**Core Facilities and Shared Instrumentation for**

**Research in Biochemistry at the**

**University of Maryland**

The Department of Chemistry and Biochemistry and the University have a variety of core facilities with instrumentation that can be used for research on biological molecules. The web-sites for these facilities give information about their capabilities as well as their locations, contact information, terms for use, and fees, if any.

**I. Department of Chemistry and Biochemistry**

The departmental web-site has information about the shared Analytical Facilities in the department- see <http://www.chem.umd.edu/sharedinstrumentation>

The following departmental facilities are of greatest use for research in biochemistry:

**Biomolecular NMR Facility**  <http://www2.chem.umd.edu/facility/bio-nmr/>

Located in room 1105, Biomolecular Sciences Building.

**Mass Spectrometry Facility**

<http://www.chem.umd.edu/sharedinstrumentation/massspectrometryfacility>

Located in room 0511 (wing 5) of the Chemistry Building.

**X-Ray Crystallography Center** <http://www2.chem.umd.edu/facility/xray/>

The center includes instrumentation for small angle X-ray scattering (SAXS) analysis of biological macromolecules. It is located in wing 2 of the Chemistry Building.

**Surface Analysis Center**

<http://www.chem.umd.edu/sharedinstrumentation/surface-analysis-center>

The Center has an atomic force microscope, among other instruments.

**Room 3517 Shared Equipment Room** (Room 3517, Chemistry Building)

Jasco J-810 Circular Dichroism Spectrometer

<http://www.chem.umd.edu/sharedinstrumentation/optical-instrumentation-facility/>

Storm 860 Phosphorimager (Molecular Dynamics)

SpectraMax M5e Plate Reader (Molecular Devices)

Liquid Scintillation Counter LS6500 (Beckman Coulter)

**II. College of Computer, Mathematical, and Natural Sciences** (CMNS)

Information about shared research facilities in the College can be found at:

<http://cmns.umd.edu/research/shared-facilities>

The following core facilities may be useful in biochemical research.

**Bioscience Core Facilities:** <https://biosciencecores.umd.edu/>

**Bioscience Imaging Core** <https://biosciencecores.umd.edu/imaging.html>

Has light, electron, and atomic force microscopes for a wide range of applications.

**Genomics Core** <https://biosciencecores.umd.edu/genomics.html>

Has instruments for qPCR and other genomics applications.

**Flow Cytometry Core** <https://biosciencecores.umd.edu/flow-cytometry.html>

Has instruments for flow cytometry and cell sorting.

**Proteomics Core** <https://biosciencecores.umd.edu/proteomics.html>

Protein and proteome analysis by mass spectrometry.

**Light Scattering Center** <http://www.lightscatteringcenter.umd.edu/>

Analysis of biological macromolecules by static and dynamic light scattering.

**AIM Lab** <https://www.nanocenter.umd.edu/aimlab/about/>

Advanced Imaging and Microscopy Laboratory, Maryland NanoCenter

The AIM Lab has transmission and scanning electron microscopes for characterization of the structure and composition of a broad range of materials, including biological materials, with nanometer resolution.

**III. College of Engineering** <https://bioe.umd.edu/research/institutes-labs-centers>

**BioWorkshop** <https://bioe.umd.edu/bioworkshop>

The BioWorkshop in the Department of Bioengineering has 21 different instruments for many applications, including biological imaging, cellular and biochemical analysis, biomaterial characterization, and histology.

**Biotechnology Scale-Up Facility** (BSF) <https://research.umd.edu/core-facilities/bsf>

The BSF has facilities for cell culture from small to large scale (2 to 250 liters), including for fermentation, cell culture, and stem cell growth.

**IV. Institute for Bioscience and Biotechnology Research** (IBBR), Rockville, MD

IBBR, located in Rockville, MD, is a part of the University System of Maryland. Several faculty whose laboratories are located at IBBR hold appointments in the Department of Chemistry and Biochemistry. IBBR has a variety of research instrumentation for examining the structure and physical properties of biological molecules.

**Maryland Center for Advanced Molecular Analysis** (M-CAMA)

<https://www.ibbr.umd.edu/mcama>

The Center, located at IBBR, has several instruments for biomolecule structure determination by cryo-electron microscopy (cryo-EM).

**V. Division of Information Technology**

**High performance computing** <http://hpcc.umd.edu/>

The University of Maryland has several high performance computing resources for large parallel computational applications.