

Snowmass Early Career: Takeaways for P5

[Julia Gonski](#)

DPF Executive Committee Early Career Member, 2021-2022



P5 Town Hall @ SLAC

4 May 2023

Overview of Snowmass Early Career (SEC)

- **Who we are:** early career (EC) physicists brought together by Snowmass process
 - Historically “Snowmass Young” [[2013](#), [2001](#)]
 - Building on a huge amount of EC interest during original nomination call (April 2020)
- “Early Career” = ~10 years from highest degree guideline, including engineers/technicians; *guideline not a hard rule!*
- 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

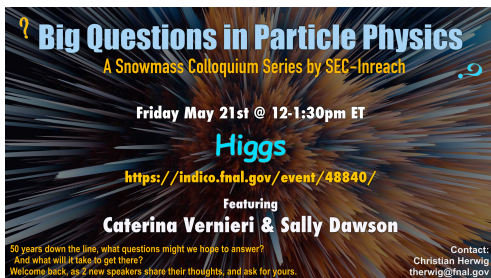
- Collecting opinions/experiences on careers, physics outlook, workplace culture, visa policies, COVID-19, & more [[FNAL News](#)]
- White paper: [2203.07328](#)

DEI

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

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](#)]



Dr. Marcela Hernandez



Dr. Cagliyan Kurdak



Dr. Brooke Russell



Dr. Sara Simon



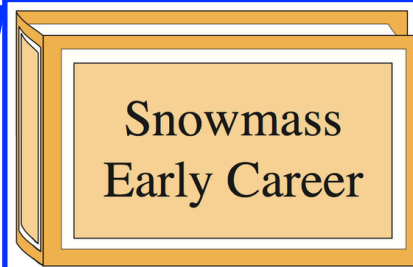
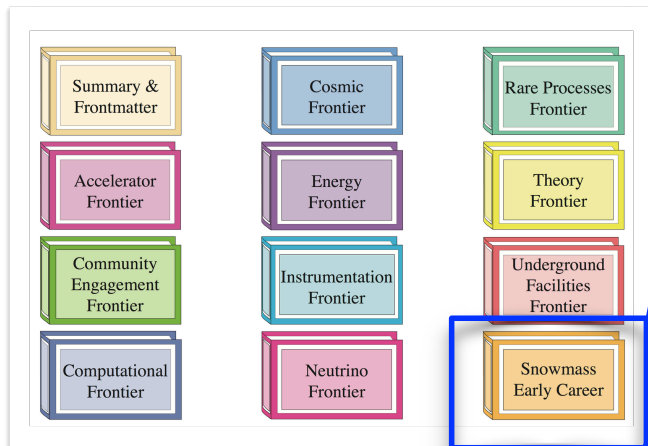
Dr. Sweeney Windchief

Long-Term Organization

- [LOI](#) submitted in Community Engagement Frontier

Snowmass Early Career Report

- For the first time in Snowmass history, 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

