

Poster Presentation

MS22.P16

NE-CAT Crystallography Beamlines for Challenging Structural Biology Research

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The NorthEastern Collaborative Access Team (NE-CAT) focuses on the design and operation of synchrotron X-ray beamlines for the solution of technically challenging structural biology problems and provides an important resource for the national and international research community. Currently NE-CAT operates two undulator beamlines: 24ID-C - tunable in the energy range from 6 to 22keV and 24ID-E - not-tunable, but optimized for Se SAD experiments. Both beamlines are equipped with state-of-the-art instrumentation. MD2 microdiffractometers installed at both beamlines provide very clean beams down to 5 microns in diameter and are capable of visualizing micron-sized crystals. Large area detectors (ADSC Quantum 315 at 24ID-E beamline and Pilatus-6MF at 24ID-C beamline), not only provide the best diffraction data, but also make possible to resolve large unit cells. Both beamlines are equipped with ALS style automatic sample mounters. Locally developed software suite RAPD provides data collection strategies, quasi-real time data integration and scaling and simple automated MR/SAD pipeline through 384 core computing cluster. Users of the beamlines are supported by experienced resident crystallographers. To meet the needs of technically challenging crystallographic projects, cutting-edge hardware and software ideas are implemented. A summary of beamline capabilities, technology, scientific highlights and details of availability will be presented. Funding for NE-CAT is provided through P41 grant from the NIGMS and from the NE-CAT member institutions.

Keywords: synchrotron beamline, macromolecular crystallography, microdiffraction