

DRAFT: Fermilab Physics Advisory Committee Charge April 2026

Directorate: Norbert Holtkamp (Director), Patricia McBride (Interim CRO)

The Physics Advisory Committee: Halina Abramowicz (Chair), Klaum Blaum, Allen Caldwell, Aida El-Khadra, Joe Formaggio, Elisabetta Gallo, Cecilia Gerber, Sunil Golwala, Stefania Gori, Atsuko Ichikawa, Zach Marshall, Fulvia Pilat, Mayly Sanchez, Tim Tait, w Brigitte Vachon (ex-officio, DPC Chair)

Scientific Secretary: Sergo Jindariani

Report from the AAC - Oliver Kester

Charge: For information only

Status and plans for the Fermilab's accelerator complex

Charge: We ask the committee to review the status of Fermilab's accelerator complex with particular emphasis on plans for NuMI and SY120 ahead of the Long Shutdown. The committee is also asked to review the status of the recommendations made at previous reviews:

- 1) Given the recent decline in accelerator reliability, there is an urgent need to modernize the aging systems, particularly in light of the upcoming DUNE project. Please provide a status update of the modernization efforts, in particular towards 1.2MW, and taking into account questions/comments made at the last PAC review.
- 2) The accelerator operations, optimization and monitoring has high potential for modernization by AI. The PAC requests a presentation about on-going and planned work in this area

Findings:

Comments:

Recommendations:

Status of PIP-II

Charge: For information only

Report from the Dune Program Committee (DPC)

Charge: For information only

Report from Microelectronics

Charge: We ask the PAC to review the status of the MicroElectronics (ME) activities at the laboratory and of the recommendations made at past meetings:

1. The lab should support the ME group in getting access to appropriate tools for ASIC development.
2. The PAC would like to see a prioritized technical portfolio inside the reduced funding scenario.

Findings:

Comments:

Recommendations:

Status of the Cosmic Frontier program

Charge: We ask the PAC to review the status and strategy of the Cosmic Frontier efforts at the laboratory, taking into account reduced budgets in recent years.

Findings:

Comments:

Recommendations:

Status and Plans of SBND

Charge: We request that the PAC provides feedback on the physics objectives of the SBND experiment for a reduced running scenario before the Long Shutdown, e.g. up to 20 weeks of BNB running in FY27 and plans for FY28 remaining unchanged. We also ask the PAC to comment on whether these plans would be affected if running after the long shutdown were to become an option.

Findings:

Comments:

Recommendations:

Status and Plans of ICARUS

Charge: We request that the PAC provides feedback on the physics objectives of the ICARUS experiment for a reduced running scenario before the Long Shutdown, e.g. up to 20 weeks of BNB and NuMI running in FY27 and plans for FY28 remaining unchanged. We also ask the PAC to comment on whether these plans would be affected if running after the long shutdown were to become an option.

Findings:

Comments:

Recommendations:

Status and Plans of ANNIE

Charge: We request that the PAC reviews the physics and detector R&D objectives of the ANNIE experiment for a reduced running scenario before the Long Shutdown, e.g. up to 20 weeks of BNB running in FY27 and plans for FY28 remaining unchanged.

Findings:

Comments:

Recommendations:

Status and Plans of NOvA

Charge: We request that the PAC review the updated NOvA physics case for running in the period up to the Long Shutdown.

Findings:

Comments:

Recommendations:

Status of the SpinQuest experiment and its dark sector upgrades

Charge: We ask the PAC to review the status of the SpinQuest experiment and its potential upgrades. We also ask the PAC to comment on the physics case if running after the Long Shutdown were to become a possibility.

Findings:

Comments:

Recommendations:

Status and Plans of FTBF

Charge: We request that the PAC provides feedback on the status and plans of FTBF, including plans for after the Long Shutdown

Findings:

Comments:

Recommendations:
