

MacCHESS Staff Scientist

December 2021

The Macromolecular Diffraction Facility of the Cornell High-Energy Synchrotron Source (MacCHESS) is an NIH-supported National Resource providing support for structural biology at CHESS. We have an opening for a Staff Scientist (Research Associate) to support work in structural biology at the Flexible Crystallography (FlexX) station at CHESS. This includes both support of users performing routine macromolecular crystallography (MX) and the development of novel techniques in X-ray scattering as applied to structural biology. User support includes continuing developments to maintain a state-of-the-art facility. Novel techniques are developed in collaboration with scientists who need capabilities beyond the current standard methods. Areas of particular interest are crystallography at (1) ambient temperature, including serial techniques, and (2) high pressure, in a diamond anvil cell (DAC) or using the high pressure cryocooling technique, especially for the trapping of intermediate states of reactions in crystallo. Recent achievements, now available to users but still being refined, include development of a suite of equipment for fixed-target serial crystallography and installation of a DAC especially designed for MX.

The FlexX staff scientist will occasionally be called upon to assist at the MacCHESS BioSAXS station. This is a top-flight facility, with a history of hosting experiments on samples ranging from typical protein and nucleic acid solutions to model membranes to nanoparticles (for drug delivery) to cell nuclei. Techniques employed include static and flow-cell SAXS, chromatography-coupled SAXS, cryo-SAXS, anaerobic SAXS (maintaining a sample under oxygen-free conditions from preparation through placement in the X-ray beam), and high-pressure SAXS. High pressure is a current focus area, using both a static pressure cell and a system that maintains high pressure throughout a chromatography-coupled experiment.

Staff scientist responsibilities include: ensuring that user support is exceptional (in line with MacCHESS' reputation), promoting MacCHESS in the structural biology community, developing emerging techniques required by users, contributing to grant and report writing to maintain MacCHESS funding, and working with other CHESS scientists to improve CHESS as a whole.

A Ph.D. in crystallography, structural biology, biophysics, or a related field, and at least 3 years of experience beyond the degree in a relevant field is required. A solid publication record is essential, and experience working at a synchrotron facility is highly desirable. Excellent communication skills are a must, including fluency in the English language. Appointments are nominally for three years with the possibility for renewal, subject to mutual satisfaction and the availability of funds.

Cornell University embraces diversity and seeks candidates who will contribute to a climate that supports students, faculty and staff of all identities and backgrounds. If you don't meet 100% of the job qualification, but see yourself contributing, please submit an application. We strongly encourage individuals from underrepresented and/or marginalized identities to apply. Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans and Individuals with Disabilities.

Applications should be submitted at <https://academicjobsonline.org/ajo/jobs/20601> and should include a cover letter, a CV, a list of publications, and a detailed summary of research experience and interests. Applicants must arrange to have at least three letters of recommendation sent, as per instructions on the academicjobsonline website. The starting date is negotiable.

Cornell University requires all employees, whether they work on campus or work fully remotely, to be fully vaccinated against COVID-19, or to have obtained a university-approved medical or religious exemption.

For additional information on this requirement, visit: <https://hr.cornell.edu/covid/university-response/vaccination>

Cornell provides great benefits that include comprehensive health care options, generous retirement contributions, educational benefits (Employee Degree, Tuition Aid, Cornell Children's Tuition Assistance Programs), access to wellness programs, and employee discounts with local and national retail brands. Our leave provisions include 22 days of vacation and 13 holidays, including winter break from December 25th through January 1st.

Cornell has been nationally recognized as an award-winning workplace for our health, wellbeing, sustainability, and diversity initiatives. For more information, follow the link: [Benefits at Cornell](#).

The Cornell High Energy Synchrotron Source (CHESS) is one of the most advanced scientific facilities in the world, and its pioneering capabilities are helping to keep the United States at the leading edge of scientific research. Located on the central campus of Cornell University, CHESS is internationally recognized for providing high intensity X-ray beams and advanced instrumentation to scientists and students around the world. The lab is comprised of seven state-of-the-art beamlines, each of which routinely hosts world-leading research in physics, chemistry, biology, environmental sciences, materials science, cultural heritage, and engineering. CHESS is a world leader in innovation for complex sample environments including in situ heating and loading, accelerators, detectors, and x-ray optics and plays a key role in many medical discoveries and scientific breakthroughs, including research that received Nobel Prizes in Chemistry in 2003 and 2009. The recent CHESS-U upgrade has expanded the lab's capabilities to allow scientists to address the most pressing global challenges facing our society. CHESS is committed to engaging with industry, academia and government through its funding from the National Science Foundation, Air Force Research Lab, National Institutes of Health, and New York State.

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans and Individuals with Disabilities. We also recognize a lawful preference in employment practices for Native Americans living on or near Indian reservations. Cornell University is an innovative Ivy League university and a great place to work. Our inclusive community of scholars, students, and staff impart an uncommon sense of larger purpose, and contribute creative ideas to further the university's mission of teaching, discovery, and engagement.