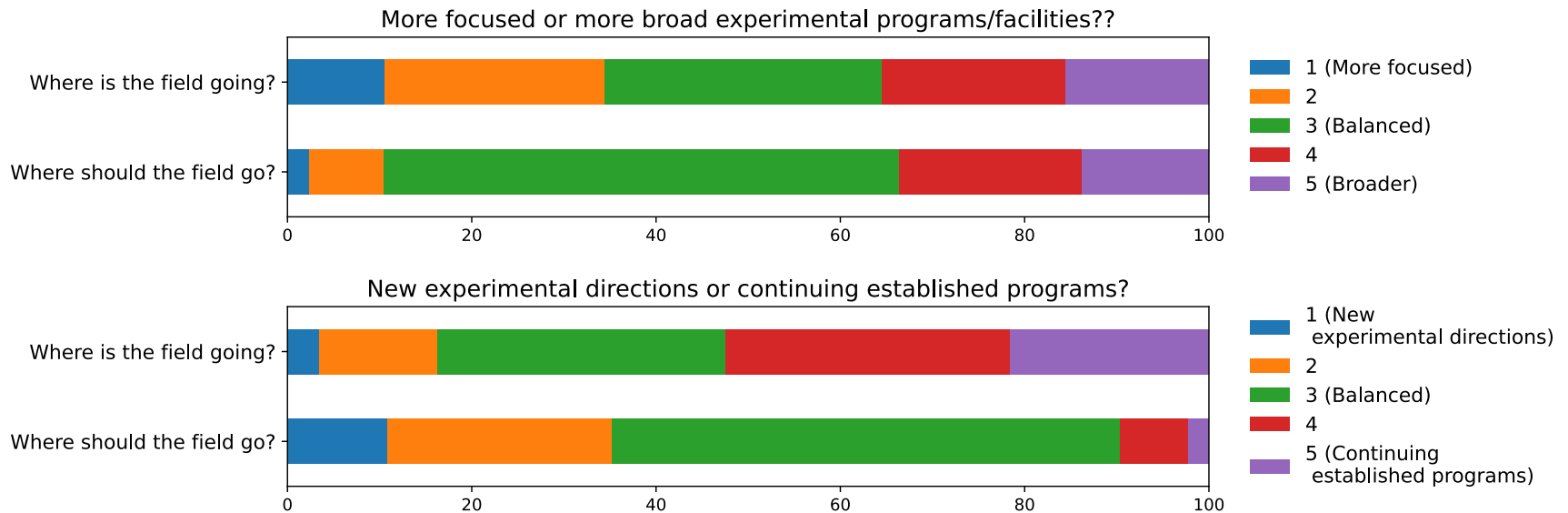
[arXiv:2203.07328](#)

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

Lessons Learned & Takeaways

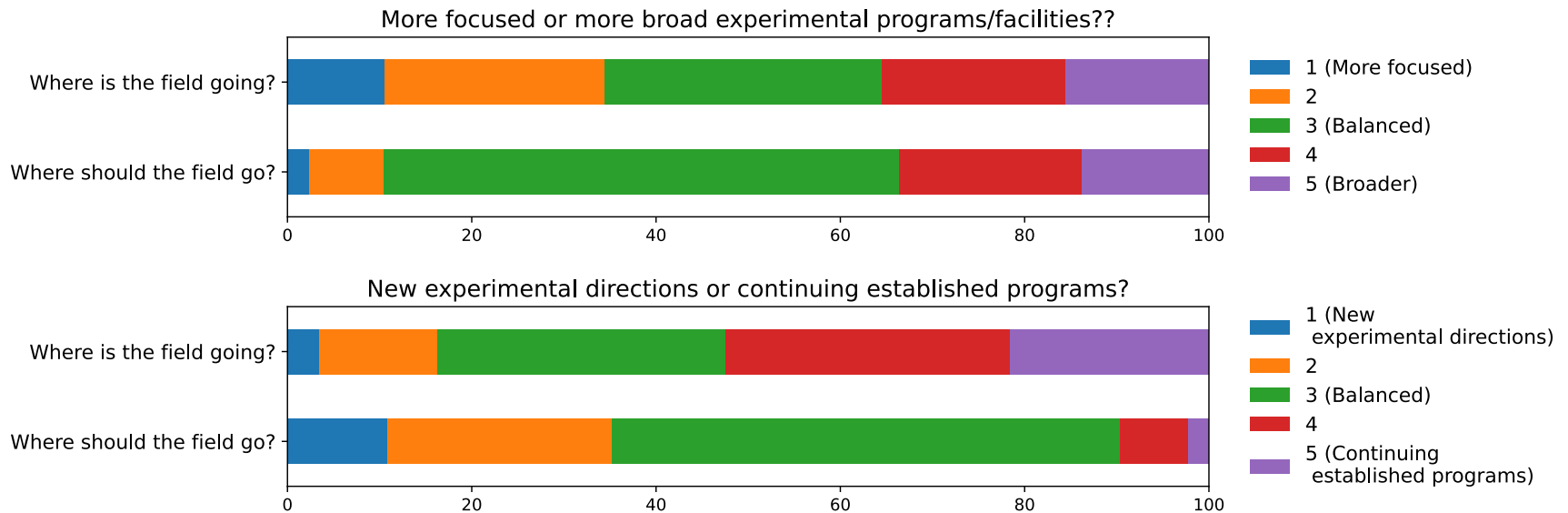
Lesson 1: Diverse Physics Outlook

- “The survey team made a deliberate effort to not ask for opinions on specific experiments.... there was concern that this type of question would simply reflect the relative number of participants from different experiments.”
- Should not choose “winners” and “losers”, avoid lobbying, promote compromise



