Core Facilities
Institute for Applied Life Sciences
University of Massachusetts Amherst

Raman, IR, and XRF Spectroscopy
Chenoweth
Lili He | lilihe@umass.edu
Provides resourceful advanced spectroscopic analysis of versatile organic and inorganic samples, including agricultural, environmental, food, and biomedical materials, as well as polymers and heavy metals.

Roll-to-Roll Fabrication and Processing Facility
LSL S440 Suite
Jeff Morse | jdmorse@research.umass.edu | (413) 545-5264
Provides a unique set of custom, moving web-based tools for the translation of advanced materials and nanomanufacturing processes to industrially relevant scalable platforms for the development of next generation life science innovations.

Histology-Tissue Resources
Bioresource and Molecular Analysis
Sallie Schneider | sallie.schneider@baystatehealth.org | (413) 794-0941 | Pioneer Valley Life Sciences Institute
Capability to process and paraffin embed human, animal and plant tissues, section fixed or frozen tissues, as well as perform histological analyses.

Massachusetts Green High Performance Computing Center
100 Bigelow Street, Holyoke, MA 01040
hpc@it.umass.edu
University of Massachusetts Amherst
Provides world-class computational infrastructure, indispensable in the increasingly sensor and data rich environments of modern science and engineering discovery.

Small Molecule Screening Facility (SMSF)
(High Throughput Screening)
University of Massachusetts Medical School
364 Plantation Street, Worcester, MA 01655
Sangram Parelkar | Sangram.Parelkar@umassmed.edu
(508) 856-8315 | University of Massachusetts Amherst
Provides investigators with a platform for assay development and screening of unique, small drug-like molecule libraries occupying novel chemical space in a variety of readout systems for the discovery of exceptional chemical probes, potential diagnostic and therapeutic candidates of high impact, as well as research tools.

Discover the Cores
Core Facilities Seminar Series
Virtual and in person, biweekly seminars to discover what great resources that the centralized UMass Amherst Core Facilities offer to our campus community and the New England region. Want to attend a seminar or missed one? The schedule and all replays are available at www.umass.edu/ials/core-facilities-seminar-series.

Off-Campus Core Facilities
Histology-Tissue Resources
Sallie Schneider | sallie.schneider@baystatehealth.org | (413) 794-0941 | Pioneer Valley Life Sciences Institute
Capability to process and paraffin embed human, animal and plant tissues, section fixed or frozen tissues, as well as perform histological analyses.

Sensor Integration
LSL S469
Robert Jackson | Jackson@ecs.umass.edu | (413) 545-1386
Miniaturizing systems in preparation for human testing.

Sensor Integration
LSL S360 Suite
Rebecca Spencer | rspencer@psych.umass.edu
(413) 545-5987
Equipped with partial and whole-head EEG systems for recording sleep physiology (sleep staging). A central control room will allow for on-line observation of sleep and monitoring of sleep in populations from infants to the elderly.

X-Ray Scattering Facility
Conte B341, B522
AlexRibbe@polysci.umass.edu | (413) 658-7415
Instruments dedicated to the structural analysis of crystalline materials, the determination of highly periodic morphologies in self-assembled systems over a large length scale range.

Our Sister Campuses
UMass has more than 90 Research Core Facilities across the state of Massachusetts that are available to researchers from government, academia and industry on a fee-for-service basis. These shared resources offer a wide range of services to the research community, including cutting-edge technologies, high-end instrumentation and technical support for basic, translational and clinical research.

UMass Boston
100 William T. Morrissey Blvd., Boston, MA
www.umb.edu/orp/presearch/core_facilities

UMass Lowell
One University Avenue, Lowell, MA
www.uml.edu/Research/CRF/

UMass Medical School
55 Lake Ave North, Worcester, MA
www.umassmed.edu/research/cores

Partner With Us!
UMass Amherst
Core Facilities Inquiries
Andrew Vinard
Core Facilities Director
UMassCores@umass.edu | (413) 577-4582
Institute for Applied Life Sciences
Life Science Laboratories
240 Thatcher Road
Amherst, MA 01003
umass.edu/ials/core-facilities

Research and Innovation to Translate Basic Science into Product Candidates

Facilities for Precision Manufacturing, Characterization, Human Health Monitoring, Cellular & Molecular Analysis
Advanced Digital Design and Fabrication (ADDFab)

LSL S470
David Follette | follette@umass.edu | (413) 577-4540
Cutting Edge 3D Printing in metals and polymers for fabrication, research, training, and education. Printing technologies include DMLS, DED, SL5, FFF and Polylet.

Animal Imaging

GB 068
Amy Burnside | aburnside@umass.edu | (413) 545-1385
James Chambers | jchambe@umass.edu | (413) 577-4580
Designed to assist members of the research community on UMass and other five college campuses to conduct research using live animal imaging technologies. Equipment is capable of fluorescence and luminescence imaging independent of or concurrent with CT imaging. A new high resolution microCT is expected Jan 2019.

Animal Models

LSL S521
Wei Cui | wcui@umass.edu | (413) 545-0673
Provides transgenic, gene targeting, and mouse surgery service and training, performs microinjections of DNA into fertilized embryos to generate transgenic mice. Uses cutting-edge technologies-CRISPR/Cas9 genome editing, to generate gene knock-out or knock-in mice or other animal models.

Atomic Force Microscopy (AFM)

Conte B343
Alex Ribbe | aeribbe@polysci.umass.edu | (413) 658-7415
Provides atomic force microscopy (AFM) related technologies such as tapping mode, contact mode or conductive AFM as well as force measurements.

