

# Lab Facilities

AT THE UNIVERSITY OF ALASKA



## The University of Alaska hosts many facilities with highly technical capacities.

Our laboratories and field facilities are available to scientists from across the nation and around the world. Our goal is to spend money wisely. By reducing duplication across the UA system, we ensure an optimal return on investment in each facility.

We encourage collaborative use of these facilities to enable efficient and effective analyses of samples.

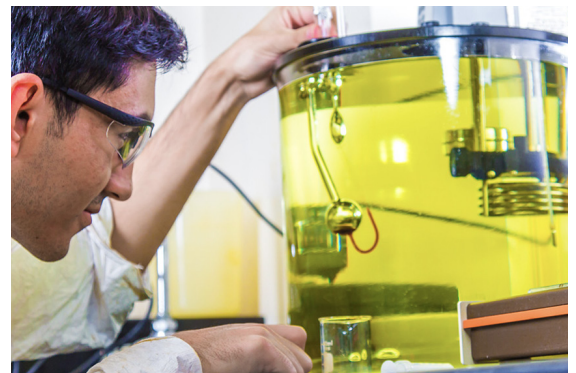
## Why consider UA Labs?

Increased use of these facilities helps ensure operation and analysis under accepted standards with highly tuned and calibrated instruments. Use of these facilities also brings the professionalism offered by experienced personnel.

Services are provided by trained professionals whose primary concerns are the safety and security of scientists, staff, and students. Rigorous protocols govern processing of samples.

We invite you to explore the broad and diverse capabilities of UA Labs and to consider them for your next research effort.

*Larry Hinzman, Vice Chancellor for Research, UAF*



[research.uaf.edu/facilities/labs](https://research.uaf.edu/facilities/labs)

## LABS AT THE UNIVERSITY OF ALASKA ANCHORAGE

<b>Applied Science, Engineering, and Technology Lab</b>	Analyzes low level persistent organic pollutants, drugs, natural organic compounds, trace metals, total organic carbon, anions.
<b>Biomechanics, Dynamics, and Controls Lab</b>	Interdisciplinary research in the dynamic motion and control of mechanical and living systems, and biosensor design.
<b>BP Asset Integrity and Corrosion Lab</b>	Advances understanding of corrosion processes through fundamental and applied research projects.
<b>Construction Materials Lab</b>	Equipment and facilities for forming, mixing, curing, and testing concrete construction materials.
<b>Electrical Power and Utility Lab</b>	Advances understanding of smart grid, microgrid, and power and energy system operation through Lab experiments and fundamental and applied research projects.
<b>Engineering Chemistry Lab</b>	Venue for wet chemistry instruction and research.
<b>ENRI Stable Isotope Lab</b>	Quantifies stable isotope concentration to aid understanding of biological, hydrologic, geological, and atmospheric processes.
<b>Environmental Engineering Lab</b>	Analyzes drinking and waste water as well as environmental samples.
<b>Geotechnical Engineering and Soil Mechanics Lab</b>	Teaching and research lab for soil mechanics and geotechnical engineering.
<b>Materials Testing Lab</b>	Contains equipment to mechanically test materials, structures and machines.
<b>Microscopy Lab</b>	Supports Material Science, Asset Integrity and Corrosion research, as well as other disciplines for analysis of micro structures and microscopic material characterization.
<b>Paul Crews Materials Science Lab</b>	Contains equipment for preparation and analysis of material microstructures. Supports the Microscopy, Materials Testing, and Asset Integrity and Corrosion Labs.
<b>Pavements Lab</b>	Provides state-of-the-art equipment for pavement materials testing and QA/QC.



<b>Software Engineering &amp; Design Studio</b>	Facilitates group work, with laptops and shared screens for face-to-face interaction.
<b>Structures Testing Lab</b>	Tests strength of large Lab specimens and full-scale elements such as beams, columns, and walls.
<b>Systems and Networks Lab</b>	Supports Lab components of computer science courses as well as research projects requiring lab/server space, including projects funded by state and federal agencies.
<b>Ted and Gloria Trueblood Cold Regions Engineering Lab</b>	Maintains samples at temperatures between 0 C and -30 C, with research level ( $\pm 0.1$ C) precision.
<b>Vivarium</b>	Houses small animals (<5kg) for purposes of supporting research.

## LABS AT THE UNIVERSITY OF ALASKA FAIRBANKS

<b>Advanced Instrumentation Lab</b>	Elemental and surface analysis.
<b>Alaska Quaternary Center Lab</b>	Prepares sediment cores for analyses.
<b>Alaska Stable Isotope Facility</b>	Handling and preparation of non-human and human samples (blood, urine, fat samples and muscle) for stable isotope analyses.
<b>Alaska Stable Isotope Facility - MC-ICP-MS (Multi-collector-inductively coupled plasma mass spectrometer)</b>	Elemental and isotopic analyses of a wide range of heavier elements, including strontium.
<b>Ancient DNA Preparation Room</b>	PCR-free lab that contains biosafety cabinets for preparation of ancient DNA specimens and ancient DNA extraction.
<b>Arctic Coastal Geoscience Lab</b>	Sediment core processing and analysis, geospatial data processing and visualization, and remotely sensed change detection.
<b>Autonomous Remote Technology Lab</b>	Instruments for collecting physical oceanographic data.
<b>Cold Lab Facilities and Field Equipment</b>	Cold chambers, ice-processing equipment, digital-imaging, x-ray microtomograph for analysis of ice samples.
<b>DNA Core Lab</b>	Nucleic acid sample analysis; maintenance, support, and training for molecular biology and analytical chemistry instrumentation.
<b>International Arctic Research Center Laboratories</b>	Analysis of dissolved and particulate trace metals in oceans, rivers, and sediments.
<b>Life Sciences Informatics (LSI)</b>	Computational services, including maintenance and optimization of software applications needed for analysis, resources for sharing data, and relational databases.
<b>Mine Design Lab</b>	Develops 3D mine models including developing an orebody, block models, and mining structures.
<b>Mine Ventilation Lab</b>	Measures atmospheric environmental conditions (gas, dust, heat and humidity velocity and pressure of air) in mines.
<b>Mineral Processing Lab</b>	Conducts mineral processing (crushing, grinding, gravity separation, flotation, acid leaching, zeta potential etc).
<b>Molecular Imaging Facility</b>	Supports research and teaching using nuclear magnetic resonance spectrometers, 1.5 Tesla Magnetic Resonance Imaging instrument, and Dual-Energy X-Ray Absorptometry.
<b>Power Systems Integration Lab</b>	Tests hardware and software components within an integrated grid system on the same scale as a village power system, and has the ability to be modified for individual test scenarios.
<b>Rock Mechanics Lab</b>	Lab for rock and soil testing.
<b>Space Systems Engineering Lab</b>	Provides tools for space systems design, integration, and test. Includes electrical, mechanical, orbital and software design and modeling software, as well as electrical & mechanical manufacturing and test equipment.
<b>Super Pave Lab</b>	Only lab in Alaska capable of using the Super Pave Grading system to test the grade of asphalt.
<b>Water and Environmental Research Center Analytical Lab</b>	Analytical chemistry Lab capable of measuring full suite of analytes relevant to environmental sciences and engineering.

## LABS AT THE UNIVERSITY OF ALASKA SOUTHEAST

<b>Forest Ecology lab</b>	Dendrology and soils preparation as well as space for geospatial computing.
<b>Natural Sciences Research Labs</b>	Environmental and marine research. Nine separate research laboratories that are assigned to individual investigators or groups of investigators with common research goals. Equipment and specialized procedural space is available to support biochemical and environmental ecosystem research projects.