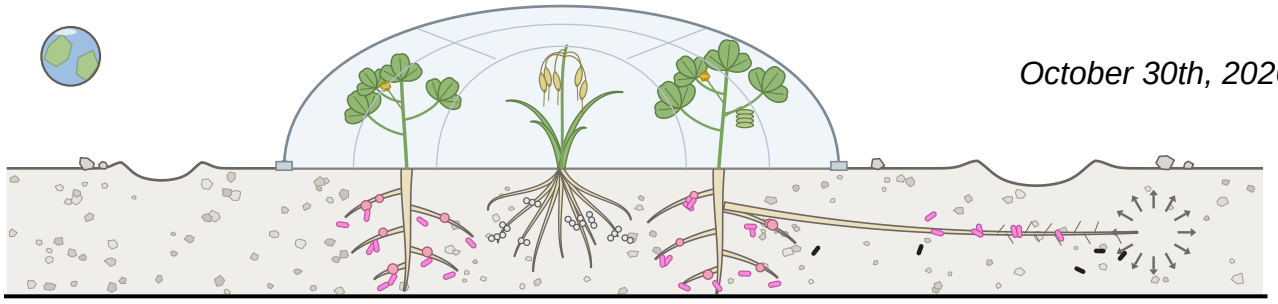


October 30th, 2026

The *Managed Ecosystems Microbial Ecology* Lab is recruiting an MS or PhD student to research how crop rotations and plant-associated microbes can transform lunar regolith, a stressful substrate for plants, into fertile ground for growing food in space. In this NASA Space Biology project, the student will help lead a multi-generation crop rotation experiment in regolith simulants and assist in studying how nodulating and non-nodulating endophytes shape root exudation and stress. The student will learn and practice (i) methods for cultivating and characterizing plant growth-promoting bacteria, (ii) profiling microbiomes using 'omics' data, and (iii) using bioinformatics tools to link microbes with plant vigor and regolith weathering. Experience in microbiology, plant or soil sciences, bioinformatics, data visualization, and writing are assets.

This project is a partnership between Purdue University and Michigan State University, bringing together experts in root biology, soil microbiology, and planetary science. Depending on their interests, the student may have opportunities to work at both institutions.

Personal development is valued and will be supported through conference attendance, teaching, outreach opportunities, and customized development planning. We value a diversity of lived experiences and opinions, a collaborative work environment, and a test-fail-learn-repeat mindset. Liquid handling robots and student support are available to complement physical needs.

There are several different directions this research can progress, playing to the strengths of a candidate. The following are study systems and collaborations involved in this project:

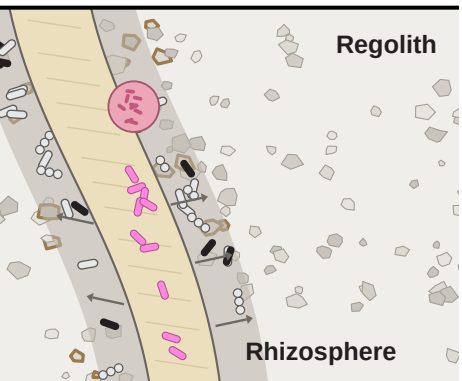
Study systems

- lunar regolith simulants (highland / mare)
- rhizoboxes (barrel clover / wild oat)
- bacterial endophytes and rhizosphere communities
- 'omics' / *in silico*

Collaborations / Applications

- Root biology and phenotyping (Dr. Miranda Haus, Michigan State University)
- Regolith spectroscopy (Dr. Briony Horgan, Planetary Sciences)
- Electron microscopy (Dr. Michelle Thompson, Planetary Sciences)

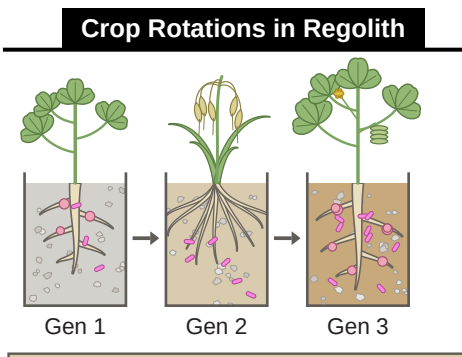
The student will be advised by Dr. Roland Wilhelm in Purdue's Department of Agronomy and supported by a research assistantship (stipend and tuition remission). To apply, please send a resume and a short cover letter describing your research interests to **rcwilhelm@purdue.edu**. Review of applications begins **December 15th, 2026** and continues until the position is filled. The start date is flexible.



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- One of the world's most powerful super computers at your fingertips

Living in West Lafayette, IN

- WL is ranked the 15th safest and 8th best college town in the US
- Excellent biking and car sharing infrastructure
- A diverse and international community calls WestLafa home.
- World class recreational facilities / intramural leagues on campus
- Free public disc golf course and running / biking trails in town.
- Hotspot for college sports
- Great if you like being close to big cities *AND* affordable living
  - 4 daily trains to downtown Chicago (3.5 hr) and Indianapolis (1.75 hr)
- Easy weekend retreats to Indiana Dunes National Park on Lake Michigan

Apply and Visit Before you Decide!







