**PROJECT TITLE:** Mobile Water Treatment Demonstration System for Sulfate Reduction

**Dr. Lucinda Johnson, Natural Resources Research Institute (NRRI), University of Minnesota Duluth (UMD)**

**Key Qualifications**

As the Water Initiative leader, Dr. Lucinda Johnson (NRRI-UMD Associate Director, a landscape and aquatic ecologist) directs a team of scientists involved in the development of sulfate reduction technologies. Four different sulfate treatment technologies are being tested at NRRI, two of which are amenable for deployment on a mobile platform. Johnson has led three previous LCCMR projects (2005; 2007; 2016) quantifying climate change impacts on aquatic resources in Minnesota. Johnson has considerable experience leading large projects, including a prior project to validate indicators of coastal ecosystem conditions ($1.67M, funded by USEPA). The sulfate reduction team also includes two environmental engineers, a materials chemist, and several water quality specialists, including Johnson herself.

**EDUCATION**

Ph.D., Zoology, Michigan State University, 1999

M.S., Environmental Science and Forestry, State University of New York, 1984

B.A., Duke University, 1976

**Project Team:**

This team brings a very broad set of skills including research and work experience in engineering design and development of pilot demonstration system, chemical and biological expertise in sulfate removal. The assembled research team will consist of **Dr. George Hudak**, **Dr. Chan Lan Chun**, **Dr. Meijun Cai**, **Mr. Shashi Rao,** **Dr. Adrian Hanson**, **Dr. Lee Penn** and **Dr. Nathan Johnson**. **Dr. George Hudak** is the Director of the Minerals, Metallurgy & Mining at NRRI UMD, and is a geologist with experience in developing in-situ sulfate water treatment systems. **Dr. Chan Lan Chun** is an environmental engineer specified in biological treatment technology and environmental remediation. **Dr. Meijun Cai** is an environmental engineer having research experience focusing on water treatment by chemical methods. **Mr. Shashi Rao** is a metallurgical engineer and professional in engineering design. **Dr. Adrian Hanson** is a professor of environmental engineering from Civil Engineering Department. He has experience in constructing and running a pilot system for wastewater treatment plant. **Dr. Nathan Johnson** is an environmental engineer with expertise of sulfur chemistry in natural and built-in environment. **Dr. Lee Penn** is a chemist and mineralogist with expertise of the structure, properties, and reactivity of iron minerals and metal sulfides.

**ORGANIZATION DESCRIPTION**

**The Natural Resources Research Institute** is a University of Minnesota Duluth applied research organization. NRRI's mission is to deliver research solutions to balance Minnesota's economy, resources and environment for resilient communities.