Report on DPF 2017

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HEPAP, telecon meeting, September 26, 2017

DPF Meeting held at Fermilab, July 31 – August 4, 2017

- The meeting brings DPF members together to review results and discuss future plans & directions for our field.
- It is an opportunity for attendees, including young researchers, to present their findings at multiple parallel and plenary sessions.
- Participants also have the chance to talk with DOE and NSF representatives about funding opportunities.
- This is the main biennial meeting of the U.S. particle physics community, and it enjoys substantial international participation.

Over 700 Attendees, with relevant participation of international colleagues, representation from DOE and NSF, and a large number of junior researchers and students.

The Program: https://indico.fnal.gov/conferenceTimeTable.py?confId=11999#all.detailed

- **Over 40 Plenary talks, including**

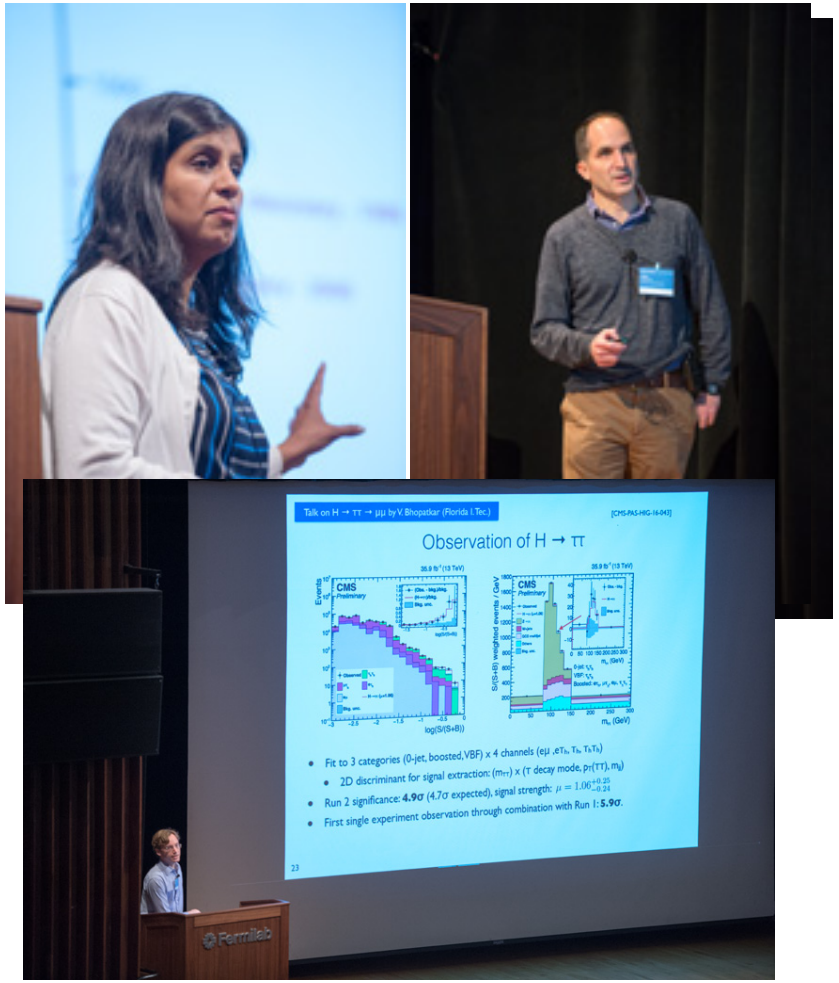
Presentations on the CERN program and plans, the Next European Strategy Process, the Asia Particle Physics Program and the US Particle Physics Program,

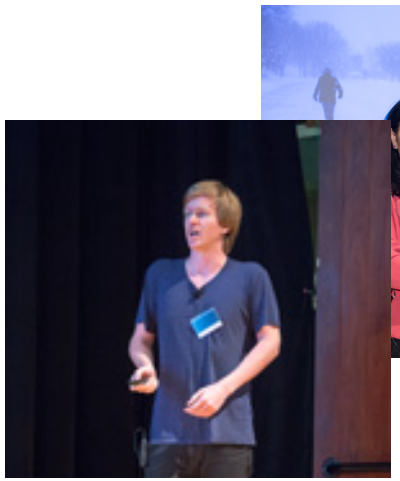
Many forefront theoretical ideas and recent results from experiments

