

The Kellogg laboratory in the Molecular Biology and Genetics Department at Cornell (Ithaca campus, starting January 1 2020), seeks a talented and motivated postdoc to study genome integrity using high-resolution cryo-EM.

The Kellogg laboratory combines protein modeling and design (using Rosetta) with high-resolution cryo-EM. This powerful approach will be used to answer questions in the field of genome organization and remodeling. Successful outcomes will provide mechanistic understanding of the protein-nucleic acid interactions that drive molecular function. Elizabeth (Liz) Kellogg did her postdoc with Eva Nogales at UC Berkeley with an emphasis on high-resolution single-particle cryo-EM. She obtained the first structure of the transiently structure protein tau (normally classified as an intrinsically disordered protein) in its physiological state bound to microtubules. This structure was made possible by her use of sophisticated computational modeling tools (Rosetta) in which she is an expert, having completed her PhD in David Baker's lab at the University of Washington. While at University of Washington, Liz Kellogg authored several highly-cited new modules in Rosetta for estimating protein stability and dynamics. Recently, the Kellogg lab has obtained the first structure of the long elusive P element transposase in the process of integration, and has general interests in studying the fundamental mechanisms of nucleic acid sequence recognition by macromolecules.

The Kellogg lab is a fast-paced environment and is being outfitted with state-of-art equipment. Cornell university has recently acquired a high-end electron microscope (Arctica with K3 or equivalent + energy filter) with support staff to oversee microscope maintenance. In addition to ample access to this high-end microscope, trainees will have ample access to screening microscopes and will receive hands-on training on all aspects of single-particle cryo-EM and computational techniques, from image-processing to molecular modeling.

Strong expertise in biochemistry and a desire to utilize and develop cutting-edge techniques in cryo-EM are required. Demonstrated practical experience with cryo-EM is a big plus. Excellent communication skills and collaborative attitude are essential. The postdoc will play a crucial role in shaping cryo-EM at Cornell and can expect a stimulating, supportive, and creative research environment not only within the lab but across departments, including Chemistry&Chemical Biology, Microbiology, and Applied Physics. Applicant must have Ph.D. or equivalent degree in biochemistry or related field; degree may be anticipated but must be granted by the start date.

Interested individuals may apply directly to Liz Kellogg by sending a C.V., cover letter, and three letters of reference to: lizkellogg@gmail.com