Centers & Institutes

The following centers, institutes, and non-Chemistry Department facilities are accessible to UW Chemistry department members. See also Chemistry Department Facilities, Computing Resources, or Teaching & Learning Resources.

Biological Physics, Structure and Design (BPSD)

The BPSD graduate program aims to train young scientists to work at the interface of physical and biological sciences. The program offers a diverse set of research programs and promotes interdisciplinary work through strong interactions between labs in these different areas. The faculty are from diverse backgrounds, but all take a physical and quantitative approach to biological questions. BPSD graduate students regularly work for faculty within the Chemistry Department.

Center for Process Analysis & Control (CPAC)

The CPAC, established at the University of Washington in 1984, is a consortium of industrial, National Laboratory, and Government Agency Sponsors addressing multidisciplinary challenges in Process Analytical Technology and process Control through fundamental and directed academic research. It focuses on three programs: 1) Investigation of new measurement approaches based on the miniaturization of traditional instrumentation and the development of new sensors and non-traditional instruments. 2) Investigation of issues related to the integration of process measurement with process modeling and control, and cross-cultural education between measurement and control communities. 3) The improvement of mechanisms for interaction, collaboration, and communication of Center activities, research programs, government agencies, and the general measurement and control community.

Center for Scalable Predictive Methods for Excitations and Correlated Phenomena (SPEC)

SPEC is a DOE-funded center consisting of a multidisciplinary team of internationally recognized researchers that work together to couple theoretical and computational breakthroughs that will deliver scalable, open-source software libraries for simulating realistic molecular structures, dynamics, and spectra on extreme-scale leadership computing facility systems.

Center for Selective C-H Functionalization

The NSF Center for Selective C–H Functionalization aims to bring about a paradigm shift in the logic of chemical synthesis, one that has the potential to impact the construction of all organic molecules. The Center brings together leading experts in a range of chemical disciplines from across the United States to work collaboratively on challenges beyond the scope of individual investigators.

Center for Synthetic Biology (CSB)

The CSB is a center for research in synthetic biology with a mission to provide a collaborative and interdisciplinary environment for research, education, innovation, safety and responsibility in synthetic biology at the UW and in the Seattle area.
Center for the Science of Synthesis Across Scales (CSSAS)
The Center for the Science of Synthesis Across Scales (CSSAS) is a U.S. Department of Energy Energy Frontier Research Center (EFRC), housed at UW in partnership with the Pacific Northwest National Laboratory, Oak Ridge National Laboratory, the University of California San Diego, and the University of Chicago. Biologists, engineers, and physical scientists are researching self-assembly at the molecular scale, including building blocks like proteins and inorganic nanoparticles, in order to create new materials for energy applications.

Clean Energy Institute (CEI) and WA Clean Energy Testbeds (RTT and Scale Up)
The CEI at the University of Washington was founded in 2013 with funds from the state of Washington. Its mission is to accelerate the adoption of a scalable clean energy future that will improve the health and economy of our state, nation, and world. To accomplish this, CEI supports the advancement of next-generation solar energy, battery materials and devices, as well as their integration with systems and the grid. The Institute creates the ideas and educates the people needed to generate these innovations, while facilitating the pathways to bring them to market. The Washington Clean Energy Testbeds is a UW facility dedicated to reducing the time and capital needed to translate research discoveries into scalable energy products and it also houses meeting and office space where users from academia and business work and collaborate.

eScience Institute
The eScience Institute empowers researchers and students in all fields to answer fundamental questions through the use of large, complex, and noisy data. As the hub of data-intensive discovery on campus, they lead a community of innovators in the techniques, technologies, and best practices of data science and the fields that depend on them.

Institute for Nano-Engineered Systems (NanoES)
The Institute for Nanoengineered Systems catalyzes innovative, interdisciplinary, and industry-relevant research in the design, fabrication, and integration of scalable nano-engineered devices and systems at the University of Washington. They also host the Washington Nanofabrication Facility (WNF), with cutting-edge nanofabrication, characterization and testing facilities, and is home to several cutting-edge research groups.

Institute for Protein Design (IPD)
Natural proteins evolved over millions of years to solve the most complex challenges on Earth. But we face new and pressing challenges today. The goal of the Institute for Protein Design is to create a whole new world of synthetic proteins to address these challenges. To achieve this, the IPD is marshalling deep institutional strengths in faculty, scientific staff, postdoctoral fellows and graduate students, and partners from collaborating institutions, innovator networks and from the computer and biotechnology industries — bringing extraordinary expertise to bear on a singular focus to advance the potential of protein design.