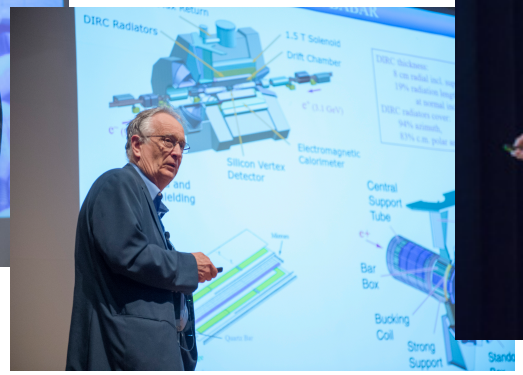
APS Fellows award Ceremony (18 new Fellows)

DPF awards for Instrumentation and Mentorship

DPF Thesis awards in Theory and Experiment







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- **Over 40 Plenary talks, including** (cont'd)

First presentation of T2K Neutrino Oscillation results, towards the understanding of CP violation in the lepton sector

First Presentation on Coherent Elastic ν Nucleus Scattering measurements

First Presentation of the DES Year one data showing impressive results that constrain ΛCDM parameters with comparable strength to Planck

Presentation on Diversity and Inclusion

Presentation on Education and Outreach

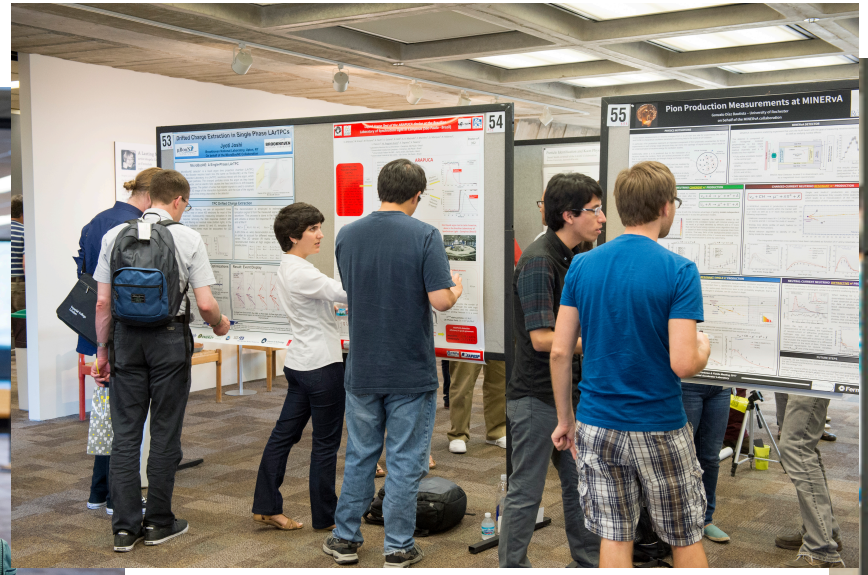
DOE and NSF presentations on Physics Program and Funding Opportunities

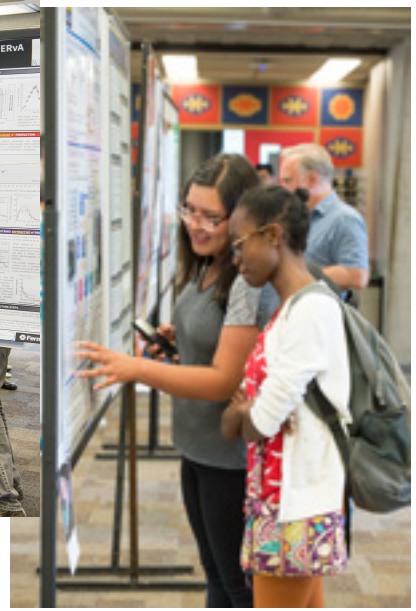
The Program: https://indico.fnal.gov/conferenceTimeTable.py?confId=11999#all.detailed

