

# Summary of Fermilab's Intensity Frontier Research Program

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# 1. The quality and impact of the research by the group in the recent past

- MiniBooNE collaboration and analysis leaders
  - 1954 citations
  - cross sections
  - oscillations
- MINOS collaboration and analysis leaders
  - 2436 citations
  - $\Delta m^{**2}$
- Vital research supporting Projects
  - MicroBooNE, NOvA, LBNE, Mu2e, Muon (g-2)
- LAr R&D (LAPD)

## 2. The scientific significance, merit, and feasibility of the proposed research

- Independent panel verification of quality
  - DOE Facilities Plan—LBNE, Mu2e, Project X
  - P5
  - European Strategy – Long baseline neutrinos
  - PAC
- Fully exploiting expertise in current vibrant programs
  - Neutrino long baseline
  - Neutrino short baseline
- Launching new world class programs
  - Muon experiments
  - Planning for kaons, EDMs, n-nbar, ....

### 3. The competence and future promise of the group for carrying out the proposed research

- Strong group holding leadership positions in the ongoing, developing, and proposed programs at all levels
- Spokespeople, analysis coordinators, APS fellows
- Concerted effort over the last few years to hire and promote young leaders—e.g. Early Career Awardees

## 4. The adequacy of resources for carrying out the proposed research, and cost effectiveness of the research investment

- Program not funded at the level recommended in the 2009 DOE Laboratory Proton Research Review report
- We have managed the transition from an energy to an intensity frontier focus even in a decreasing research budget
- Fermilab scientists are vital to planning, Project Managing, and operating experiments and well as research

## 5. The quality of support and infrastructure provided by the laboratory

- Transitioning the quality support for Tevatron to the Intensity Frontier
  - Increased operations support
  - Computing tools—common across experiments, simulations
  - Experiment Operations Center (XOC)
  - Organizational changes
- Close interaction with lab theorists
- Detector R&D staff and facilities

## 6. The effectiveness in enabling the broader community to perform world class intensity frontier research

- Primary role of Fermilab scientists
- Facilities—we host the domestic program
- Guest & Visitor programs, including new Intensity Frontier Fellowship
- Building and assembling detectors—exciting, hands on

## 7. The demonstration of leadership in the intensity frontier

- Fermilab's # 1 goal is to be the world leader on the Intensity Frontier
- Reorganized and refocused the laboratory's program around an expanded Intensity Frontier
- Fermilab scientists fill many of the spokespeople and project manager roles

## Summary

- Fermilab has made the transition to leading an Intensity Frontier program
- Fermilab scientists play strong and interlocking, leadership and scientific roles in this program
- Fermilab scientists facilitate and enhance the work of university and other lab scientists