

2021 Snowmass Community Survey: Intro and Methods

Erin Conley
2022 July 24
Snowmass Community Summer Study

Snowmass 2021 Community Survey Report

from the Snowmass Early Career Survey Core Initiative Team

Garvita Agarwal¹, Joshua L. Barrow^{2,3}, Mateus F. Carneiro⁴, Erin Conley⁵,
Maria Elidaiana da Silva Pereira⁶, Sam Hedges⁵, Samuel Homiller⁷, Ivan Lepetic⁸, and
Tianhuan Luo⁹

Abstract

The Snowmass Community Survey was designed by the Snowmass Early Career (SEC) Survey Core Initiative team between April 2020 and June 2021, and released to the community on June 28, 2021. It aims to be a comprehensive assessment of the state of the high-energy particle and astrophysics (HEPA) community, if not the field, though the Snowmass process is largely based within the United States. Among other topics, some of the central foci of the Survey were to gather demographic, career, physics outlook, and workplace culture data on a large segment of the Snowmass community. With nearly 1500 total interactions with the Survey, the SEC Survey team hopes the findings and discussions within this report will be of service to the community over the next decade. Some conclusions should reinforce the aspects of HEPA which are already functional and productive, while others should strengthen arguments for cultural and policy changes within the field.

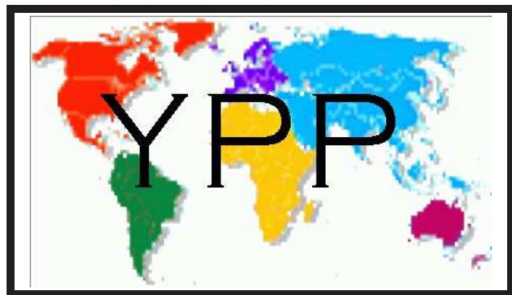
Previous Snowmass Surveys led by early career physicists in 2001 and 2013

2001: [arXiv:hep-ex/0108040](https://arxiv.org/abs/hep-ex/0108040)

The Young Physicists Panel (YPP)

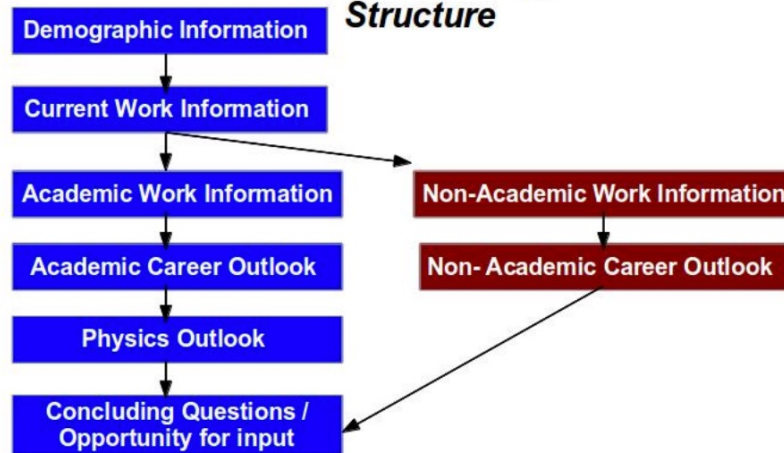
presents

Results of the Survey on the Future of HEP



2013: [arXiv:1307.8080](https://arxiv.org/abs/1307.8080)

SYP Survey Structure



Survey initiative as part of [Snowmass Early Career \(SEC\) group](#)

For the Snowmass 2021 Survey, we wanted to focus more on human factors, experiences, trajectories, and broad opinions within the Snowmass community.

Based on discussions with past authors, evaluation of questions in previous Snowmass surveys

The 2021 survey team was interested in asking about many different topics...

Demographics

Careers

Physics Outlook

Workplace Culture

Diversity and Racism

Caregiving Responsibilities

Impacts of COVID-19

Creating questions for the 2021 survey

“Efficacy survey” used to evaluate questions that appeared in 2001 and 2013 surveys. Respondents provided their opinions on whether to keep or remove a question similar to one that appeared previously.

Weekly discussions based on efficacy survey results helped guide construction of many questions that appeared in the 2021 survey.

What is your opinion of this question and its options? You can select/click regions; one click for green is "Like", two clicks for red is "Dislike", and zero or three clicks is "Neutral". PLEASE CLICK ALL REGIONS THAT YOU LIKE/DISLIKE.

