

# Summary of Planning for Preparatory Meetings

J. Butler

Snowmass All Conveners meeting

Dec. 6, 2021

# Meeting Schedule

Contributed Paper deadline	frontier	dates		Host	
	Instrumentation	2/14 – 2/18	Hybrid	Stony Brook	10,000
	Theory	2/23 – 2/25	Hybrid	KITP	10,000
	Neutrino	3/16 – 3/18	Hybrid	ORNL	10,000
	Energy	3/28 - 4/1	Hybrid	Brown	10,000
	Rare Processes	5/16 – 5/18	Hybrid	Cincinnati	10,000
	Community Engagement	5/24 – 5/26	Hybrid	BNL	10,000

- No conflicts among "All-Frontier" meetings so far. We should try to maintain this. April 9-12 is the APS April meeting and is out of bounds.

# Proposal Preparation

- Abid Patwa has asked me to explore funding through a Field Work Proposal (FWP)
  - Would not be part of a solicitation, but be placed by Fermilab
  - Would result in subawards to each host institute
  - Funds come from the programs – not all DOE Program Managers have agreed
- A Fermilab Administrator who knows the latest procedure has been assigned to help
  - There are some complications, which she believes will not prevent this from going forward
- If this process is applicable, the actual paperwork is not too burdensome
- We have to submit this in the next few weeks

# Proposal Description (draft)

- Every ten years, US HEP updates its vision of the field. These exercises, spanning a year, are known as the Snowmass Community Studies. In April 2020, we kicked off a new study that was to conclude with a workshop at the University of Washington in Seattle in July 2021. Because of COVID-19, we delayed the meeting until July 2022.
- Contributed papers, describing ideas, proposals, and projects are due by 15 March, for discussion in Seattle, where a draft report will be produced. The final report will be submitted to HEPAP in the fall of 2022. The report will describe the goals for US HEP, provide input to the Prioritization Panel that will follow, and deliver a unified and powerful message to the government and public.

# Proposal Description (draft)

## Typical Requests for Support

- To help finalize the contributed papers **and frontier reports**, six of the frontiers (major physics and technical groups) plan to hold "all-frontier" meetings, between mid-February and **late May**. This proposal requests support to enhance the participation in these meetings by Early Career physicists, researchers from under-represented minorities, and people with disabilities. Funds will support waivers or reduction of registration fees and special travel allowances, and support for closed captioning, special AV equipment, and remote participation.

If you have something else in mind, please let me know ASAP.

# What I need from you - I

- In the following six paragraphs, there are brief descriptions of each meeting (expected number of white papers, expected number of large, summary-type white papers, special considerations, use of funds in the four categories above)
- **Energy:**
- **Neutrino:**
- **Rare Processes:**
- **Theory:**
- **Instrumentation:**
- **Community Engagement:**

I would like to have these by Wednesday morning

# What I need from you - II

- From each, the name of contact physicist and an administrator at the hosting institute
- A budget breakdown (not sure what exactly we need)

# Comments

- Too late for any more all-frontier meetings
  - No support for topical subgroup or cross-frontier meetings
- All meetings have a remote component but most also have an in-person component
- Our initial requests added up to more than we were told was reasonable and the total is way above any guidance we received
  - Not all Program Managers appear to be supportive
- There was a plan to host an EF young scientists meeting that was to be virtual only It appeared to cause confusion
  - We might want an all-Snowmass EC virtual meeting just before Snowmass



# Topical Lectures and Discussion Sessions

- An important aspect of Snowmass is for there to be a broad understanding by the community of projects being developed in all frontiers
- Although we have been emphasizing cross-frontier communications, the pandemic and the “pause”, the frontier organization itself, the focus on white paper preparation early, the limited number of preparatory meetings, and the short Community Summer Study meeting make achieving this understanding difficult
- The issues for this Snowmass are also different from 2013, with possibly more emphasis on support of **R&D** for large future initiatives than support of new construction in this planning cycle
  - These R&D projects may require expensive demonstrator phases in this period
- In similar circumstances, DPF has sponsored a series of seminars on broad topics with an emphasis on providing a lot of public discussion on key issues

# Current list proposed by FNAL for short lecture/discussion series

- “Collider Future” as a participant or a host site **(dates, topics announced)**
- “Muon Future”, studies of properties and rare decays (Muon Collider included in first group) and experiments that address similar issues **(dates and topics ready to be announced)**
- “Neutrino Future”, other neutrino experiments including extensions to DUNE near and far detector, neutrino properties and cross sections, etc **(proposed)**
- “Dark Matter Future”, mainly possible fixed target and other non-collider approaches **(in discussion)**
  - Other experiments that need protons might also be considered

The motivation for this group is that they all bear on the question of which facilities the US program should provide domestically and should participate in internationally. Since we have only one laboratory , Fermilab, dedicated to HEP, Fermilab has an interest in all these areas.

# Snowmass Agora on Future Colliders

The events will be hosted by the Future Colliders initiative at Fermilab. The plan is to discuss both near and far future collider proposals, in different stages of development, synergistically grouped into five categories:

- **Linear e+e- colliders** Dec. 15, 2021
- **Circular e+e- colliders**
- **Muon colliders**
- **Circular pp and ep**
- **Advanced colliders**

Please encourage people from your frontier to attend!

The events will take place once a month from December 2021 till April 2022, on Wednesdays 3-5 p.m. CST. The detailed agenda will be announced soon. We request you to please save the following dates

- Dec. 15, 2021
- Jan. 19, 2022
- Feb. 16, 2022
- Mar. 16, 2022
- Apr. 13, 2022

A ``***Collider discussion***'' will organized during the **Energy Frontier Meeting** planned for the week of March 28 and open to everyone

# Muon Properties: Proposed Agenda and Dates

## **Jan 14<sup>th</sup>: 1 PM Central Standard Time (all talks are 20 min)**

- 1:00 PM Physics Motivation for the Muon Program (A. Petrov, Wayne State)
- 1:20 PM Overview of the CLFV Program (R. Bernstein, FNAL)
- 1:40 PM Compressor Ring: Rebunching PIP-II (E. Prebys, U.C. Davis)
- 2:00 PM Targeting at 1MW in a Solenoid: (K. Lynch, York)
- 2:20 PM Questions and Discussion

## **Jan 21<sup>st</sup>: 1 PM Central Standard Time (all talks are 20 min)**

- 1:00 PM A Fixed-Field Alternating Gradient Synchrotron (PRISM) for Muon Experiments (Jaroslaw Pasternak, Imperial College London)
- 1:20 PM PSI: Meson production target stations and upgrade to HIMB (D. Kiselev, PSI)
- 1:40 PM Muon Decay Experiments: (F. Renga, INFN Roma)
- 2:00 PM Muon-to-Electron Conversion Experiments: (B. Echenard, Caltech)
- 2:20 PM Questions and Discussion

## **Feb 4<sup>th</sup>: 2 PM Central Standard Time (all talks are 20 min)**

- 2:00 PM Improved muEDM & negative Muon  $g-2$
- 2:20 Measuring the Proton EDM in a Storage Ring
- 2:40 The  $M^3$  Experiment: Missing Muon Momentum as a Search For Dark Matter
- 3:00 Di-Muon-Spectroscopy Collider and Precision Tests in the Muon Sector
- 3:20 Questions and Discussion