



THE UNIVERSITY OF MICHIGAN
DEPARTMENT OF BIOMEDICAL ENGINEERING

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Opening for a Postdoctoral Research Fellow

The Biomembrane Lab at the University of Michigan, Department of Biomedical Engineering and Department of Chemical Engineering, is seeking a highly qualified protein biochemist or biophysicist for a postdoctoral position in the area of membrane transport proteins.

Description: The mission of the Biomembrane Lab is to develop biophysical assays that increase the understanding of membrane transport proteins. Ultimately, the lab is using the ensuing insight to explore novel strategies for interfering with altered membrane transport in the context of diseases such as multiple sclerosis, Alzheimer's disease, and cancer. The primary focus of this postdoctoral position, which is part of a team effort, is to carry out functional transport assays on multidrug resistance (MDR) proteins. These MDR transporters contribute to resistance to chemotherapy in cancer treatment and their exact mechanisms of function are largely unknown. The proposed research project will combine single molecule optical detection techniques such as fluorescence correlation spectroscopy (FCS) with chip-based electrophysiological recordings through planar lipid bilayers (BLM) to reveal transport rates of chemotherapeutic agents under well-controlled conditions in the presence and absence of agents that may modulate transport function. In analogy to patch clamp recordings of single ion channels, we ultimately aim to resolve transport rates of individual MDR transporters. This project is funded by the National Institute of Health (NIH); the position is available immediately and will be renewed annually based on research progress.

Qualifications: Applicants should have a Ph.D. degree in biochemistry, biological chemistry, biophysics or a related field. Ideally, he or she should have worked with membrane proteins, be familiar with protein reconstitution techniques, and have previous experience with protein activity assays. Previous hands-on experience with electrophysiology (patch clamp or planar lipid bilayer, BLM) is highly desirable. Knowledge in surface chemistry and fluorescence microscopy would be helpful. Ideally, the applicant should be proficient in cell culture, preparation of membrane fragments, ultracentrifugation, gel electrophoresis, Western blotting. These experiences should be reflected in a strong publication record. The applicant should have excellent written and verbal communication skills in English, ability to work independently and collaboratively with graduate students and other postdoctoral fellows, plan and perform experiments, analyze data, communicate results in scientific publications, and enjoy learning new techniques. Previous experience in supervising students, guiding research projects, contributing to grant applications, and preparing effective graphics are advantageous. A competitive salary will be offered for applicants with advanced qualifications; this position could also be conceived long-term as a lab manager.

Contact: Interested candidates should send a cover letter, CV, and the names and contact information (affiliation, mailing address, e-mail, and phone number) of three professional references preferably via e-mail to:

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The University of Michigan is a premier research institution. The Departments of Biomedical Engineering and of Chemical Engineering have leading programs in the country within a stimulating, multidisciplinary, and collaborative research environment. The Biomembrane Lab is housed in the newly-constructed Lurie Biomedical Engineering Building with state-of-the-art facilities and brand new research equipment.