



Massachusetts Institute of Technology

Cullen R. Buie, Ph.D.
Assistant Professor

Postdoctoral Scholar in Electric Field Enhanced Genetic Transformation

The Laboratory for Energy and Microsystems Innovation (LEMI), under the direction of Prof. Cullen R. Buie, explores the use of microfluidics to solve problems in materials science, energy, and biotechnology. There is an immediate opening for a postdoctoral scholar to investigate the use of microfluidic techniques to enhance the efficiency of electroporation for genetic transformation of microbes, including bacteria. The goal of this work is to expand the number of bacteria that can serve as chassis organisms for applications in synthetic biology. The project requires expertise microbiological experimentation but will also incorporate designing experiments to elucidate the physical interaction between bacterial cell envelopes and electric fields. The position is guaranteed for one year with the option for a second year assuming strong performance.

Requirements: This interdisciplinary research project requires a diverse array of skills and ideal candidates will hold a Ph.D. in an area integrating physics and biology (e.g. physics [or biophysics], biological engineering, mechanical engineering, chemical engineering, electrical engineering, or microbiology). Expertise in experimentation with biological systems is required; while experience in microbiological methods is highly desired.

Demonstrated ability to effectively communicate research in the form of journal papers and oral presentations is essential. The ideal candidate will be highly motivated, creative, and possess a passion for fundamental research leading to high-impact applications. The ability to work in a multidisciplinary group of students and faculty is essential.

For further information contact Professor Cullen Buie (crb@mit.edu). Applications should be submitted by April 15, 2015 and include complete CV with names and contact information of three references. Please use the subject line: "Electroporation Postdoc Application: LAST NAME" to ensure the application is properly routed. The expected start date of the postdoctoral appointment is the summer of 2015.