Mobility Enabled Science in Seattle (MESS)
Ion mobility (IM) is a suite of technologies that leverages fundamental ion-neutral interactions and is complementary to mass spectrometry. MESS brings together researchers from across the UW to advance the contributions of IM to the environmental, health, and physical sciences.

Molecular Analysis Facility (MAF)
The MAF is a fully staffed instrumentation facility located in the UW Molecular Engineering & Science Building (MoES) which houses extensive instrumentation for microscopy, spectroscopy, biophysics, and surface science.

**Molecular Engineering Materials Center (MEM-C)**

The MEM-C is a NSF-funded research center dedicated to designing, developing, and deploying new complex nanomaterials that accelerate future technologies in broad sectors including information processing, sensing, energy, and research tools. Research activities are coordinated among two colleges and five departments across UW's campus and Pacific Northwest National Laboratory (PNNL) to address major trans-disciplinary challenges in materials research.

**Molecular Engineering & Sciences Institute (MoES)**

The Molecular Engineering & Sciences Institute at UW is home to an interdisciplinary community of researchers who use molecular engineering to tackle grand challenges in health and energy, areas in which the outstanding needs are complex and call for creative solutions that transcend disciplines.

**Northwest Institute for Materials Physics, Chemistry, and Technology (NW IMPACT)**

NW IMPACT is a joint research collaboration of the U.S. Department of Energy's Pacific Northwest National Laboratory and the University of Washington with a mission to accelerate transformative advances in technology through the science of making materials. These advances will drive discoveries and advancements in energy, telecommunications, medicine, information technology, and other fields.

**Northwest Metabolomics Research Center (NW-MRC)**

The NW-MRC is located at the University of Washington School of Medicine, South Lake Union (SLU). The aim of the center is to bring together, coordinate, and integrate significant capabilities in metabolomics to foster a broad range of interdisciplinary research throughout the Pacific Northwest Region and nationally. The NW-MRC focuses on mass spectrometry and NMR based metabolomics, including targeted, global and metabolic flux analysis. We also perform biostatistics and pathway analysis, as well as unknown metabolite identification as needed.

**Optical and Electron Microscopy Centers**

Multiple outstanding and well-equipped imaging centers are accessible to the UW community. These provide various capabilities for optical microscopy, electron microscopy, and pathology imaging services, including paid hourly use of instruments by users as well as paid services provided by staff. Beckman Cryo-EM Center, Biology Imaging Center, Digital Microscopy Center, FHCRC Cell Imaging Center, Histology and Imaging Core, HMC Digital Pathology Facility, ISCRM Lynn & Mike Garvey Imaging Core, W.M. Keck Microscopy Center.

**Pacific Northwest National Laboratory (PNNL)**

PNNL is a U.S. national laboratory located in Richland, WA and describes itself as having “strengths in chemistry, earth sciences, and data analytics”. Particular labs or institutes of interest include the Institute for Integrated Catalysis (IIC), Environmental Molecular Sciences Laboratory (EMSL), the Center for Molecular Electrocatalysis, and the Interfacial Dynamics in Radioactive Environments and Materials (IDREAM). Many UW research groups collaborate extensively with PNNL researchers and some PNNL researchers are affiliate faculty within the chemistry department who advise graduate students.
South Asia International Center of Excellence for Malaria Research (ICEMR)

The NIH-funded South Asia ICEMR is a consortium of over 100 scientists who share the overall goal of understanding how the genetic plasticity or adaptability of malaria parasites in the region affects drug resistance, virulence, transmission and human immunity. It is directed by Prof. Pradip Rathod.

UW Proteomics Resource

The mission of this proteomics facility is to advance proteomic technologies and apply these technologies to significant biological problems. They offer analytical and instructional expertise in state of the art mass spectrometric techniques and data analysis with the primary aim of providing UW researchers with “hands-on” training and access to contemporary resources needed to develop and meet their proteomics research interests.

Washington Nanofabrication Facility

The WNF at UW is a micro and nanotechnology user facility that supports fabrication efforts for basic and applied research, advanced research and development, and prototype production. A wide variety of resources are available for lithography, vapor deposition, metrology, microscopy and more.

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