Lesson 1: Diverse Physics Outlook

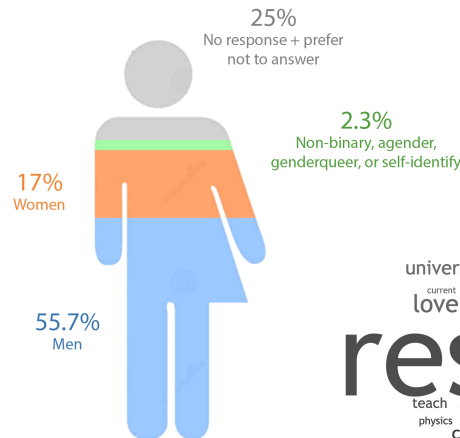
- “The survey team made a deliberate effort to not ask for opinions on specific experiments.... there was concern that this type of question would simply reflect the relative number of participants from different experiments.”
- Should not choose “winners” and “losers”, avoid lobbying, promote compromise



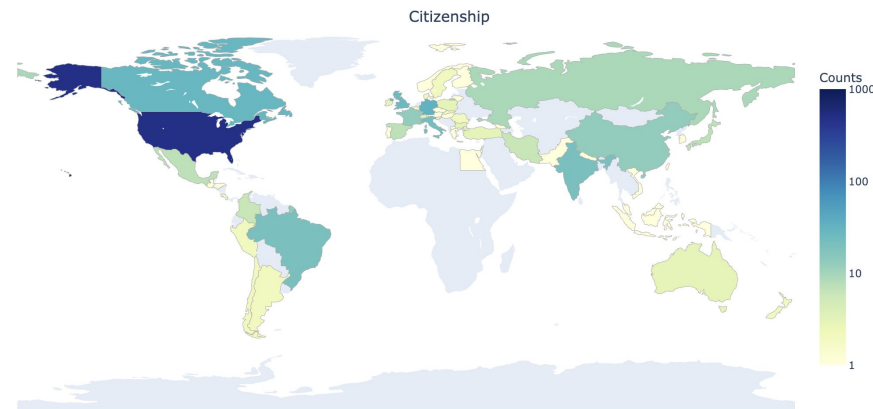
➔ Early career community is incredibly diverse (in both identity and physics opinion): be wary of overgeneralizing!

Lesson 2: Inclusion Focus

- SEC was designed to be completely inclusive: leadership positions were not appointed, but given freely on a volunteer basis
- Early career advocates were consistently at the forefront of:
 - Accessibility issues, eg. captioning, availability of childcare resources;
 - [Mental health, invisible disabilities](#), burnout;
 - Regulating power structures & properly addressing harassment;
 - The DPF Ethics Task Force/Committee & Community Engagement Frontier
- Lots of SEC work benefitted the entire Snowmass process: creation & maintenance of white paper databases, [inclusive leadership recommendations](#)

