The Snowmass Process for Neutrinos

Kate Scholberg, Patrick Huber, Elizabeth Worcester
Neutrino Frontier Conveners

Welcome to Snowmass 2021

The Snowmass Process is organized by the Division of Particles and Fields (DPF) of the American Physical Society. Snowmass is an opportunity for the entire HEP community to come together to identify and document a vision for the future of particle physics in the U.S. and its international partners.

Snowmass is a **HEP *community*** activity...
it's a US strategic planning activity, but ***international***

U.S. Strategic Planning Process for Particle Physics

~year-long process
Snowmass Community-Wide "Science" Study
Organized by Division of Particles and Fields (DPF) of APS

Input to P5

~year-long process
P5 (Particle Physics Project Prioritization Panel)
formulate a 10-year plan (20-year vision) within funding constraints
Subpanel of HEPAP, High Energy Physics Advisory Panel for DOE/NSF funding agencies

Other input:

Long-Range Plan for Nuclear Science (ν-less double beta decay)
Decadal Survey on Astronomy and Astrophysics (dark energy, CMB)
HEPAP Accelerator R&D Subpanel Report

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Organizational Structure

Snowmass Advisory Group: see `snowmass21.org` for all names

- DPF Executive Committee
- Representatives from other Divisions

Steering Group

- Chair: Young-Kee Kim
- Chair-Elect: Tao Han
- Vice Chair: Joel Butler
- Past Chair: Prisca Cushman

- DPB: Sergei Nagaitsev
- DNP: Yury Kolomensky
- DAP: Glennys Farrar
- DGRAV: Gabriela Gonzales

- Other Executive Committee members
- International Community Representatives
- Editor
- Communication and Technical Liaisons

Ten "Frontiers" with three co-conveners each:

Energy Frontier	Accelerator Frontier
Neutrino Physics Frontier	Instrumentation Frontier
Rare Processes and Precision Measurements	Computational Frontier
Cosmic Frontier	Underground Facilities
Theory Frontier	Community Engagement Frontier

Neutrino Physics Frontier

- Co-Conveners

Patrick Huber
Virginia Tech

Kate Scholberg
Duke University

Elizabeth Worcester
BNL

- Topics relevant to the physics of neutrinos
- Topical Groups and Co-Conveners: note many overlaps in the topics

Topical Group	Co-Conveners			
Neutrino Oscillations	Peter Denton	Megan Friend	Mark Messier	Hiro Tanaka
Sterile Neutrinos	Georgia Karagiorgi	Bryce Littlejohn	Pedro Machado	Alex Sousa
Beyond the SM	Pilar Coloma	Lisa Koerner	Ian Shoemaker	Jae Yu
Neutrinos from Natural Sources	Yusuke Koshio	Gabriel Orebi Gann	Erin O'Sullivan	Irene Tamborra
Neutrino Properties	Carlo Giunti	Ben Jones	Lisa Kaufman	Diana Parno
Neutrino Cross Sections	Jonathan Asaadi	Baha Balantekin	Kendall Mahn	Jason Newby
Nuclear Safeguards and Other Applications	Nathaniel Bowden	Jon Link	Wei Wang	
Theory of Neutrino Physics	André de Gouvêa	Irina Mocioiu	Saori Pastore	Louis Strigari
Artificial Neutrino Sources	Laura Fields	Alysia Marino	Pedro Ochoa	Josh Spitz
Neutrino Detectors	Josh Klein	Ana Machado	Dave Schmitz	Raimund Strauss

- Also: "Liaisons" with other Frontiers

Meetings

- ν **Neutrino Town Hall: July 17, 2020 (online, registration required)**
- **Community Planning Meeting: November 2-4, 2020 (TBD)**
- ν **Neutrino Frontier Meeting: March/April 2021 time frame (TBD)**
- **Snowmass 2021: July 11-20, 2021 (Seattle)**

+ many others, for topical groups, joint w/other Frontiers, etc.

See Snowmass Calendar: `https://snowmass21.org/meetings/start`

and Indico: `https://indico.fnal.gov/category/1098/`

Next Up: Neutrino Town Hall

- **July 17, 2020**, 9 am-noon US Central (online, **registration required**)

https://indico.fnal.gov/event/43581/

Registration will close **July 6**

Discussion in three categories:

1. Physics goals and motivation
2. Theory and neutrinos
3. Structure of the program

Register to make 3-minute oral comments

Written questions to conveners are welcome

Input on specific physics/projects is encouraged for LOIs, *not* this Town Hall

Input to Snowmass

Letters of Interest short, and short term, for conveners to plan

- Two-pagers
- Due August 30, 2020
- Can be "concept" or "proposed project"
- **Purpose is for topical group conveners to use for planning activities**
- Can submit to multiple Frontiers or topical groups
  (we'll make sure they get to the right places)
- Submit here: `https://snowmass21.org/loi`

Contributions the main Snowmass content

- Any length (but "executive summary" recommended for long ones)
- Final versions due July 31, 2021
- Can be "concept" or "proposed project"; need not correspond to LOI
- Submit to arXiv first
- **Will be part of the overall Snowmass output**
- Submission instructions: `https://snowmass21.org/submissions/start`

Where to Find Information

Links to everything: **`snowmass21.org`**

Slack: `snowmass2021.slack.com`
(`#neutrinos` and topical channels)
for **discussion**

Mailing lists: SNOWMASS-NEUTRINO-FRONTIER@fnal.gov
+ topical group lists
for **announcements**

Please engage!