

Snowmass Frontier Report Questions *DRAFT*

DPF Chair Line

Dec. 6, 2021

<https://docs.google.com/document/d/1zdvxITvRlGpe8vDbzLOPQv8uBl-z08J3sBqShHykL9U/edit?usp=sharing>

Preamble

The charge of the Snowmass Process is to “define the most important questions in the field of particle physics and identify promising opportunities to address them.” The ten Snowmass Frontiers span five scientific areas of particle physics addressing fundamental questions about the universe, four technical areas which enable scientific work, and one addressing the community development needed to maintain a vibrant profession and to engage with society. In preparation for the reports from these ten frontiers, and to aid in synthesizing a comprehensive vision for U.S. particle physics, we ask that each frontier address the following questions.

1. Planning for 2025-2035 with a view toward 2050

- What are the important scientific questions in your frontier of particle physics during this period? (Energy, Neutrino, Rare Process, Cosmic, and Theory Frontiers)
- What enabling tools, technologies, or facilities studied by your frontier are needed to address the pressing scientific questions in particle physics during this period? (Accelerator, Instrumentation, Computational, and Underground Facilities Frontiers)
- How can we ensure that the US particle physics community is vibrant, inclusive, diverse, and capable of addressing the scientific questions identified, and of fulfilling our obligations to society during this period? (Community Engagement Frontier)

2. Context

What can be expected from ongoing, approved, or planned scientific, technical, or community programs in addressing the issues identified by your frontier?

3. Opportunities

- What opportunities identified by your frontier are there for new scientific, technical, or community activities to create transformative change in particle physics, on what timescales could these occur, and what resources are required to realize these activities?
- What investments need to be made during 2025-2035 for the continuing scientific, technical, or community progress identified by your frontier in the decades beyond, on what timescales can these be implemented, and what resources would be required?

4. Collaboration

What opportunities exist for cross-frontier, cross-disciplinary, or international collaboration and cooperation in the coming decade to enhance our ability to address the issues identified? How do these collaborations affect the timescales or resources needed for these activities?

5. Additional Input

Are there other issues identified by your frontier that are not included in the responses to the questions above?

- In particular, are there adverse scientific, technical, or community impacts from the COVID-19 pandemic that still need to be addressed?

Next Steps

- Comments from Frontier Convenors requested by Jan. 3, 2022
 - Please comment directly on Google Doc
 - <https://docs.google.com/document/d/1zdvxITvRIGpe8vDbzLOPQv8uBI-z08J3sBqShHykL9U/edit?usp=sharing>
- Additional input:
 - Frontier Group Convenors
 - JoAnne Hewett, for HEPAP
- Finalize by ~Jan. 15, 2022