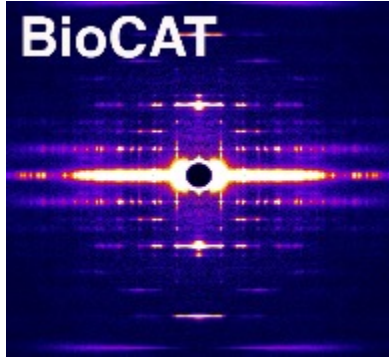


BioCAT after APS -U

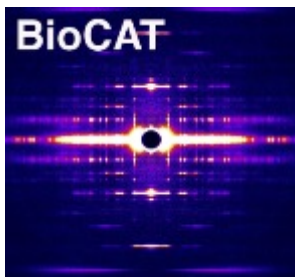
Thomas Irving

BioCAT, Dept. of Biology, Illinois
Institute of Technology



What is BioCAT?

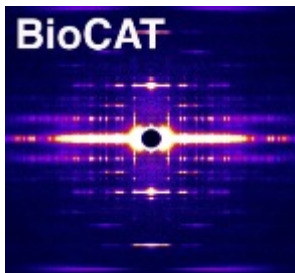
- BioCAT operates undulator beamline 18-ID at the Advanced Photon Source, Argonne National Laboratory
- Funded as a P30 Mature Synchrotron Facility for Structural Biology from January 2021
- Was one of the early beamlines in the original APS
- User program in operation since 1998
- Now entering a new phase with APS-U
- BioCAT P30 grant has been resubmitted for next 5 years of operation



Scientific Mission of BioCAT

Modality		Sample Applications
Fiber diffraction	Muscle Diffraction	Muscle regulation, heart disease, muscular dystrophy, other skeletal muscle diseases
	Fiber Crystallography	Neurodegenerative disease, arthritis, connective tissue
	Fiber Diffraction Imaging	Neurodegenerative disease, arthritis, cancer metastasis, traumatic brain injury, connective tissue diseases
SAXS	Equilibrium SAXS	Structure of Macromolecules: complexes, protein-ligand interactions, flexible and intrinsically disordered proteins
	Time Resolved SAXS	Kinetics, protein and RNA folding, enzymatic reactions

BioCAT



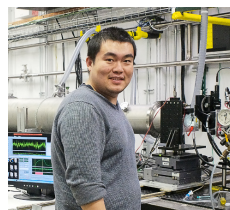
People



Tom Irving
PI



Jesse Hopkins
Director



Weikang Ma
Beamline
scientist



Max Watkins
Beamline
scientist



ILLINOIS INSTITUTE
OF TECHNOLOGY

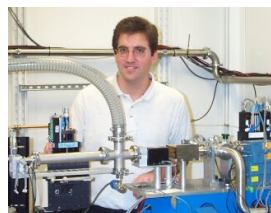


Funding:

- NIH: P30 GM138395
- DOE: DE-AC02-06CH11357



Carrie Clark
Administr
ator



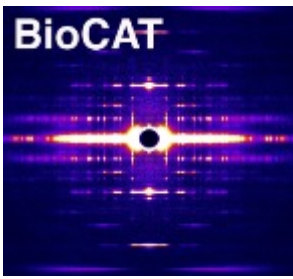
Rick Heurich
Beamline
Engineer



Mark Vukonich
Support
Specialist



Bill Lavender
Software
Engineer



Agenda

- 1:00 pm - Opening remarks - Dr. Tom Irving, BioCAT PI
- 1:05 pm - Overview of APS-U and effects on BioCAT - Dr. Jesse Hopkins, BioCAT Director
- 1:20 pm - Upgraded and new capabilities for solution SAXS - Dr. Max Watkins, BioCAT Beamline Scientist
- 1:35 pm - Upgraded and new capabilities for muscle diffraction - Dr. Weikang Ma, Beamline Scientist
- 1:50 pm - Obtaining beamtime at BioCAT - Dr. Jesse Hopkins, BioCAT Director
- 2:05 pm - Q&A