



Fermilab Users Meeting Report

Jane Nachtman UEC Chair (University of Iowa)
Fermilab SAC meeting
25 July 2024

57th Fermilab Users Meeting

INSPIRATIONS FROM P5

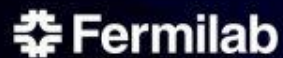
July 9 – 12, 2024

Learn, connect and collaborate:

- Reception
- Poster session
- Panel session
- URA honorary awards session
- Festa Italiana



Register today: indico.fnal.gov/event/64626



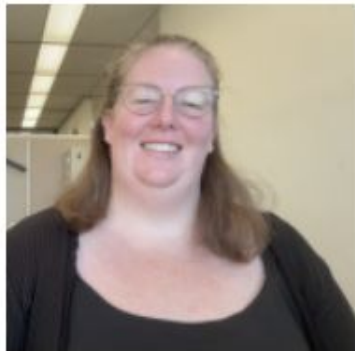
2024 Users Meeting Organizers



UEC subcommittee for
Users Meeting
-- Mary Ann Cummings and
Prabjhot Singh



Much effort from Stephany
Unruh (Users and Affiliates
Engagement Office)!



Anne Ferguson, conference
office, Directorate, AV, etc
etc

Also helped by the entire
UEC, FSPA, and URA

New Perspectives and Festa Italiana lead off the week

- FSPA organizes New Perspectives, conference for students and postdocs -- July 8-9
- Festa Italiana -- evening of July 9th, organized by Marco Mambelli and Donatella Torretta
- Fermilab Users Meeting -- July 10-12
 - 268 registered participants
 - highlights:
 - Fermilab Directorate Town Hall
 - Poster session
 - Colloquium/keynote Chris Quigg
 - Congressman Bill Foster, Gina Rameika from DOE
 - Tours of experimental areas: g-2, mu2e, Dark Matter and Dark Energy Detector area (IERC), Accelerator Development Lab (IOTA), SBND, SQMS Quantum Computing Lab (IARC)

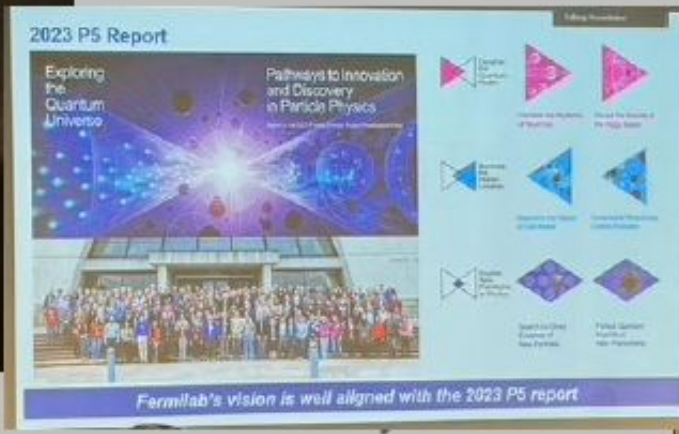
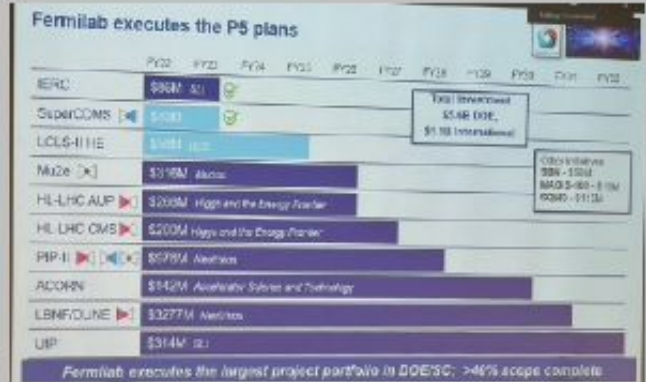
The following slides are borrowed from Prabjhot Singh, one of the UEC organizers of the Users Meeting

Started off with a report from Director Lia Meringa

Welcome & Director's Report



Prabhjot Singh



Users and Affiliates submitted questions for the Directorate

Town Hall with the Directorate



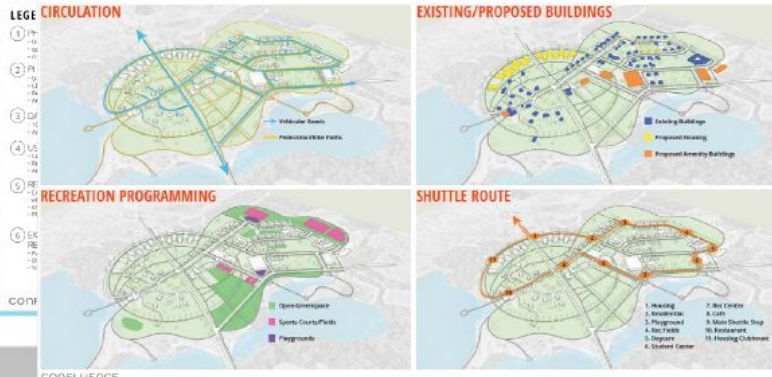
Prabhjot S

Users Meeting

Discovery on the Prairie



The Fermilab Village



7 07/10/2024 DOTP | Fermilab Users Meeting '24

Prabhjot Singh

8 07/10/2024 DOTP | Fermilab Users Meeting '24

12 July 2024

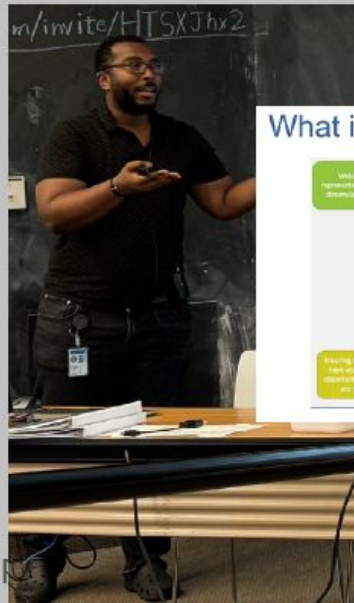


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General Interest talks on Discovery on the Prairie, EDI, Sustainability

Fermilab Efforts in EDI & STEM and Sustainability



What is DEIB?



