Fermilab Community Advisory Board
May 26, 2022 meeting

Members attending: Larry Brenner, Chris Faber, Carrie Garstecki, Leah Goodman, Ewa Jodlowska, Tim Klaus, Britta McKenna, Crystal Porter, Arnolfo Santoro, Alexandra Tsang

Fermilab/DOE personnel attending: Mark Jeffers, Amber Kenney, Tracy Marc, Kim Mazur, Lia Merminga, Roger Snyder, Rick Verhaagen

Welcome and Introductions
Martha Michels

News from the Lab
Tracy Marc

Presentation and links to communication highlights are linked in the agenda.

Q – Can you talk more about quantum computing?
A – The quantum quick control kit mentioned in the presentation will be used in academia at first, University of Chicago is using it and our engineering team is using and introducing it into other experiments. It will be rolled out slowly to see what modifications need to be made.

Fermilab hosts one of five national quantum science centers, generally everything we do it research and development. We don't have quantum computers yet. We are working on high energy tools to develop a quantum computer and eventually quantum computer that has special properties will be used to solve physics problems. Our goal is to develop a prototype of a quantum computer that has a competitive advantage over other quantum computers.

Q – What security is involved?
A - The research that we are doing is a large collaboration at the basic, fundamental level and there are areas we protect. At this point it is easy to compartmentalize.

Update on dog walking and fishing
Martha Michels

Dog walking off leash and fishing will not be allowed going forward. However, dog walking with a leash is now allowed.

Q – Will we always have to show IDs to access the property?

A - Going forward it will always be a requirement to show ID, just like other national labs.

Vision and priorities for Fermilab
Lia Merminga

Presentation is linked in the agenda.

Partnerships such as the CAB are very important and your feedback is welcomed.

Q – When will you be shooting neutrinos?
A - Tomorrow concludes the review of LBNF which brings us one step closer. Excavation for the huge cavern one mile underground is more than 25% complete. It is on time and will be complete in another year or so. In 2024 scientific equipment will be installed and in 2028 it should be done.

Q – Does any of the research have results for the medical field?
A – There is a tie to science discovered here and medical research. We used to have a neutron treatment facility here and patients were treated on site. We built the accelerator for the Loma Linda facility in California. Patients are no longer treated here but we would like to develop accelerator technology for medical applications.

Q – Considering that experiments span years, how do you plan for hiring across the years?
A – We do have a pipeline for talent that covers a long timeframe. We have several programs that were put in place to create that pipeline, especially in key areas. Another purpose for that pipeline is to diversify our workface. One example to create a pipeline is the ASPIRE fellowship (Accelerator Engineering Fellowships for Underrepresented Minorities). Undergrads spend 2-3 summers with us. Many are are then hired for permanent positions.

Q - What is the typical strategic plan like and how often is it done?
A - Every year we present our annual lab plan to DOE includes a 10 year vision.

Q - How do you forecast with the speed of change in technology?

A - I don't know yet! We made plan in 2013 to build LBNF, DUNE, and PIP-II before quantum was a research focus at Fermilab.

Comment - Leah Goodman invited Lia to any Warrenville city council meeting. Citizens would be so happy to hear from her but understand she may not have the time.

New Construction Update
Mark Jeffers

Presentation is linked in the agenda.

Mark noted the construction that could be seen as people arrived for the meeting. Construction on the Integrated Engineering Research Center (IERC) is expected to be completed by November of this year. Sustainability is a focus. The Target System Integration Building will be built in the accelerator campus as we need the capability to manufacture custom equipment needed for science. The Fermilab Welcome and Access Center's design was to blend in with nature and will be located off of Kirk Road.

At the conclusion of Mark's presentation, the CAB members donned hard hats and safety gear and toured the IERC.