Biophysical Characterization

LSL S547
Stephen Eyles | eyesl@biochem.umass.edu | (413) 577-1528
Cedric Bobst | cbobst@umass.edu
Interactions between biological macromolecules like proteins, nucleic acids, lipids and their complexes, and small molecule interactions with these macromolecules.

Bioproduction/ Separation

LSL S577, S577A
umasscores@umass.edu
Equipment for expression, separation, and isolation of biomolecules allowing users to culture cells including bacterial, yeast, insect, plant, and mammalian cells, and then separate biomolecules of interest i.e. proteins, nucleic acids, natural products, and metabolites.

Cell Culture

LSL S571A, S570
Mike Daley | mdpdaley@umass.edu | (413) 545-2601
Two cell culture facilities for both biological and bio-engineering approaches. Biosafety cabinets, incubators and general wet lab supplies.

Center for Human Health & Performance (CH&PP)

LSL S360 Suite
Michael Busa | mbusa@umass.edu | (413) 577-0574

Exercise Intervention and Outcomes

Diagnostic testing capabilities include: exercise performance, VO2 max, exercise stress testing, strength testing, body composition (including abdominal obesity) and bone density evaluation.

Human Motion

Assessment of human movement (free living and robot assisted) and human and robotic testing of sensor technologies.

Living Science

Evaluate biosensor performance in healthy participants or participants who are at risk for chronic disease while living in a natural environment.

Room Calorimeter

Capability to measure 24-hour human energy expenditure for purposes of movement-sensor calibration and validation, and to conduct studies requiring assessment of energy balance and energy metabolism.

Collaboratories

LSL S461-463, S571-573
Andrew Vinard | avinard@umass.edu | (413) 577-4582
Research laboratory spaces available for industry partners, including start-up companies emerging from faculty research projects, to partnerships with more established companies that seek space on campus to develop medical devices and healthcare/life science related product candidates, all while retaining their intellectual property (IP).

Device Characterization

LSL S465
David Follette | follette@umass.edu | (413) 577-4540
A full suite of mechanical testing capabilities, including tension, compression and torsion fatigue testing, surface roughness measurement, 3D scanning, and surface hardness measurement.

Device Fabrication (Cleanroom)

Marcus 15
Neel Mehta | nmehta@umass.edu | (413) 545-1710
Designed to have CMOS processing technologies to serve as a key enabler towards personalized healthcare and preemptive medicine. Specifically, we aim to develop smart and miniature devices, circuits and systems with biomedical applications such as biosensing, DNA sequencing and smart implanting.

Electron Microscope

Conte B163-B172
Alex Ribbe | aeribbe@polysci.umass.edu | (413) 658-7415
(TEM) and Scanning (SEM) Electron Microscopes as well as related sample preparation equipment.

Flow Cytometry

GB 068
Amy Burnside | aburnside@umass.edu | (413) 545-1385
Provides the latest technologies in flow cytometry to the area research community. Fluorescence based flow cytometric analysis and microscopy-based high throughput imaging instrumentation is available. Analysis equipment is accessible to trained users 24/7 and fluorescence assisted cells sorting is offered by appointment. Preparation of fluorescently-expressing samples for design, scientific consultation and sample processing are also offered.

Genomics Resource Laboratory

Morrill 1, N230
Ravi Rangan | rangan@umass.edu | (413) 577-4501
Provides Next-Generation DNA Sequencing services, NGS library preparation, DNA and RNA Quality assessment, DNA and RNA isolation, qPCR, Single Cell Sequencing on C1 Single Cell Auto Prep system.

High Frequency Sensor Development

LSL S460
Robert Jackson | rjackson@ecs.umass.edu | (413) 545-1386
Provides world class measurement capability for frequencies into the Terahertz range. It will be used for high frequency spectral analysis of materials and for testing high-speed communications technologies.

Human Magnetic Resonance Center

LSL S523
hmrcenter@umass.edu
Brain and whole body structural and functional imaging and spectroscopy for academic and industry-based research.

Light Microscopy

LSL S576A
James Chambers | jchambe@umass.edu | (413) 577-4580
Nikon instruments that enable a broad range of light microscopy methods and applications.

Mass Spectrometry

LSL S540
Stephen Eyles | eyesl@biochem.umass.edu | (413) 577-1528
Analytical mass spectrometry equipment, providing analytical services and expertise in mass spectrometry.

mHealthLab

LSL S354
Michael Busa | mbusa@umass.edu | (413) 577-0574
Erik Riserger | erisgerger@umass.edu | (413) 545-2744
Develops algorithms and processes for large scale wearable sensor networks to support the development of novel hardware.

Nanofabrication Cleanroom

Conte B112
Neel Mehta | nmehta@umass.edu | (413) 545-2772
Device design, fabrication process formulation, photomask layout design, and prototyping utilizing traditional and novel approaches to microfabrication and nanofabrication of electronic devices, sensors, microfluidic devices, and nanomaterials test structures.

Nuclear Magnetic Resonance (NMR)

LGRT 075, 082 & Conte B342, B622
Weiguang Hu | weiguang@polysci.umass.edu | (413) 577-1428
Jasna Fejzo | jfejzo@umass.edu | (413) 545-0081
The facility provides high field NMR instruments and expertise to elucidate the molecular structure, conformation, dynamics and interactions.

Nutritional Formulation

Chemwright 1271
umasscores@umass.edu
Isolates bioactive by supercritical CO2, concentrate bioactives by reverse osmosis, thermally treat by ultrahigh pasteurization and agitating retort, produce emulsion systems by homogenization and encapsulate by freeze or spray drying.

Terahertz range. It will be used for high frequency spectral analysis of materials and for testing high-speed communications technologies.