

CORES | Center of Research & Educational Support

SCHOOL OF CHEMICAL SCIENCES

The School of Chemical Sciences operates thirteen facilities which offer a wide range of unique research and teaching support to students, faculty and staff members of the School and University as well as to research clients and collaborators worldwide.

Since 1927, when George L. Clark brought his unique perspective on the relationship between instrumentation and analysis to the Urbana campus, the School of Chemical Sciences has developed a long-standing tradition of providing superior service to the cutting edge research conducted at the University of Illinois. This reputation is recognized in the academic and industrial worlds, both domestically and abroad.

The School of Chemical Sciences CORES (Centers of Research and Educational Support) strive to provide the most up-to-date equipment and analytical techniques to our researchers. Our service facility directors and staff are highly specialized professionals holding advanced degrees and decades of experience in their respective fields. Their expertise serves as a resource to researchers for collaboration and assistance, serving as co-authors on publications and grants.

Cell Media Facility

Computing

Electronics Services

EPR Laboratory

Graphic Services

Glass Shop

High-throughput
Screening Facility

Machine Shop

Mass Spectrometry
Laboratory

Microanalysis Laboratory

NMR Laboratory

Storeroom

X-Ray Diffraction
Laboratory



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EXCELLENCE -

From **process**,
to **education**,
to **presentation**

Cell Media Facility
491 Roger Adams Lab
217-244-5898

Sandy McMasters
smattick@illinois.edu

The facility provides economical materials that are required for the growth of bacteria, yeast, and cultured cells. Services include classic and custom cell culture medium, solid media plates, competent cells, cryogenic cell storage, charcoal-dextran treatment of serum, and cell culture training. Instrumentation includes the Storm, a laser-based scanner for storage phosphor and fluorescent imaging. The facility also features a complete biosafety level 2 cell culture lab that may be utilized by anyone who lacks such equipment.

Computing
125 Noyes Lab
217-244-7515

Jay Guelfi
computing@scs.illinois.edu

Provides hardware, software, and personnel resources to facilitate the use of computational science and molecular modeling in theoretical and experimental research. A 3-D Visualization laboratory offers training and a wide selection of scientific software and databases for molecular modeling and analysis. The facility also provides hands on, in-School support for network, phones and computers.

Electronic Services
125 Noyes Lab
217-333-0865

Chad Stevens
stevens2@illinois.edu

Offers design, construction and repair service for electronic and electro-mechanical equipment. Our engineers work with clients to design and fabricate hardware that may not be commercially available. Expert technicians are available for repair and maintenance of equipment and devices used in both research and teaching laboratories.

EPR Laboratory
67a Medical Sciences Bldg.
217-300-1081

Toby Woods
tobyw@illinois.edu

This facility provides Electron Paramagnetic Resonance (also called ESR, electron spin resonance, or EMR, electron magnetic resonance), ENDOR, and ESEEM facilities and expertise. EPR has applications in chemistry, physics, biology, and medicine: it may be used to probe the "static" structure of solid and liquid systems, and is also very useful in investigating dynamic processes. Scientists of all disciplines can visit lab and undertake collaborative or other work.

Graphic Services
71 Noyes Lab
217-244-1784

Dorothy Loudermilk
loudermi@illinois.edu

Graphic Services produces custom research graphics for publications, proposals, posters and papers. Assistance in preparing customer files to meet current journal and publishing standards is also available. In addition to research graphics, the facility provides design and production of promotional and informational posters, signage, flyers and brochures.

Glass Shop
114 Noyes Lab
217-333-3610

Andy Gibbs
agibbs@illinois.edu

An on-site facility for creating or repairing one-of-a-kind glassware. Clients can work directly with a scientific glassblower to develop new designs and to make custom glassware needed for research. The facility also specializes in the repair and modification of existing glassware, often reducing cost and downtime associated with replacement of critical equipment.

High-throughput Screening Facility
361 Noyes Lab
217-244-4198

Chen Zhang
czhang8@illinois.edu

Assists researchers in developing, optimizing and performing high-throughput screenings (HTS) of chemical libraries to identify macro-molecule effectors. The HTSF contains over 180,000 small molecule compounds. The users will have access to facility equipment including liquid handlers, plate readers, plate washer, plate centrifuge and robotic organic synthesizer. In addition to HTS, the facility can also assist and perform experiments in mammalian cell culture.

Machine Shop
B71 Roger Adams Lab
217-333-4278

David Williams
scs-machineshop@illinois.edu

Builds and repairs ultra-high vacuum, high pressure, optical and mechanical equipment. The facility also assists in the design of new and custom equipment to meet research needs. The facility also operates a student shop which provides training in basic milling, drilling, lathe turning, soldering, and sawing techniques. The generation and interpretation of machine drawings are discussed as part of the training course.

Mass Spectrometry Laboratory
41 Noyes Lab
217-333-2545

Furong Sun
frs@illinois.edu

The School of Chemical Sciences Mass Spectrometry Laboratory (MSL) provides a wide variety of chemical analysis using mass spectrometry techniques for organic and biological samples. The facility is capable of performing analyses on small molecules, small or large non-volatile molecules and mixtures using a variety ionization techniques.

Microanalysis Laboratory
47 Noyes Lab
217-333-3095

Danielle Gray
dgray@illinois.edu

Provides three types of services for research and education: elemental, thermal and surface analysis. Elemental analysis includes CHN, Halide and ICP analysis. Thermal analysis is done using Micro calorimeter, Thermogravimetric Analyzer (TGA) and Differential Scanning Calorimetry (DSC) by the students once they are trained. Surface analysis measures physisorption, chemisorption, vapor adsorption or heat of adsorption for solid samples. The facility is well equipped with a state-of-the-art ICP-MS which can be used to detect trace elements present in various kinds of samples.

NMR Laboratory
146 Roger Adams Lab/55 Noyes Lab
217-244-0564

Dean Olson
dolson@illinois.edu

The NMR Lab of the School of Chemical Sciences offers a wide range of spectrometers, probes, and technical capabilities including multi-dimensional, multi-nuclear, and solid-state NMR. Supported by four full-time staff and two student hourlies, ten spectrometers in three locations allow walk-up and long-term NMR experiments 24/7. New users receive about 4 hours of individual basic training with additional instruction available for variable temperature control, multi-dimensional NMR, and specialty spectrometers and experiments.

Storeroom
94 Roger Adams Lab
217-244-0985

Karla Southern
ksouther@illinois.edu

Stocks supplies of: chemicals, gloves, glassware, dry ice, general laboratory and office supplies. Available for purchase to anyone with a valid University netid and University FOPL account number. Also managing the SCS Chemical Inventory System "Chem-Tracking" database. Users of each research group have access to this database only.

X-Ray Diffraction Laboratory
60 Noyes Lab
217-244-1708

Danielle Gray
dgray@illinois.edu

Provides complete structural characterization services using X-rays in solutions, colloids, liquid crystals and solids. These services help researchers correlate their X-ray experiment with other characterization methods. The facility has the capability to perform a wide variety of X-ray diffraction experiments and maintains structural database systems providing electronic search, retrieval, analysis and graphics for inorganic, organic and macromolecular structures. The professional staff offers instruction on small molecule crystal growth, design of X-ray experiments and strategies for data collection. Trained users have access to the single crystal diffractometers by appointment and to PXRD via 24/7 scheduled walk-up access.