



Postdoctoral Associate in Molecular Microbiology (Mobile DNA, CRISPR/Cas)

Position summary:

The Peters Lab is generally interested in genomic stability and chromosome evolution, especially how these are impacted by mobile DNA elements. We have a special interest in molecular mechanisms transposons use to limit damage to the host and maximize the process of horizontal transfer. We are especially interested in transposon Tn7 and Tn7-like elements, which fall into at least 22 distinct families and appear to reside in 10-20% of all sequenced bacteria, where they contribute to antibiotic resistance, pathogenicity, bacterial host defense and a variety of other functions. In addition to providing an important window into how bacteria evolve new functions, they also provide important tools for genomics including guide RNA-directed transposition via CRISPR/Cas systems.

We seek highly motivated postdoctoral associates with an outstanding record of independent research in molecular biology and bioinformatics for work on multiple projects funded through government grants and a commercial interest.

Examples of current projects include; (1) Optimizing guide RNA targeting with Tn7-like elements for use as genomics tools, (2) Experiments aimed at understanding the molecular underpinnings for how mobile elements associate with CRISPR/Cas systems, (3) The discovery and exploitation of new associations between mobile elements and CRISPR/Cas systems, (4) Computational analysis of the families of Tn7-like elements to understand the cargo they maintain and mechanisms used for targeting.

The laboratory actively interacts with multiple collaborative groups across Cornell as a member of the Cornell DNA Replication, Recombination, and Repair group (micro.cornell.edu/research/r3-group/), the Center for Infection and Pathobiology, the Cornell Transposon group, and the field of Microbiology among others. Cornell is an Ivy League privately endowed research university and a partner of the State University of New York in Ithaca, situated in the natural beauty of the Finger Lakes Region of New York. (cornell.edu/ - visitithaca.com/)

Applicants should submit a cover letter describing their research interests, future career goals, research experience and skills to joe.peters@cornell.edu. A CV that includes a list of publications and the names of three professional references should also be included. Applications will be reviewed on a rolling basis and the positions open until filled. As per Cornell's standard policy, this is a one-year appointment, subject to renewal based on performance and available funding.

Required qualifications:

Individual must either have a Ph.D. or be completing a Ph.D. in Molecular Biology, Molecular Microbiology, or a related field, ideally with experience in bioinformatics.

Responsibilities:

Design and carry out experiments across a number of projects aimed at gaining a fundamental understanding of how prokaryotic mobile genetic elements function at the molecular level, how they facilitate the exchange of genetic information, and the application of these systems as tools to modify prokaryotic and eukaryotic hosts.

Diversity and inclusion are a part of Cornell University's heritage. We're an employer and educator recognized for valuing AA/EEO, Protected Veterans, and individuals with Disabilities.