Summary

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LQCD extension III Review
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Summary

- We have outlined a research program for numerical lattice gauge theory that
  - is aligned with the P5 vision;
  - supports, according to leading experimentalists and theorists, many experiments funded by the DOE Office of High-Energy Physics;
  - pushes the boundaries of computational science;
  - leverages the common interests of particle and nuclear physicists
  - is based on ambitious but achievable milestones;
  - relies on and fosters cost-effective lab-based institutional clusters.

Milestones

- The five milestones balance specificity and breadth:
  - inspired by the way experiments approach science objectives.
- The milestones are reviewable: in each case, future review panels can judge whether the LQCD research program is on track.

Support

- The research program enjoys significant community support. See letters from
  - Ed Blucher & Stefan Söldner-Rembold, Spokespersons of DUNE
  - Joel Butler, Ex-spokesperson of CMS
  - David Hertzog, Ex-spokesperson of Muon g – 2
  - Graham Kribs, Theory expert on physics beyond the Standard Model
  - Fred Olness, Theory expert on parton distribution functions
  - Alan Schwartz, chair of Belle II Institutional Board
  - Patricia Vahle & Peter Shanahan, Spokespersons of NOvA
  - Mike Williams, Member of LHCb
  - Kerstin Kleese van Dam, Director, Computational Science Initiative, BNL
  - Elizabeth Sexton-Kennedy, Chief Information Officer, Fermilab

Request

- We propose to continue designing, building, and operating cluster hardware, now in collaboration with BNL and Fermilab's institutional clusters.

- An appropriate budget is ~$2M/year:

  - continues the level of support of LQCD ext. II;

  - provides significant presence of lattice QCD science and expertise at both labs;

  - leverages cost-effectively LCF computing, which serves a distinct purpose.

Questions and Discussion