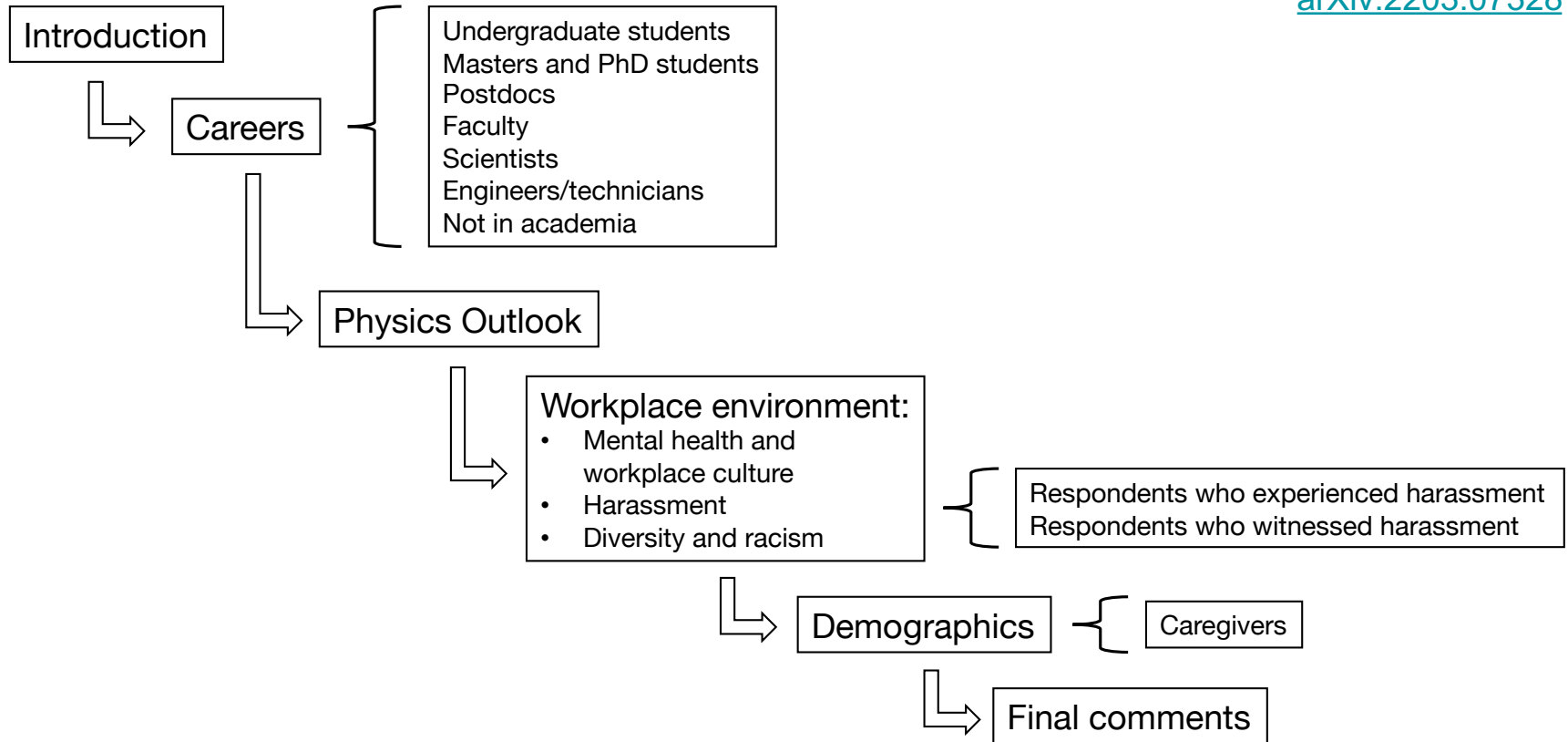
If you have further comments or suggestions related to this question, click once (make green, "Like") on the empty region in the image, and enter your comments in the next question.

