

Project and Teaching Assistant: Full-time or Part-time Temporary Position (in Building 66) – from Summer 2019

(if you are interested in the position, please email a copy of your resume to Dr. Hamel, jhamel@mit.edu)

Project Title: Bioprocess engineering of microbial, algal and mammalian cell culture for biotechnology and bioenergy research and teaching applications

Position Context: In the lab, we culture microbial cells (e.g., GFP-*Escherichia coli*, yeast) and mammalian suspension cells (e.g., CHO) in the flask, benchtop bioreactor, and programmable robotic platform and study their metabolism in the batch, fed-batch or perfusion (continuous) culture modes. Current projects are carried out with support from technology companies, and aim to optimize production of the desired product. The product of interest can be recombinant albumin (by *Pichia pastoris*), Green Fluorescent Protein (by *E. coli*), fatty acids (by microalgae and yeasts) or an IgG (CHO). State-of-the-art analyzers are available to measure cell and metabolic parameters (e.g., HPLC, biochemical analyzers, RAMAN spectroscopy and mass spectrometer).

These biological platforms are used for research and teaching applications. For the latter, experiments developed by the selected candidate will be offered in course 10.28, in the fall. The team member will be involved in preparing and delivering experiments to juniors and seniors, in the fall term.

Position Responsibilities: As a project assistant, your duties will include helping teach and oversee a chemical-biological engineering undergraduate lab course (10.28). In this duty, you will help develop and set up laboratory experiments, develop new assays, and assist students in the lab and with homework along with testing and implementing new biotechnology in the course and in research. In addition to teaching, there are many opportunities to work on an independent research project that often lead to conference posters and presentations. Lastly, you will work with other members of the lab to maintain and manage the lab. This is a great opportunity for people who want to learn more about bioprocessing and gain valuable experience working with bioreactors nascent biotechnology. Several recent MIT graduates (including one from Course 7) joined us as TA in the past two years, and contributed to several projects and course 10.28. They are now in graduate school, Medical School, and leading biotechnology companies.

Requirements:

- High motivation
- Ability to work independently, and within a team
- Well-organized, responsible, dedicated, self-motivated, and good communicators.
- Teaching/ tutoring experience or willing to learn from MIT teaching lab

Recommended Additional Skills or Interests:

- Process and analytical instrumentation
- Practical knowledge of the cell culture process (microbial or mammalian cells) (Preferred but not essential)

Contact:

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