Over 400 Parallel talks, with 8 sessions running in parallel, organized by 15 Working Groups:
http://conferences.fnal.gov/dpf2017/working-groups/ (great opportunities for young researchers)

- **Poster Session with about 80 presenters** (great opportunity for students)







- **Daily Lunch discussions with funding agency representatives.**
- **Panel Discussion on ”Towards the Next Snowmass”**

Summary of Panel Discussion Towards the Next Snowmass

Panelists: Saul Gonzalez (NSF),), Priscilla Cushman (Minnesota), JoAnne Hewett (SLAC), Chip Brock (Michigan State), Glen Crawford (DOE), Steve Ritz (Santa Cruz, on the phone) and Moderator Marcela Carena (FNAL)

Summary of Panel Discussion towards the Next Snowmass

- **Two short presentations from Glen and Saul giving the agency perspectives.**

DOE does not anticipate budget headroom for major initiatives before 2024, implying that it will best to have the next P5 recommendations in time for FY24 budget discussions in 2022.

This implies 2020 as a good year for the next Snowmass.

Glen and Saul both emphasized that the current P5 plan still has strong support in Washington

- **I briefly presented other relevant planning information**

The EU Particle Physics Strategy update process will begin in 2018 with final language in early 2020.

An ILC decision from Japan is expected in 2018

The NAS will conduct a Decadal Survey of Astronomy and Astrophysics in 2018-2020

Possibility of major discoveries, e.g. LHC, Dark Matter searches, Sterile Neutrinos, Muon g-2

Possibility of pursuing new experiments that we didn't think we could do, enabled by technology advances

The definition of the scientific boundaries of HEP could widen

Summary of Panel Discussion towards the Next Snowmass (cont'd)

- **A list of questions was presented for the panel and for feedback from the HEP community**
  - What were the major strengths and weaknesses of the previous Snowmass process?
  - In view of the Global HEP boundary conditions, what is the optimal timeline for the next Snowmass Exercise?
  - How does this process connect with National Academy of Sciences Studies?
  - How should this process connect with other global HEP exercises?
  - How does this process connect with other APS Units, e.g. DAP, DPB, DNP?
  - How do we get the early career members of the community effectively involved in the process right from the beginning?
  - Are there existing or emerging opportunities for which DPF, in coordination with the agencies, could help organize studies/workshops prior to the next Snowmass?

The panelists and the audience had a fruitful discussion about the above topics
The consensus of the panel and the audience seemed to be that 2020 is the optimal choice for the next Snowmass.
DPF could help to organize the U.S. community input to the European Strategy through a workshop or other coordination activities in 2018
The relation to NAS and other APS Units needs more homework to contribute value-added to the Snowmass-P5 process.

The community is encouraged to send their thoughts by email to dpfsnowmass@fnal.gov

Summary of Panel Discussion towards the Next Snowmass (cont'd)

- **A DPF subcommittee on Snowmass Community Exercise Preparations was formed:**

Composed of the DPF Chairline and Secretary-Treasurer, together with community members – already signed up are Andy Lankford, Steve Ritz, and Mike Witherell, in consulation with NSF and DOE.

This group will send representation to the next meeting of the Board on Physics and Astronomy of the NAS, to discuss how the NAS might play a role in the next community planning cycle.

It was agreed to add at least one early career person to the newly formed DPF subcommittee on Snowmass Community Exercise Preparations.

In Summary,

- DPF 2017@Fermilab was a successful meeting, bringing the community together to share exciting science and discuss issues of relevance in planning for the future
- It provided an excellent venue for younger scientists to interact and promote their work
- It provided plenty of opportunities for scientists to talk to their funding agencies
- It allowed for plenty of discussions with international colleagues and to hear about the status and planning of international physics programs (CERN, Europe, Asia)
- It enabled the start of community discussions in preparation for the next Snowmass