Agenda

- 1 Sustainability Overview & Drivers
- 2 Fermilab Sustainability Context
- 3 Sustainability Strategy
- 4 Key Initiatives
- 5 Sustainability in Science

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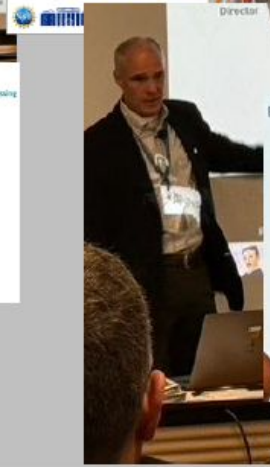
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Survey of Fermilab Experiments, Centers, Divisions

Several Talks

Status of the Short-Baseline Near Detector Experiment

Fermilab 57th Annual Users Meeting - Inspirations from P5, July 10 2024
Duty Kalra, Columbia University (on behalf of the SBND Collaboration)



Why AI & ML for physics?

- We are collecting with huge amounts of data in HEP experiments
- AI & ML approaches are key to addressing these problems
- Challenging as up to first integrals & Accelerator time-to-physics & operational efficiency

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Several Talks:



Prabhjot Singh

Elements of the Fermilab Computing Strategy



NEXUS/QUIET at MINOS

- Low-background R&D facilities for cryogenic detectors
- NEXUS: SuperCDMS, MKIDs, qubits, and more
- Identifying and reducing backgrounds for SuperCDMS -> HAV detectors with single-electron charge readout
- Measuring impact of ionizing radiation on superconducting qubits and investigating possibilities for quantum EPR detection
- Now tailoring to a dedicated facility for IR calibration
- QUIET: new dedicated facility for quantum detectors, with a companion surface facility (LOLD)

Fermilab's Cosmic History

- Lab Director Leon Lederman creates Fermilab Astro theory group with David Schramm, 1983. Hires Kolb and Turner.
- Rocky Kolb & Michael Turner: NASA-Fermilab theory center. Inner Special Outer Space conference, 1984.
- Lab Director John Peoples initiates experimental program with Brian Digital Sky Survey beginning in late 1980s.

People would remind me that the Λ in FRAL is Accelerator, not Astrophysics. But I always thought an accelerator is a tool. You don't say, "A carpenter is a person who uses a hammer. If you don't use a hammer, you're not doing carpentry." You know, there are other tools that you can use to get to the physics.
- Rocky Kolb, AIP Oral History, 2020.

Poster Session with Reception



Posters were judged, with cash awards provided by URA

Users Meeting Poster Session Winners:

- **1st Place: Diego Andrade** (*Demonstrating MeV-Scale Physics Capabilities of Large Neutrino LArTPCs with Ambient Blip Activity in MicroBooNE*)
- **2nd Place: Luis Pelegrina Gutiérrez** (*Charged current single pion production on SBND*)
- **3rd Place: Paloma Rodriguez Thorne and Rebecca Gonzalez (co-presenters)** (*TinyTPC: A Test Stand for LAr Doping*)

URA Awards for Staff/Engineer, Early Career, Postdoc, and Graduate Student Achievement

URA
Awards



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awards presented by John Mester, URA President

Special Address: Congressman Bill Foster



Congressman Bill Foster, and DOE's Gina Rameika

Department of Energy Future Outlook

Colloquium by Chris Quigg, retrospective on Fermilab's past and how it shapes the future



Office of High Energy Physics at a Glance FY 2024 Enacted: \$1.2B



Largest Supporter (~85%) of Particle Physics in the U.S.



Funding at >180 Institutions, including 12 DOE Labs



[Snowmass, July 2022, Seattle] Over 1,120 Ph.D. Scientists and 515 Grad Students Supported



[Fermilab Accelerator Complex] Over 2,345 Users at 2 SC Scientific Facilities



~30% of Research to Universities



Research: 36%, \$426.3M



[Vera Rubin Observatory, Chile] Facility Operations: 29%, \$348.5M



[LBNF/DUNE Cavern, SURF, SD] Projects: 35%, \$425.2M

Thanks to Fermilab administration and URA for their support !

Acknowledgments



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UEC 2023-24 Members



FSPA 2023-24 Members



Conclusions

- The 57th Annual Fermilab Users Meeting was a success, thanks to the support of Fermilab and URA, and the hard work of many people.
- Registration and in-person attendance was a bit lower than we would have liked. We provided a zoom connection, which may contribute to having fewer people in the room.
- Attendance has declined in recent years, never bounced back after a few remote years.
- what can we do to improve attendance next year
 - communicate more with FNAL partners to advertise the meeting
 - communicate through experiments' spokespersons
 - do better to discourage other meetings during the Users Meeting
 - people just have too many meetings to attend
 - lingering perception that site access is difficult -- it has gotten much easier, needs more advertisement (we had SASC talk)
 - we welcome suggestions!!!