Traditional practices of food production face a set of limitations including long harvest time and susceptibility to climate and disease. What if we can develop a new way of food production that is not subject to any of these limitations?

**Research Interests**

- Unconventional, microbial-based food production
- Design and engineering of microbial consortia for precision fermentation
- Engineering and applications of lactic acid bacteria
- Analysis of Kombucha tea microbiome
- Mathematical modeling of microbial metabolism

**Current Projects**

- Single-cell protein production from plastic waste
- On-demand food production from air, water and electricity
- Engineering of synthetic microbial communities for fermentation

**Keywords**

Synthetic biology, microbiomes, probiotics, metabolic engineering, mathematical modeling, on-demand food production

**Interest Areas for Collaboration/Future Work**

Dr. Lu is interested in working with food scientists and microbiome researchers to study food microbiome dynamics and function as well as the engineering of microbes for precision fermentation.