

Accelerator Physics and Technology Seminar

Accelerators in P5: Fermilab, R&D, Higgs Factory, and Future Colliders

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Date: Tuesday, March 19

When: 4:00 pm CDT

Where: One West (WH1W) and Zoom

Abstract: The P5 (Particle Physics Project Prioritization Panel) report sets forth a recommended 10-year program for High Energy Physics: *Exploring the Quantum Universe*. This talk will focus upon the accelerator components of the plan. The P5 report includes recommendations for Fermilab to complete the Mu2e, PIP-II, and LBNF projects; then to implement the ACE-MIRT upgrades to a 2+ MW beam, improve the reliability of the complex, and develop a long-term plan aligned with future HEP needs. Accelerator R&D is strongly supported in the report through the GARD program, and additionally toward future colliders. An off-shore Higgs Factory is also recommended, which would involve significant U.S. investments. Finally, the report identifies the need for a far-future 10 TeV/parton center-of-momentum (pCM) collider. This machine could collide protons, electrons and positrons, or muons. End-to-end designs, R&D, and demonstrator efforts for the 10 TeV pCM need to begin near term.