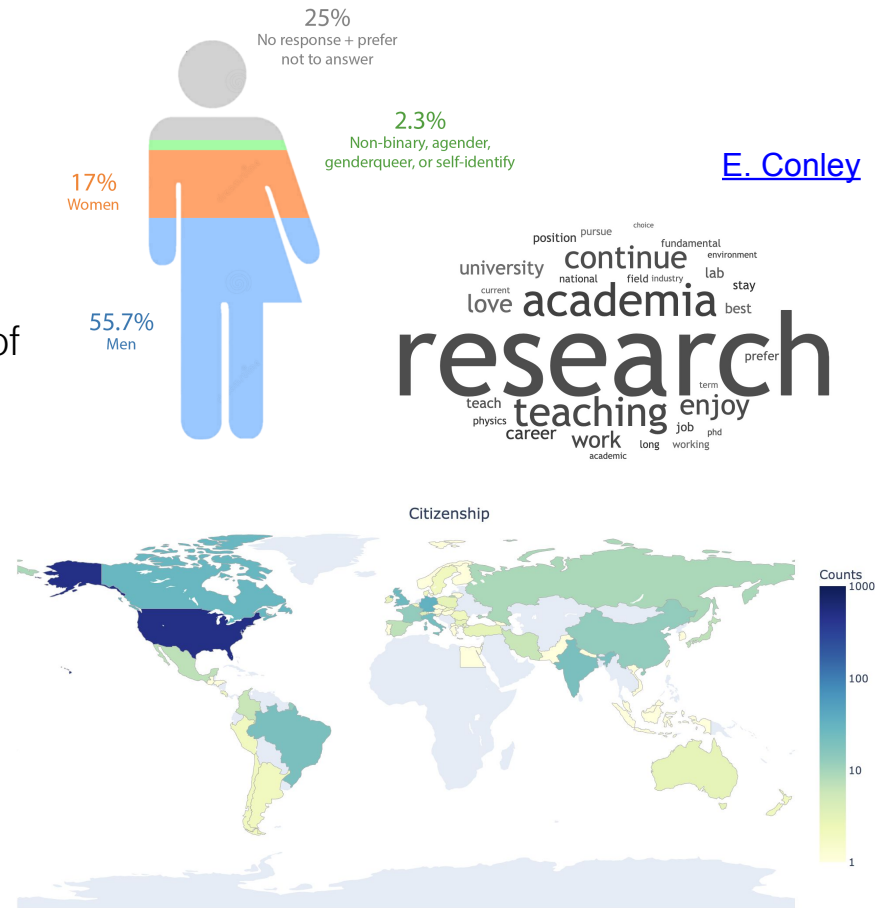


[E. Conley](#)



Lesson 2: Inclusion Focus

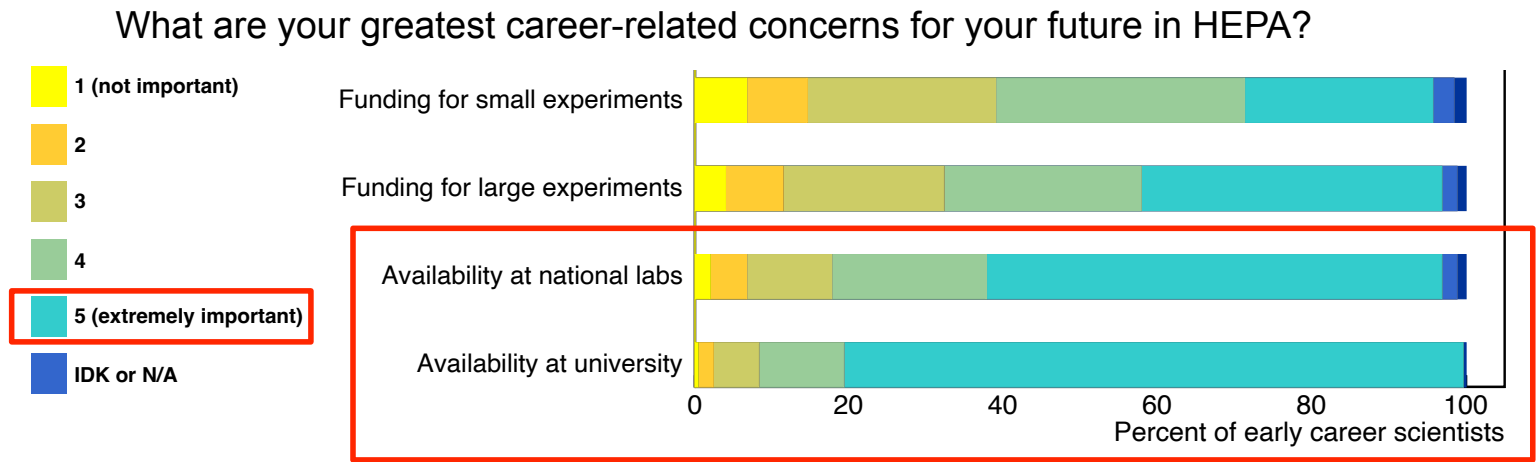
- SEC was designed to be completely inclusive: leadership positions were not appointed, but given freely on a volunteer basis
- Early career advocates were consistently at the forefront of:
 - Accessibility issues, eg. captioning, availability of childcare resources;
 - [Mental health, invisible disabilities](#), burnout;
 - Regulating power structures & properly addressing harassment;
 - The DPF Ethics Task Force/Committee & Community Engagement Frontier
- Lots of SEC work benefitted the entire Snowmass process: creation & maintenance of white paper databases, [inclusive leadership recommendations](#)



