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Postdoctoral position at The University of Texas Medical Branch (UTMB)

Do you like challenging projects and want to understand the function of large biological assemblies at a molecular level? Do you want to use the latest techniques in structural biology to study mechanisms of protein synthesis and antibiotic resistance? If you do, there is an immediate opening in the group of Prof. Matthieu Gagnon for a talented and highly-motivated Postdoctoral Scholar at The University of Texas Medical Branch (UTMB) at Galveston. The Gagnon laboratory combines biochemical techniques with state-of-the-art biophysical methods of X-ray crystallography and single particle cryo-electron microscopy (cryo-EM) to study mechanisms of protein synthesis by determining 3D structures of ribosome functional complexes (Gagnon et al., *Science* 2012; Gagnon et al., *Science* 2014; Gagnon et al., *PNAS* 2016; Zhou et al., *Nat. Struct. Mol. Biol.*, 2020). We are particularly interested to understand the molecular mechanisms of resistance to ribosome-targeting antibiotics in pathogenic bacteria.

The desired qualifications are:

- Ph.D. in biochemistry, chemistry, molecular biology, biophysics, or a related field;
- Practical skills in molecular biology, protein expression/purification, and various biochemical techniques;
- Experience in structural biology (cryo-EM and/or X-ray crystallography);
- Strong interest and motivation to elucidate the molecular mechanisms of protein synthesis and antibiotic resistance through structure determination.

Applicants should possess excellent communication skills and have an excellent track record. The successful candidate is expected to drive forward the projects, compile, analyze and write up data for publication, assist with the training of graduate students and work co-operatively with others.

Structural biology facilities at UTMB are outstanding (https://www.utmb.edu/core). Our cryo-EM core facility recently acquired the Titan Krios high-voltage (300 kV) electron microscope (ThermoFisher) equipped with two direct detector cameras, Falcon 3 (ThermoFisher) and K3 (Gatan), ideal setup for high-resolution structure reconstructions. Other cryo-EM resources include a JEOL 2200FS cryo-EM microscope equipped with a DE20 direct electron detector for high-resolution imaging work and a liquid nitrogen autofilling system allowing week-long experiments, a cryo-microscope JEOL 2100, an FEI vitrobot cryo-plunger, a Leica EM-GP2 cryo-plunger, and a Gatan Solarus plasma cleaner. X-ray crystallography resources include two X-ray area detector systems, a Phoenix crystallization robot, a Minstrel crystal imaging robot, the Alchemist and epMotion liquid handling robots. Other state-of-the-art facilities include NMR, next-generation sequencing, molecular genomics, high-throughput screening, solution biophysics, optical microscopy and computational biology.

Ample opportunities exist at UTMB for interactions with centers of scientific excellence in structural biology and molecular biophysics, biodefense, molecular medicine, cancer biology, infectious diseases, environmental health, aging, and translational sciences (https://www.utmb.edu/centers). Moreover, UTMB boasts a renowned, vibrant and highly active community of infectious disease researchers and clinicians, providing ample opportunities for broader collaborations and development.

To apply, please send your CV, cover letter, and contact information for three references directly to Dr. Matthieu Gagnon at magagnon@utmb.edu. In the cover letter, the applicant should describe how his/her previous research accomplishments and scientific interests fit with the scope of research in the Gagnon laboratory. Further information may be found at the group's web site at https://microbiology.utmb.edu/faculty/matthieu-gagnon.

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