**Project Manager Qualifications**

**Brett Barney, Project Manager**

**Education:**

Ph.D. Biochemistry, Arizona State University, 2003

B.S. Professional Chemistry, Utah State University 1993

**Work and Research Experience:**

2015 – Present Associate Professor, Bioproducts and Biosystems Engineering (UMN)

2017 – Present Director of Graduate Studies, BBSEM Program (UMN)

2015 – Present Director of Graduate Studies, Microbial Engineering Program (UMN)

2010 – Present Faculty Member, BioTechnology Institute and Microbial and Plant Genomics Institute (UMN)

2009 – 2015 Assistant Professor, Bioproducts and Biosystems Engineering (UMN)

2003 – 2009 Research Assistant Professor and USDA Postdoctoral Fellow (USU)

1999 – 2003 Research Assistant and NSF Fellow, Department of Chemistry and Biochemistry (ASU)

1993 – 1999 Fiber Laboratory Manager, Research Chemist, Senior Laboratory Technician and Associate Chemist, Fresenius Medical Care, Ogden, Utah

1991 – 1993 Research Technician, Utah Water Research Laboratory (USU)

**Bo Hu, co-Project Manager, Professor, Department of Bioproducts and Biosystems Engineering (UMN)**

Bo brings expertise in chemical engineering approaches that will be key to the second activity of the proposal.

Dr. Barney’s laboratory works with metalloenzymes involved in important biological processes, including nitrogen fixation, photosynthesis and carbon sequestration. Dr. Barney has 30 years of experience in both basic and applied research in both academia and industry, including experience managing projects and laboratories in a range of settings. Previous research funding has come from the National Science Foundation (NSF), the United States Department of Agriculture (USDA), the United States Department of Energy (DOE), the Defense Advanced Research Projects Agency (DARPA), Minnesota’s Discover, Research and InnoVation Economy (MnDRIVE) and the Initiative for Renewable Energy and the Environment (IREE).

The Barney laboratory is housed in the Cargill building for Microbial and Plant Genomics at the University of Minnesota. The Cargill building was designed with the intention to promote interdisciplinary collaborations and provide a shared lab space for each floor, which facilitates flexible group sizes. This large laboratory space is designed around a shared communal format, with various rooms available for utilization for specific experiments. The laboratory contains the primary equipment to perform this research project, including facilities to cultivate various bacteria, autoclaves, analytical instrumentation for analysis (gas chromatography, spectrophotometers, and balances), thermocyclers for PCR reactions, centrifuges, electrophoresis equipment and various incubators. Additional facilities include the Biotechnology Resource Center, the Genomic Sequencing Center and a broad range of additional analytical laboratories which are available as pay services.

**Organization Description**

Dr. Brett Barney (PI) has been a professor with the Department of Bioproducts and Biosystems Engineering at the University of Minnesota since 2009. The Bioproducts and Biosystems Engineering Department serves as a core department combining Agricultural Engineering, Biological Engineering and Environmental and Ecological Engineering. The University of Minnesota provides a range of facilities and sufficient laboratory space to perform each of the activities described in this proposal. Additionally, controlled environments including greenhouse space sufficient for this work is conveniently located next door to Dr. Barney’s laboratory space. UMN Sponsored Projects Administration (SPA) is the entity authorized by the Board of Regents to manage project agreements with the LCCMR program.