accessibility (captioning, childcare, thriving wages, etc.)

AND

Support people who make the decision to leave by:

- Providing professional development opportunities for careers outside academia
- Not falling prey to an “us versus them” mentality

Theme 3: Cultural barriers to participation

If possible, Early Career members largely want to stay in physics: > 80% likely to apply for University & Lab jobs

What cultural factors may cause them to leave?

- Repeated instances of overt or subtle sexism, racism, ableism, etc.
- Toxic or disrespectful culture, expectations of overwork, unsustainable competition, etc.
- Harassment of any kind
- Failure of Codes of Conduct to address violations, fear of retaliation
- Mental health, burnout

These issues compound for community members who are routinely minoritized.

If you think these issues are not present in your community, it's because no one is talking to you about them, not because your community is exempt.

- [E. Hansen](#)

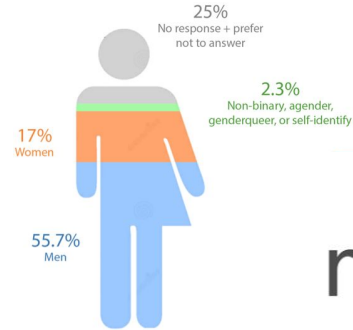
Theme 3: Cultural barriers to participation

Change is required, and not just because it “enables better science”, but because it is simply *the right thing to do*.

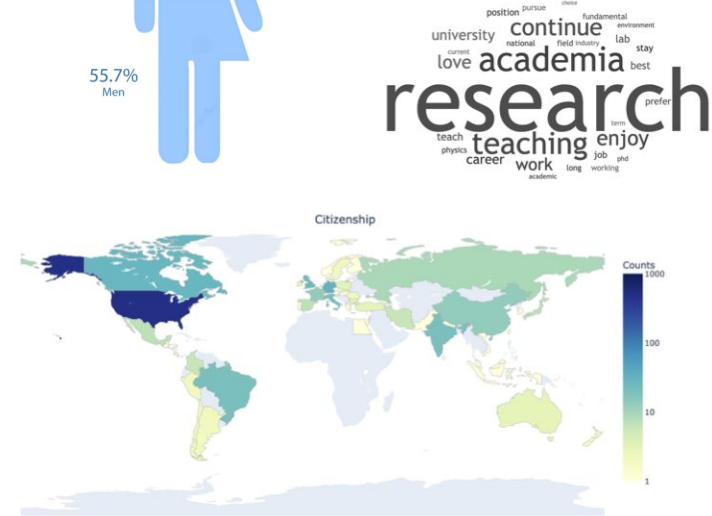
Early Career members care deeply about these issues, and are often at the forefront of making change.

BUT:

- Should not conflate EC issues and DEI issues
- It should not be expected that EC members shoulder sole burden of change-making → efforts must also be top-down
- Should not make this an unfunded mandate



[E. Conley](#)



Theme 4: Early Career representation

Decisions that influence the direction of the field have significant impacts on our career → **Early Career voices must be heard in these decisions!** Two methods:

1. Support the formation and operation of Early Career organizations within collaborations and institutions

- Provides the means for Early Career members to collectively advocate for their needs (and a number of other essential services, right)
- *In particular, time is ripe for a DPF-level effort!*

What EC Orgs do

Community

Social Events
Online communities
T-shirt contests
Social media presence
Community-building activities
Journal clubs
- Motivational speakers
Mental health ed & resources
Harassment Ed & resources
Collaboration challenges

Onboarding

Software tutorials
Hackathons/other organized challenges
Resources to meet other EC colleagues
Local events highlighting cultures & international holidays
Onboarding to local community (i.e. living at lab)

Representation

Representation of EC groups in decision-making bodies
Advocate for EDI issues
Advocate (sometimes start efforts) for climate surveys
Contribute (sometimes spearhead) development of Codes of Conduct
Raise awareness for issues of harassment

Snowmass Early Career Longterm Organization

Going Beyond the Snowmass Process

Garvita Agarwal¹, Joshua Barrow^{*2,3}, Mateus F. Carneiro⁴, Kristi L. Engel^{†5,6}, Antonia Hubbard⁷, Manolis Kargiantoulakis^{†3}, Tiffany R. Lewis⁸, Maria E. S. Pereira⁹, Fernanda Psihas^{8,3}, Sara M. Simon^{*3}, and Pranava Teja Surukuchi¹⁰

Theme 4: Early Career representation

Decisions that influence the direction of the field have significant impacts on our career → **Early Career voices must be heard in these decisions!** Two methods:

2. Place Early Career members on every decision-making body

- Do Early Career members have a stake in the decision? If yes, their voice should be explicitly included
- Ensure they have a voice in every relevant vote



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BUT! The related burdens of advocating for change, identifying change methods, and implementing change should NOT be placed solely on EC shoulders.

