

Acknowledgments

This report is the result of an initial collaboration-wide effort to prepare a whitepaper for the APS Division of Particles and Fields Community Summer Study 2013 [1]. The paper has evolved into LBNE's formal science document due to the hard work of many LBNE Collaboration and Project members. We thank those colleagues who made significant contributions and provided excellent feedback on drafts of this document. The following is a nonexhaustive list of LBNE collaborators who made major contributions to this document. A major contribution is defined as \geq a section and/or a study reported in a figure prepared for this document.

Contribution	LBNE Collaborator(s)
<i>Overall editing</i>	<i>Anne Heavey, Mary Bishai, Jon Urheim, Brett Viren, Maury Goodman</i>
Technical/Figures	Brett Viren
<i>Original content</i>	<i>Bob Wilson (Editor of the 2010 Interim Physics Report)</i>
General Guidance	Milind Diwan, Bob Wilson, Jim Strait, Sam Zeller, Bill Louis, Hank Sobel, Josh Klein, Nick Samios
Major Contributors by Chapter. A * indicates the chapter editor(s)	
Chapter 1	Jon Urheim*, Jim Strait, Bob Wilson
Chapter 2	Mary Bishai*, Elizabeth Worcester*, Jon Urheim, Kate Scholberg, Ed Kearns, Bill Marciano, Xin Qian.
Chapter 3	Mary Bishai*, Jim Strait, Elaine McCluskey, Kevin Lesko, Jim Stewart, Vaia Papadimitriou, Kevin Yarritu, Bill Louis
Chapter 4	Elizabeth Worcester*, Mary Bishai*, Matt Bass, Andy Blake, Xin Qian, Jon Urheim, Lisa Whitehead
Chapter 5	Ed Kearns*, Jon Urheim*, Vitaly Kudryavtsev
Chapter 6	Kate Scholberg*, Vic Gehman, Alex Friedland
Chapter 7	Roberto Petti*, Sanjib Mishra, Jaehoon Yu, Richard Van de Water
Chapter 8	Michael Smy*, Mary Bishai*, Jaehoon Yu
Chapter 9	Jon Urheim*, Jim Strait
Appendix A	Dan Cherdack*, Tom Junk*, Andy Blake, Vitaly Kudryavtsev, Zepeng Li, Kate Scholberg
Appendix B	Mary Bishai*, Roberto Petti

We would also like to express our gratitude to the following non-LBNE collaborators who supplied us with invaluable information: **Elke Aschenauer (Brookhaven Lab)**, the main editor of the Electron Ion Collider (EIC) whitepaper [2] which inspired the look and style of this document; **Joachim**

Kopp (Max-Planck Institute, Heidelberg) for his study of LBNE’s sensitivity to Non-Standard Interactions summarized in Section 4.7.1; **Pilar Coloma (Virginia Tech)** for her studies comparing LBNE’s sensitivities to other proposed neutrino experiments shown in Figures 4.33 and 4.35; **Patrick Huber (Virginia Tech)** for a long and fruitful collaborative effort, and his critical role in developing the case for a very long-baseline neutrino oscillation experiment over the past decade; **JJ Cherry (LANL)** and **Huaiyu Duan (U. of New Mexico)** for major input on the supernova studies shown in Chapter 6; **Dmitry Gorbunov (Institute for Nuclear Research, Moscow)** for his studies on LBNE sensitivities to ν MSM heavy neutrinos shown in Figure 7.5; **Diana Brandonisio (Fermilab VMS)**, our graphic designer for her gorgeous cover design and invaluable design advice.

And last, but most importantly, our effusive thanks to **Anne Heavey** (AKA the **FIXME** monster) — our devoted general editor — for her dogged insistence on clarity and quality, her hard work well above and beyond the call of duty, and for being such an absolute pleasure to work with.

This work was supported in part by the U.S. Department of Energy (DOE), the National Science Foundation (NSF), the Sanford Underground Research Facility and the South Dakota Science and Technology Authority (SDSTA); the Brazilian Federal Agency for the Support and Evaluation of Graduate Education (CAPES), the Sao Paulo Research Foundation (FAPESP) and the National Council for Scientific and Technological Development (CNPq); the UK Science and Technology Facilities Council (STFC); the Italian government’s Istituto Nazionale di Fisica Nucleare (INFN); the Indian Department of Atomic Energy (DAE) and the Department of Science and Technology (DST), Ministry of Science and Technology.

References

1. “APS Division of Particles and Fields Community Summer Study 2013,” 2013.
<http://www.snowmass2013.org>. Cited in Section (document) (pg.235).
2. A. Accardi, J. Albacete, M. Anselmino, N. Armesto, E. Aschenauer, *et al.*, “Electron Ion Collider: The Next QCD Frontier - Understanding the glue that binds us all,”
BNL-98815-2012-JA, JLAB-PHY-12-1652, arXiv:1212.1701 [nucl-ex], 2012. Cited in Section (document) (pg.235).