Research Opportunity for Master's Students

Microbial Biomanufacturing of Therapeutic Proteins

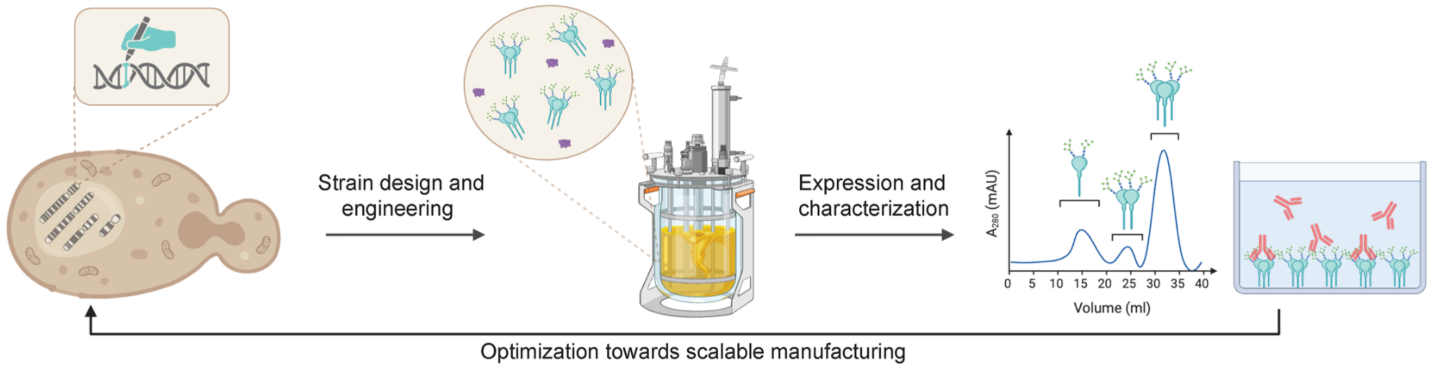
Duration: 6 months in 2026

Liu Lab @ Scripps
Collaborate. Communicate. Create.

About the Project:

The Liu Lab engineers advanced microbial expression platforms for the production of next-generation biotherapeutics, including viral vaccine antigens, antibody fragments, and other immune-active proteins. We use fungal hosts such as *P. pastoris* and apply synthetic biology, secretion pathway optimization, and fermentation engineering to improve yield, folding, and post-translational modifications. The goal is to push microbial systems toward true biopharmaceutical-grade performance.

Typical workflow



You will gain experience in:

- Designing and constructing expression strains for therapeutic proteins
- Tuning glycosylation and secretion pathways
- Running and optimizing fed-batch / high-density fermentations
- Purification and analytical characterization of expressed proteins
- Working in a highly interdisciplinary team

Qualifications:

- Master’s students in Biotechnology, Molecular Biology, Biochemistry, Bioengineering
- Ideally with experience in one or more of: i) heterologous protein expression and secretion; ii) molecular cloning or strain engineering; iii) protein purification/biochemical assays
- Enthusiasm for applying synthetic biology in the biopharmaceutical space

Why Scripps Research?

- Cutting-edge facilities at at a world-leading biomedical institute
- Experience directly relevant to biopharma and vaccine R&D
- A welcoming, multidisciplinary lab environment
- Beautiful campus in La Jolla

Join us!

Email directly:
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