1. At what stage are you currently in your career [career]?
 - (i) Undergraduate
 - (ii) Graduate student
 - (iii) Postdoc
 - (iv) Untenured faculty or term staff
 - (v) Tenured faculty or permanent staff

Example question from the efficacy survey

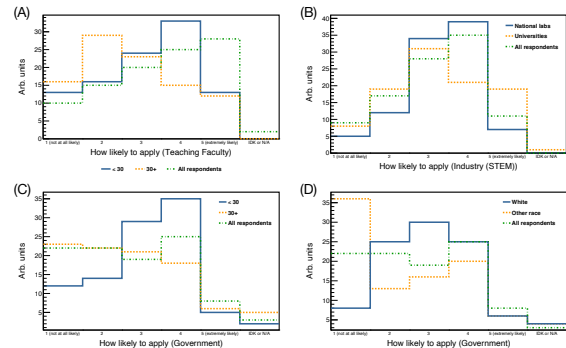
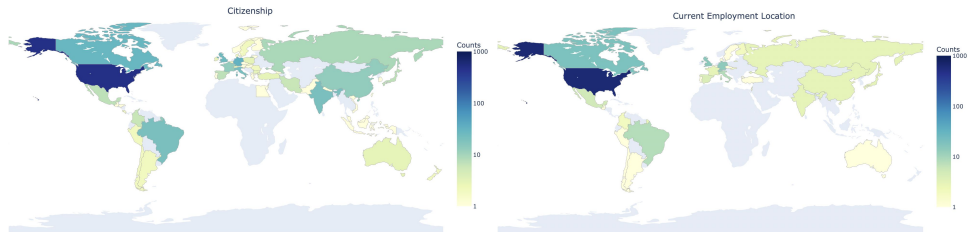
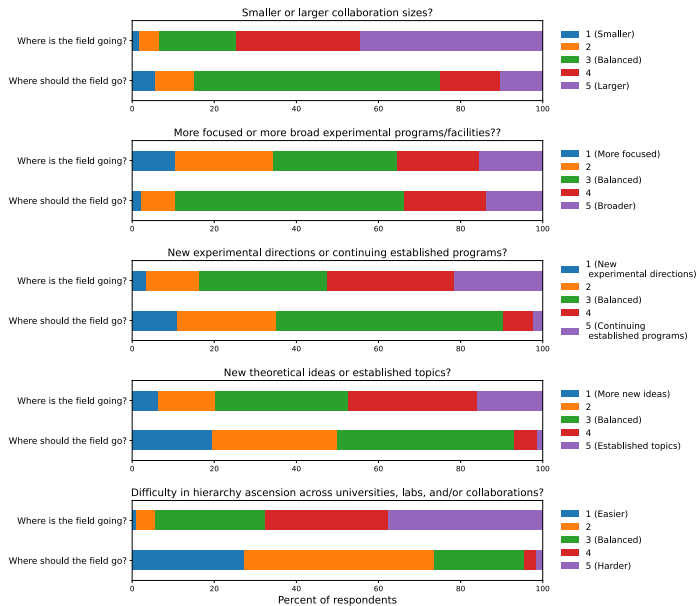
2021 survey flowchart

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



2021 survey analysis methods

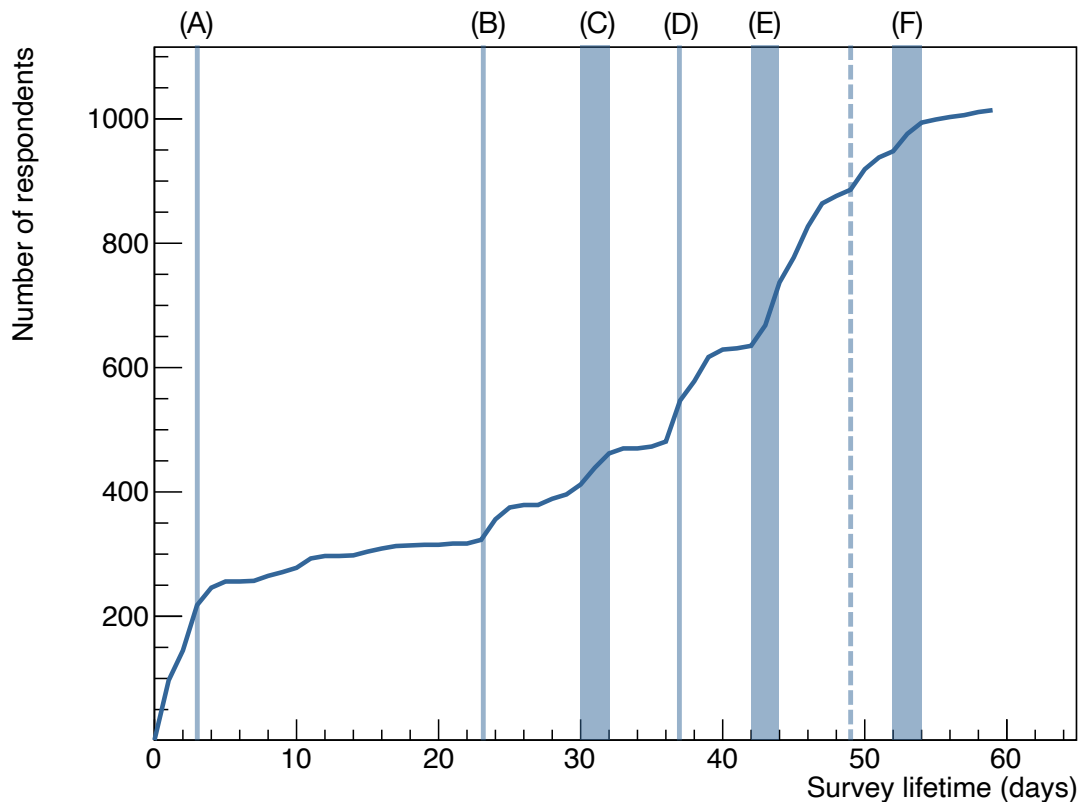
- Primary focus to protect the respondents' privacy: raw numbers were removed and distributions were re-normalized
- Group responses based on provided demographic information (e.g., gender, age, Snowmass frontier, etc.)



