

9) Automated Biological Calorimetry and X-ray Crystallography Facility

Equipment and Research Support Services

8 Althouse

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X-ray crystallography is the chief method for determining the atomic resolution three-dimensional structures of biological macromolecules. The focus of the facility is to provide the necessary infrastructure and support for individual investigators to undertake single crystal X-ray structural studies as well as high-throughput thermodynamic analysis of biological macromolecules binding/folding to both university and outside researchers. We provide instrumentation, training and collaboration for:

- Protein characterization including dynamic light scattering, automated differential scanning calorimetry, bio-layer interferometry and circular dichroism
- Binding studies using automated isothermal titration calorimetry.
- Robotic crystallization, incubators, UV and digital microscopes
- Robotic imaging of crystallization screens
- X-ray diffraction data collection and processing
- Structure determination and analysis
- Molecular modeling, image generation and molecular movie making
- Small angle solution X-ray scattering
- Small molecule X-ray crystallography
- Micro-electron diffraction using a cryoEM
- Manuscript and grant writing

Our experienced staff is available to train researchers to use equipment and to assist project development and research.