Lead Microbiologist- Crop Inoculant Development

Location: Fargo, ND
Employment Type: Full-time
Experience Level: Postdoctoral equivalent (3-5 years)

About Lilac Ag

Lilac is an early-stage biologicals company developing next-generation microbial inoculants for the crop inputs market. Rooted in scientific breakthroughs from North Dakota State University, we apply advanced genomic tools to enhance microbial efficacy and ensure competitiveness in the soil environment, addressing one of the biggest barriers to reliable on-farm performance.

Position Overview

We are seeking a highly motivated Agricultural Microbiologist to join our dynamic R&D team focused on developing next-generation microbial inoculants for the crop inputs market. This role offers the opportunity to drive innovation from discovery through field application, working directly under the guidance of a category-leading scientist in a fast-paced startup environment where your research will have direct commercial impact.

The successful candidate will lead comprehensive microbial screening programs, lead a next-generation strain improvement pipeline, and translate laboratory discoveries into greenhouse and field-ready solutions. The ideal candidate is a scientist who thrives in an entrepreneurial setting and is passionate about developing sustainable agricultural solutions through cutting-edge microbiology.

Key Responsibilities

Microbial Screening, Discovery and Strain Development

- Design and execute high-throughput screening protocols to identify beneficial microorganisms for crop enhancement, with focus on nitrogen-fixing rhizobia and other plant-beneficial bacteria
- Develop and implement rapid phenotyping techniques and novel screening methodologies to accelerate candidate evaluation and selection
- Apply innovative approaches to enhance strain performance, using diverse, cutting-edge techniques for trait improvement.
- Maintain and expand proprietary microbial culture collections with comprehensive characterization data

Translational Research Pipeline

- Design and execute controlled environment studies to evaluate inoculant efficacy across diverse conditions
- Collaborate with field research teams to ensure successful translation of laboratory results to agricultural settings
- Develop standardized protocols for scaling microbial production from lab to commercial volumes
- Partner with commercial team to provide technical support for product positioning and customer education

Innovation & Product Development

- Identify and pursue novel research directions aligned with market needs and scientific opportunities
- Stay current with emerging technologies in microbiology, agricultural biotechnology, and related fields
- Contribute to intellectual property development through invention disclosures and patent applications

Required Qualifications

- Ph.D. in Microbiology, Molecular Biology, Biotechnology, or related field
- Demonstrated track record of independent research with first-author publications in peer-reviewed journals
- Extensive experience with microbial isolation, cultivation, and characterization techniques
- Proficiency in molecular biology methods including PCR, sequencing, and genomic analysis
- Strong background in microbial ecology and plant-microbe interactions
- Knowledge of experimental design, statistical analysis, and data interpretation
- Understanding of agricultural systems and crop production challenges
- Familiarity with rhizobial symbiosis, nitrogen fixation, and other plant-microbe interactions
- Experience with greenhouse and/or field research protocols
- Proven ability to work independently and drive projects from conception to completion
- Strong project management skills with ability to handle multiple concurrent projects
- Excellent written and verbal communication skills for both technical and non-technical audiences

Preferred Qualifications

- 3-5 years of postdoctoral or equivalent industry experience in applied microbiology
- Fermentation and bioprocess development experience strongly preferred
- Proficiency in innovative rapid phenotyping techniques and high-throughput assay development
- Experience with environmental sampling and microbial isolation from agricultural soils and rhizosphere environments
- Knowledge of regulatory requirements for agricultural biotechnology products
- Familiarity with bioinformatics tools and computational analysis of microbial communities
- Previous startup or small company experience
- Track record of successful technology transfer from research to application
- Experience working in fast-paced, results-oriented environments

Why Join Lilac?

This is a unique opportunity to join a startup at the intersection of ag retail, science, and sustainability. We are an equal opportunity employer committed to diversity and inclusion in all aspects of our organization.

Professional Growth

- Opportunity to work under the mentorship of a recognized leader in agricultural microbiology
- Direct impact on product development with clear path from research to commercialization
- Access to state-of-the-art laboratory facilities and cutting-edge instrumentation

Innovation Environment

- Entrepreneurial culture that encourages creative problem-solving and risk-taking
- Rapid decision-making processes that accelerate research progress
- Cross-functional collaboration with scientific and business professionals
- Opportunity to contribute to intellectual property and participate in technology commercialization

Competitive Package

- Competitive salary commensurate with experience
- Equity participation in company growth

To Apply

Send the following materials to **Careers@lilac.ag** with the subject line: Lead Microbiologist – Fargo. Applications will be reviewed on a rolling basis.

- Detailed CV highlighting relevant research experience and publications
- Cover letter describing your interest in agricultural microbiology and startup environments