Metadata for the 2021 survey

- Original timeline: June 28 – August 15, 2021 (49 days)
 - Extended survey live-time until August 26, 2021 (59 days active)
- 1462 total “interactions” over survey lifetime – opened the link, finished the entire thing, and everything in between
- 1014 total responses (“response” = an interaction in which the respondent saw at least 44% of the survey, i.e., made it through the career-related questions)

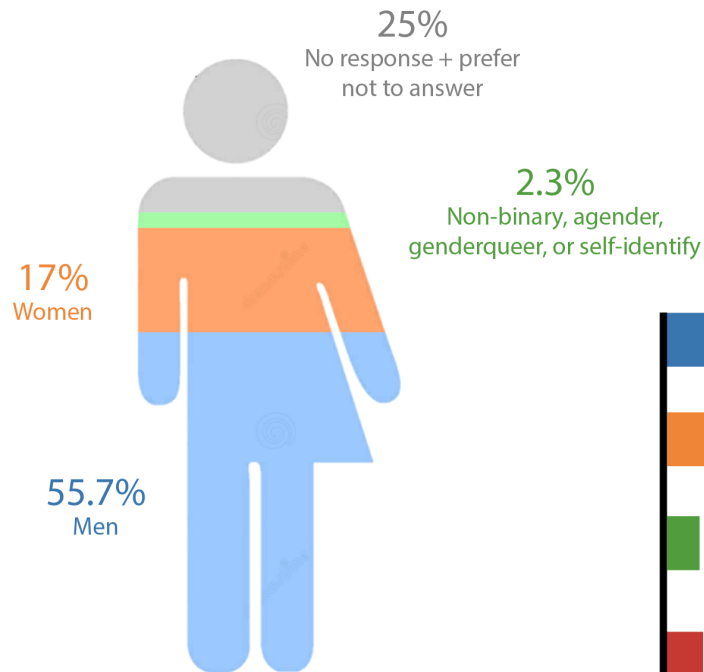
Responses over time show moments where advertising + looming deadlines made an impact.



- (A) Fermilab Today article and email to the Fermilab users mailing list
- (B) Advertisement to the Deep Underground Neutrino Experiment collaboration
- (C) Targeted advertising to various neutrino and astrophysics collaborations
- (D) DPF Newsletter + a joint APS+DAP email
- (E) Reminder sent to the Fermilab and Snowmass mailing lists
- (F) Notification about deadline extension to Fermilab and Snowmass communities

2021 survey respondents

Not currently in
academia (7%)