➔ Early career physicists care a lot about **equity, inclusion, & community well-being**; this work must be **incentivized, welcomed, and rewarded!**

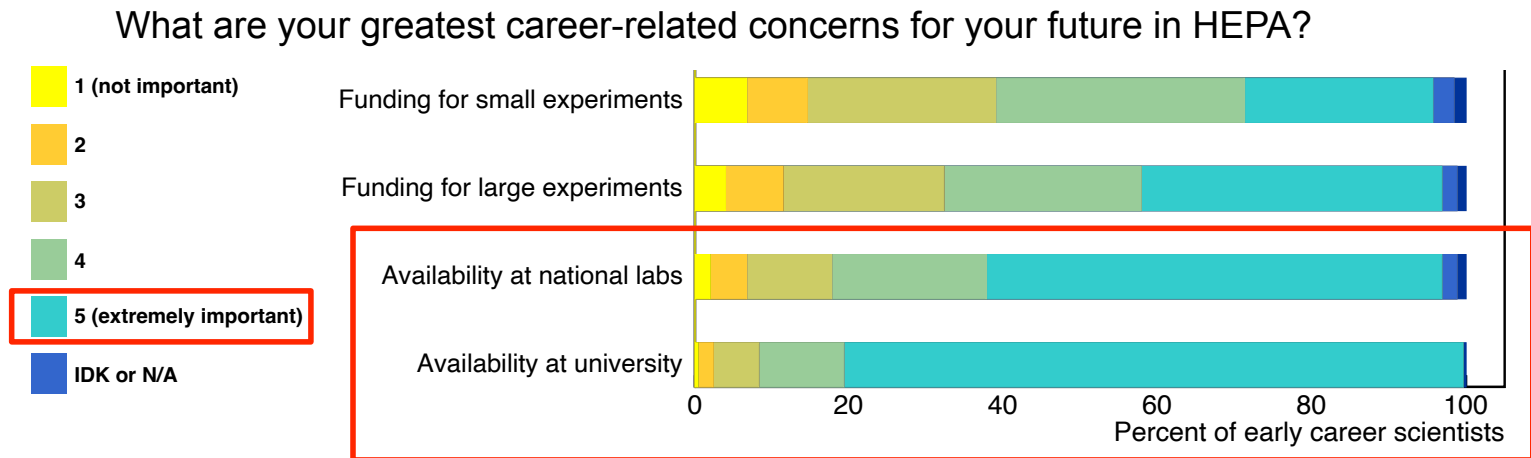
Lesson 3: Retention Challenges

- Many conversations about whether our career trajectory options are working for both the field and our EC members
- Of those currently applying or planning to apply for jobs, *academia is strongly preferred* (> 80% likely to apply for university & lab jobs)
- Respondents were most concerned about the availability of academic jobs



Lesson 3: Retention Challenges

- Many conversations about whether our career trajectory options are working for both the field and our EC members
- Of those currently applying or planning to apply for jobs, *academia is strongly preferred* (> 80% likely to apply for university & lab jobs)
- Respondents were most concerned about the availability of academic jobs



- ➔ Early career physicists *want to stay* but are worried about academic employment; we should be:
1. Searching for ways to **retain talent** (more positions, alternative career paths)
 2. **Extrapolating trends** to determine expected number of scientists for future projects

Lesson 4: Long-Term Organization


- We have a chance with P5 to address our community principles & make sure they are enabling the brightest physics future
- Competition is everywhere (scarcity of money, projects, positions...)
- What is best for the early career community is to *unify & come together; for this P5 and for future P5s!*

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^{§3}, Sara M. Simon^{¶3}, and Pranava Teja Surukuchi¹⁰

On the Behalf of Snowmass Early Career
August 31st, 2020

- 
- ❖ Builds a single constituency with a stronger voice
 - ❖ EC seat at the table in community governing bodies (APS/DPF connection?)
 - ❖ Networking & peer connectivity

