

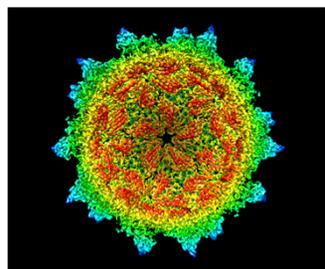


FSU CORE FACILITIES: BIOPHYSICAL CORES

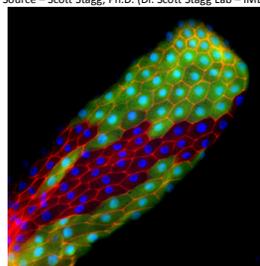


Electron Microscopy, Nuclear Magnetic Resonance, Physical Biochemistry, and X-Ray Crystallography

Duncan Sousa, Banghao Chen, Claudius Mundoma, and Thayumanasamy Somasundaram



Adeno-associated virus – AAV (4.5Å resolution)
Source – Scott Stagg, Ph.D. (Dr. Scott Stagg Lab – IMB)



Drosophila follicular epithelium (40x)
Source – Yoichiro Tamori, Ph.D. (Dr. Wu-Min Deng Lab – IMB)



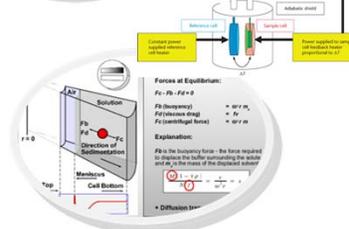
Biological Science Imaging Resource

Duncan Sousa & Tom Fellers

bsir.bio.fsu.edu

617-633-0713 | dsousa@fsu.edu

The BSIR is dedicated to making state of the art transmission electron microscopy (TEM) and confocal microscopy available to everyone without multimillion dollar investments in instruments and facilities. We offer affordable, state of the art, remote robotic TEM imaging using FEI's Titan Krios™ operated by staff with decades of EM experience. Through the Appion automated data collection system, users can view data collected in real time via a web browser and direct BSIR staff during the data acquisition process. We also offer laser scanning dual photon confocal imaging using Zeiss's LSM 510 confocal microscope.



Physical Biochemistry Facility

www.sb.fsu.edu/facilities/PBF-facility

Claudius Mundoma 850-644-5147 | cmundoma@fsu.edu

The PBF was established in collaboration with the Departments of Chemistry & Biochemistry, Biological Sciences and Institute of Molecular Biophysics.

Trains students, post-docs, faculty and staff

Has served over a hundred users from 34 research groups both in FSU and SUS systems

Consults with researchers on experimental design and analysis of results.

CAPABILITIES

- | | |
|----------------------------|-------------------------|
| Isothermal Calorimetry | SEC-MALS |
| Analytical Ultracentrifuge | Fluorescence and UV-Vis |
| Circular Dichroism | Stopped Flow Kinetics |
| Dynamic Light Scattering | |

Nuclear Magnetic Resonance (NMR) Facility

www.chem.fsu.edu/facilities

850-644-63334 | chen@chem.fsu.edu

NMR is one of the most powerful non-destructive spectroscopic analytical techniques, which can be used to determine the structures of chemical compounds. Modern NMR spectroscopy has been widely applied in many disciplines of scientific research, medicine, and various industries, such as chemistry, biology, material science, medicine, petroleum industry, environmental studies, etc.

The main campus NMR facility has eight general use spectrometers from 300 MHz to 700MHz with solution, solid CPMAS, Ultrafast-CPMAS, HR-MAS, and Cryo-probes. They are located in both DLC and CSL buildings of the Department of Chemistry and Biochemistry. The cutting edge instruments enable to run any samples from liquid, gel, solid, and bio-samples.



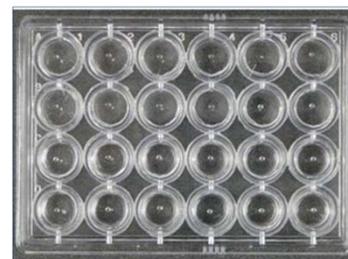
500 MHz WB AVIII HD for Solid



700 MHz AVIII with Cryo-probe



R-Axis IV++ detector



Crystallization Screening

X-Ray Crystallography Facility

www.sb.fsu.edu/facilities/x-ray-facility

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The x-ray crystallography facility at the Institute of Molecular Biophysics provides the instrument and expertise for collecting x-ray diffraction data from single crystals. It is a FSU-wide Core available to everyone who wants to find the atomic details of macromolecules and their complexes. The Facility also enables the synchrotron x-ray data collection at Advanced Photon Source at Argonne, IL.

Macromolecular crystallization screening services are also offered to those who want to try to crystallize their macromolecule for the first time and optimize it to grow crystals suitable for single crystal x-ray diffraction.