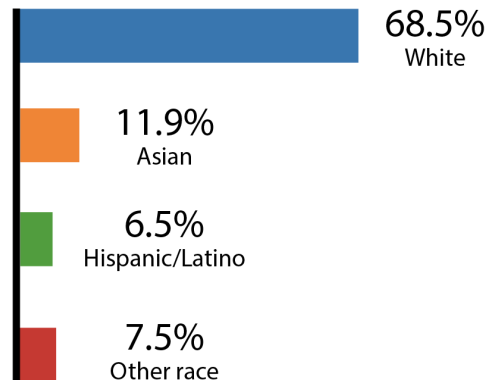
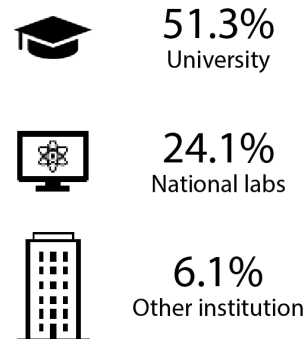


37
Median Age

Other (e.g., undergrads,
engineers, technicians)
(4%)

Primary workplaces

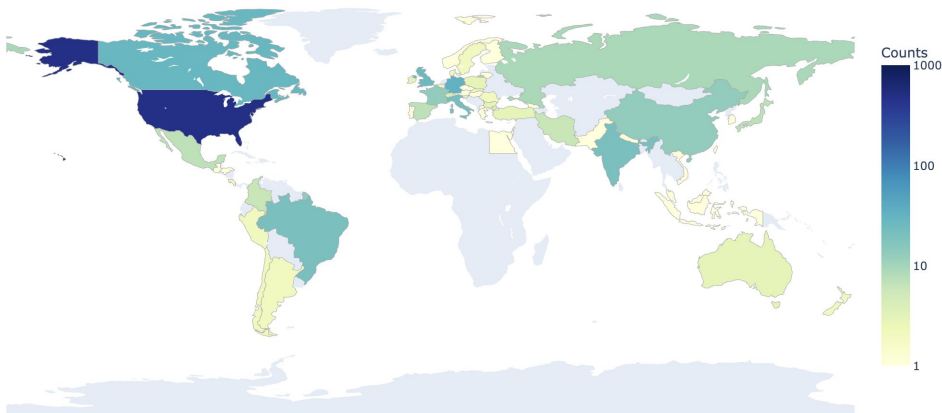
Prior to COVID-19 pandemic.
Not pictured: prefer not to answer, no response



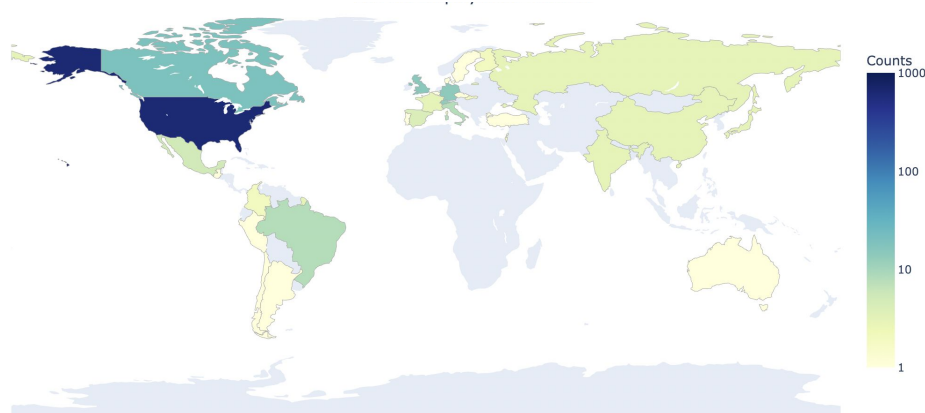
Not pictured: prefer not to answer, no response

2021 survey respondents

Citizenship



Current Employment Location



35%

of non-US residents have a green card or permanent residence

Most common U.S. Visas

Percent of non-US residents with a Visa

J1 visa (37%)

F1 visa (35%)

H1-B visas (25%)

Conclusions

- The SEC Survey Initiative successfully ran a community survey covering the different aspects of the HEPA community (e.g., physics outlook, career, diversity, impacts of COVID-19)
 - Reach might have been affected by the “online fatigue” due to the COVID-19 pandemic
- Survey respondents provide a sample of HEPA community: most of the respondents were white men, in their 30s, working at a university
- White paper is on arXiv ([2203.07328](https://arxiv.org/abs/2203.07328)) and presents extensive results for the different topics covered in the survey

Backup slides

Qualtrics fraud detection

Built-in Qualtrics features that detect duplicate submissions and to detect bots

- No 2021 survey submissions were tagged as duplicate
- A handful of survey interactions flagged as potential bots; responses were examined on an individual basis
- [More info about the features](#)