Lesson 4: Long-Term Organization

- We have a chance with P5 to address our community principles & make sure they are enabling the brightest physics future
- Competition is everywhere (scarcity of money, projects, positions...)
- What is best for the early career community is to *unify & come together; for this P5 and for future P5s!*

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^{§3}, Sara M. Simon^{¶3}, and Pranava Teja Surukuchi¹⁰

On the Behalf of Snowmass Early Career
August 31st, 2020

- ❖ Builds a single constituency with a stronger voice
- ❖ EC seat at the table in community governing bodies (APS/DPF connection?)
- ❖ Networking & peer connectivity

➔ Our field needs a unified early career perspective, and the time is right to instantiate a formalized **long-term early career organization** to coordinate this

Executive Summary Recommendations

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.

- ▶ **Early career representation in decision-making**
- ▶ **Career development: adequate salaries, workplace resources, training for various sectors**
- ▶ **Community equity & well-being: addressing harassment, caregiver resources, visa/immigration policies, proper incentives/rewards for community work**

[[2210.12004](#)]

Conclusions

- Very motivated early career community ready for P5 and to execute the future of the field!
- Work of Snowmass Early Career organization (2020-2022) summarized in SEC chapter of Snowmass Book
- More than ever, early career scientists are joining the dialogue, and senior physicists are listening
- Now facing the essential work of unifying around common goals: a long-term early career organization should be a priority
- Get in touch!
 - DPF Executive Committee Early Career Member 2023: [Kelly Stifter](#)
 - snowmass-young@fnal.gov