- We need the support, the resources, and the **ACTION** of senior leaders in the field

Top-down: What can P5 do?

1. When prioritizing projects, careful consideration should be given to the training and development of the Early Career members who will work on these projects.
2. The recommendations laid out in the Snowmass Early Career report (and Community Engagement report) should be taken seriously, and incorporated into the final P5 report as appropriate.

[\[2210.12004\]](#)

Through the Snowmass process, we developed a number of recommendations with input from the early career community. Below we give a top-level summary of these recommendations. More detailed recommendations and their motivations are described in detail in the remainder of this chapter.

1. Institutions, experiments, and funding agencies should increase their commitment to adding and maintaining early career representation in decision-making bodies at all levels (e.g. review and advisory panels, governing bodies, etc.) and foster the development of early career organizations.
2. Institutions and funding agencies should address the need for economic equity for early career scientists by increasing the pay of early career positions to match industry equivalents and providing funds for improving meeting accessibility.
3. Funding agencies, experiments, and institutions should restructure the processes for reporting and investigation of discrimination and harassment to ensure true accountability and to robustly support equity, diversity, and inclusion in the field.
4. Career development and community efforts like outreach, mentoring, and advocacy should be recognized by institutions and funding agencies as critical tasks to the scientific output and health of the field. Institutions and funding agencies should provide support for service efforts, include this work in job expectations, ensure that faculty and scientists are given adequate time and credit for this work, and ensure that service work is equitably distributed.
5. Institutions should track career outcomes and adequately train early career scientists to move into a variety of job sectors, especially industry positions, through providing professional development opportunities, creating networking opportunities, and exposing early career scientists to a larger diversity of job sectors and mentors.
6. Institutions and funding agencies should continually examine and adapt their policies to address changing trends in HEPA, including changing job expectations, flexibility in remote work, and increasing competition in both the job market and funding opportunities.
7. Institutions and funding agencies should improve support for scientists with caregiving responsibilities, including encouraging reasonable work hours, providing adequate salaries, offering paid Medical and Family leave to all employees and supporting employees who use it, subsidizing or offering childcare, and fairly evaluating caregivers' drop in productivity in the context of current events of broad impact (e.g. COVID-19) in hiring and promotion committees.
8. Institutions and funding agencies should evaluate and assess the impacts of the COVID-19 pandemic over the coming years and adapt policy to support those most affected by COVID-19 and future events of similarly broad impact.
9. Institutions should provide comprehensive support to early career scientists, including resources, protections, and policies to support a healthy workplace culture and mental health.
10. Institutions and funding agencies should take steps to improve U.S. visa and immigration policies by implementing more inclusive hiring processes as well as advocating for updated policies and streamlined application processes for scientists and STEM professionals.

Bottom-up: What can *WE* do?

Beyond supporting Early Career members in our own groups:

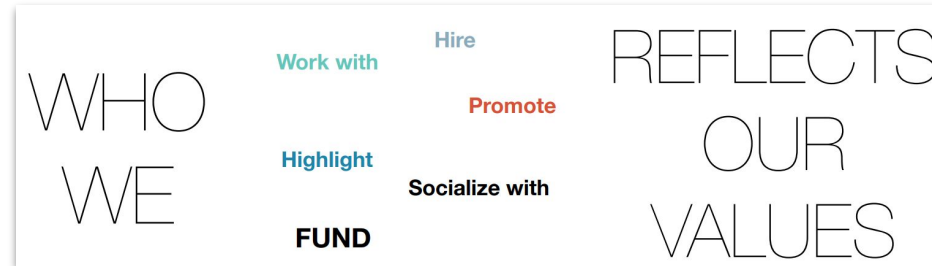
Listen to, take seriously, and act on the concerns of EC members in our circles

Advocate for EC representation in decision making bodies (experiments, departments, broader community, etc)

Support EC organizations in our collaboration or institution with resources, time and advocacy

Provide opportunities for outside EC members to share their science

Hire for technical skills AND leadership skills AND mentoring skills



[F. Psihas - Early Career Groups in HEP](#)

Conclusions

- Early Career community members are excited about a broad range of physics
 - Should be empowered to step into leadership roles
 - Should be included in decisions about the future
- Logistical and cultural issues continue to be pervasive, and Early Career members are on the forefront of making change
- Now facing the essential work of unifying around common goals: a long-term early career organization should be a priority
- **More than ever, early career scientists are joining the dialogue, and senior physicists should listen *and act***