Backup

SEC Survey Flow

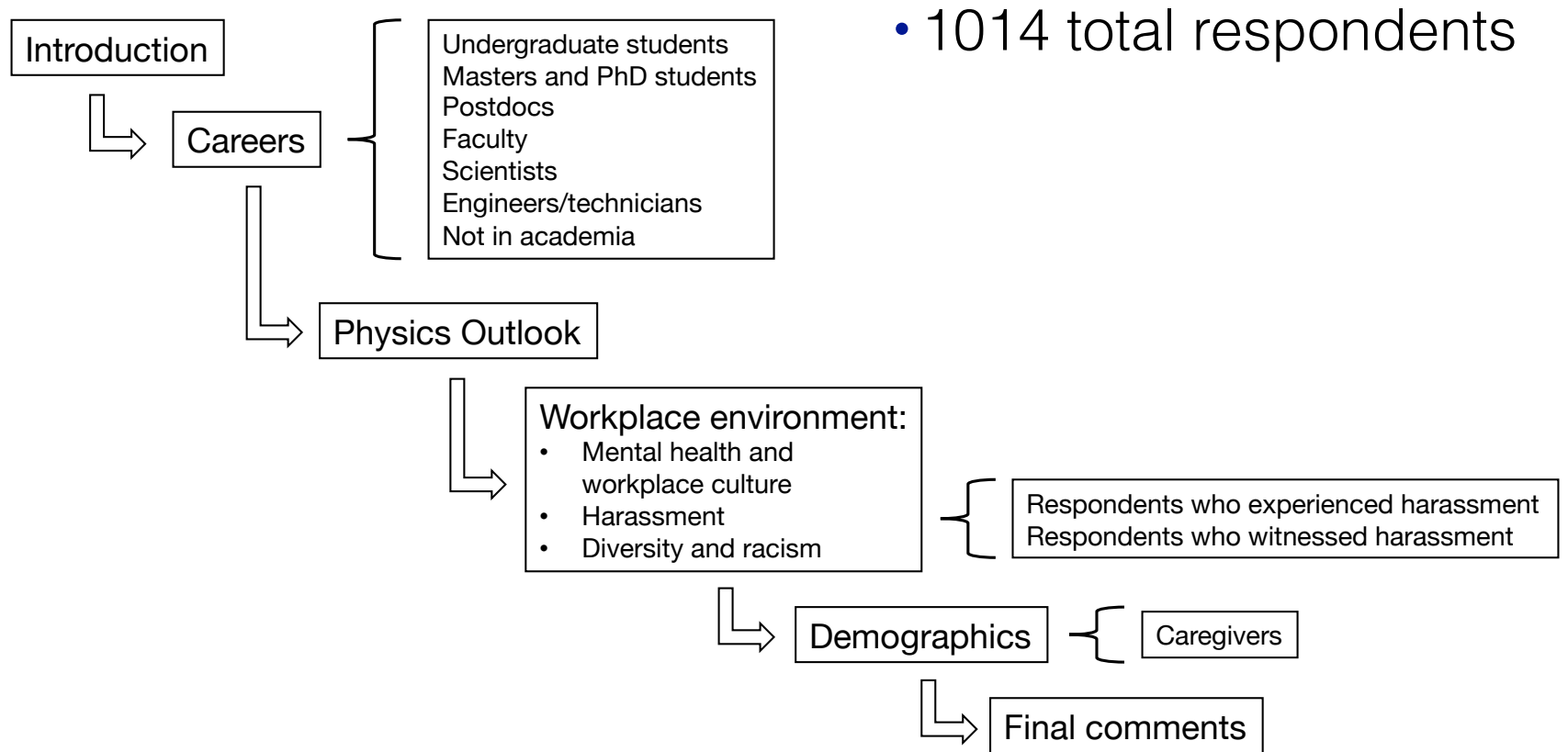


Figure 0-2. General overview of the 2021 Snowmass Community Survey. The arrows represent the overall flow of the survey ordered by the questions respondents viewed earliest, and the brackets present some of the display logic utilized in the survey.

Early Career Organizations in Physics

• F. Psihas [[SEC CSS Plenary](#)]

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

**These
already exist!**

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)

**These should be
institutionalized!**

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

It REALLY is about the science

Snowmass 2013 Young Physicists Science and Career Survey Report

J. Anderson^a, J. Asaadi^{*b}, B. Carls^a, R. Cotta^c, R. Guenette^d, B. Kiburg^a, A. Kobach^e,
H. Lippincott^a, B. Littlejohn^f, J. Love^g, B. Penning^{ah}, M. Soares Santos^a, T. Strauss^{hi},
A. Szelc^d, E. Worcesterⁱ and F. Yu^a

Young Physicists' Forum

T. Adams, M. Bishai, K. Bloom,^{*} V. Boisvert,[†] L. Coney, R. Erbacher,[†] B.T. Fleming,[†] J. Formaggio,
D. Gerdes, A. Green, S. Heinemeyer,[†] K. Hoffman,[†] B. King, J. Krane,[†] S. Lammers, K. Lynch,
D. Marfatia,[†] J. McDonald,[†] K. McFarland, G. Moortgat-Pick,[†] T. Nunnemann, M. Palmer,[†]
M. Popovic, C. Potter,[†] A. Soffer,[†] Z. Sullivan,[†] M. Toharia,[†] W. Walkowiak, and G. Zeller[†]

Early Career Events at CSS

1. Tuesday July 19, 7:30pm: EC networking event with industry partners
2. **Wednesday, July 20, 5:30 - 7:30pm**: informal EC social event at Ravenna Brewing Co. (20 minute walk from campus)
3. Lunch on Thursday July 21, 12:30 pm: conversation led by early career physicists on Mental Health, Invisible Disabilities, and Neurodiversity
4. Lunch on Friday July 22, 12:30 pm: early career panel organized in collaboration with the Community Engagement Frontier
5. Sunday July 24, 2 to 3:30pm: Snowmass Early Career plenary

14:00	Experimental Early Career Organizations in HEP <i>110, Kane Hall</i>	<i>Fernanda Psihas Olmedo</i> 14:00 - 14:20
	SEC Survey: Introduction and Methods <i>110, Kane Hall</i>	<i>Erin Conley</i> 14:20 - 14:38
	SEC Survey: Physics Outlook Findings <i>110, Kane Hall</i>	<i>Joshua Barrow</i> 14:38 - 14:51
15:00	SEC Survey: Career Survey Findings <i>110, Kane Hall</i>	<i>Ivan Lepetic</i> 14:51 - 15:09
	Snowmass Early Career Long-Term Organization <i>110, Kane Hall</i>	<i>Tiffany Lewis</i> 15:09 - 15:24