



[Analytical Methods Laboratory](#) [Biological Process Development Facility](#)

Othmer Hall 304

Contact: Jay Harner

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The Analytical Methods Laboratory designs, develops, supports, and transfers analytical methods for testing biotechnology-derived pharmaceutical products. These methods may be used for in-process testing, process residuals testing, product characterization, final product testing, and product stability testing, depending on the capabilities of the method.

[Bioinformatics Core Research Facility \(BCRF\)](#)

[Center for Biotechnology](#)

Beadle Center E204

Contact: Jean-Jack Riethoven

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The mission of the Bioinformatics Core Research Facility (BCRF) is to ensure professional bioinformatics and computational biology collaboration and support for faculty, staff & students at UNL and other higher education institutions throughout Nebraska.

The BCRF provides high-performance, specialized hardware and sophisticated commercial and academic software. We maintain the latest copies of all major sequence and value-added databases. Faculty and students can use these components to perform one-time projects or to build up their own ongoing analysis pipeline. The BCRF provides scientific and technical staff, which can assist with or collaborate on individual projects. As part of the Center for Biotechnology at UNL we also have access to the advice and expertise of associated faculty and staff members.

Currently, all members of the UNL academic community have access to the services of the BCRF

at cost-recovery rates. The BCRF is supported in part by the Nebraska Informatics Center for the Life Sciences (NICLS). Major funding for the facility comes from the National Science Foundation EPSCoR and the Nebraska Research Initiative. Examples of services include but are not limited to:

Next-gen sequence analysis (including SNP detection, genome assembly, comparative genomics, digital gene expression) Microarray analysis Custom analysis of bioinformatics/computational biology data (including programming, computer-based annotation)

[Biomechanics, Biomaterials and Biomedicine \(BM³\) Instrumentation Facility](#)

Walter Scott 126B

Contact: Alexander Gopenko

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Our mission is to support interdisciplinary research in the areas embracing biomechanics, biomaterials and biomedicine. The BM³ is intended to support the advancement of all College of Engineering faculty having interests in bio-engineering research, and will not be constrained to any particular department or group. We are making every effort to make these techniques available and affordable to anyone interested. The long term goal of the BM³ is to serve as a focal point for collaboration between engineering faculty and researchers in applied fields, such as human and veterinary medicine, dentistry, and pharmaceuticals.



[Biosafety Level 3 Laboratory](#)

[Nebraska Center for Virology](#)

Veterinary and Basic Science 203

Contact: Gustavo Delhon

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The BSL3 Laboratory provides the necessary environment and equipment for working with infectious agents requiring a biosafety 3 level of containment.

[Center for Advanced Land Management and Information Technologies \(CALMIT\)](#)

Hardin Hall

Contact: Bryan Leavitt

(402) 472-8179 | bleavitt2@unl.edu

The CALMIT research center focuses on applications of remote sensing and geographic information systems.

[Center for Applied Genomics and Ecology \(CAGE\)](#)

Food Science 323

Contact: Alison Mansfield

(402) 472-5575 | amansfield2@unl.edu

The core specializes in high-throughput sequencing of 16s amplicons on titanium platform, complemented by high-throughput DNA extraction capacity and web-accessible client database.

[Cryogenics](#)

[Nebraska Center for Materials and Nanoscience \(NCMN\)](#)

Behlen Laboratory 168

Contact: Shah Valloppilly

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The Cryogenics facility provides the means for obtaining liquid nitrogen and liquid helium for low temperature research, cold traps, etc.

[Electron Microscopy](#)

[Nebraska Center for Materials and Nanoscience \(NCMN\)](#)

Jorgensen Hall 033

Contact: Xingzhong "Jim" Li

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The function of the Electron Microscopy facility is to provide access to electron microscopes, sample preparation equipment and data collection and data instrumentation. The scope of the facility is materials characterization of the topography, morphology, elemental composition, crystalline structure, crystal defects, and atomic arrangements of materials, largely on a scale from 10 micrometers down to the near-atomic level.

[Fermentation Development Laboratory](#)

[Biological Process Development Facility](#)

Othmer Hall 304

Contact: Jay Harner

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The Fermentation Development Laboratory (FDL) is focused on modeling, optimization, control, and metabolic flux analysis of *Pichia pastoris* at high cell density during the production of recombinant proteins. The FDL is well equipped with 18 computer-controlled fermentors: 10 5L fermentors and 8 highly automated Bioengineering 22 L NLF fermentors. All 18 fermentors are integrated into a



Prima VG mass spectrometer for off-gas analysis. The BPDF uses both dedicated methanol off-gas analyzers and the mass spectrometer to monitor methanol concentration during fermentation.

[Flow Cytometry](#)

[Nebraska Center for Virology](#)

Morrison Center 313

Contact: Danielle Shea

(402) 472-4559 | dshea2@unl.edu

The NCV Flow Cytometry Core Facility provides flow cytometry services to members of the Nebraska Center for Virology and investigators on and off the UNL campus on a fee for service basis. The core provides comprehensive data collection, data interpretation and education in flow cytometry.

[Food Allergy Research and Resource Program \(FARRP\)](#)

Food Industry Complex 143

Contact: Lynn Niemann and Debra Lambrecht

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FARRP takes a comprehensive approach working with and collaborating with research institutions, governmental authorities, consumer groups, and scientific societies around the globe to share our experience and knowledge to improve the safety of food products for consumers with food allergies and sensitivities.

[Food Processing Center](#)

Food Industry Complex 231

Contact: Jayne Stratton

(402) 472-2829 | jstratton1@unl.edu

The Food Processing Center offers comprehensive laboratory services for the analysis and evaluation of food products and ingredients. Our diverse facilities include microbiological, analytical, product development and sensory laboratories.

[Genomics Core Research Facility](#)

[Center for Biotechnology](#)

Beadle Center E124

Contact: Yuannan Xia

(402) 472-0998 | yxia2@unl.edu

The Genomics Core Facility provides Illumina high-throughput sequencing of genomic DNA, message RNA, small RNA, CHIP DNA, and Affymetrix DNA microarray services.

[Holland Computing Center](#)

118K Schorr Center

Contact: David Swanson

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The Holland Computing Center (HCC) provides high performance computing, high end storage, advanced networking and other cyberinfrastructure resources. HCC staff are available to assist researchers in determining optimal solutions for their particular research needs.

[Macromolecular Crystallography Laboratory](#)

[Redox Biology Center](#)

Contact: Joe Barycki and Mark Wilson

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mwilson13@unl.edu

The Macromolecular Crystallography Laboratory houses equipment for crystallization and diffraction experiments. We assist users in the design and implementation of crystallographic studies centered on biological macromolecules. Given the inherent uncertainties associated with such projects, access to the Macromolecular Crystallography Laboratory is arranged through a collaborative agreement. Nominal fees to offset operating costs will be assessed for experiments performed.



[Materials Preparation](#)

[Nebraska Center for Materials and](#)

[Nanoscience](#)

Behlen 166, 167, and Brace Laboratory 114S

Contact: Shah Valloppilly

(402) 472-9371 | svalloppilly2@unl.edu

The NCMN Materials Preparation facility can fabricate a variety of thin films, especially nanostructured films including overlayers, multilayers, granular solids and clusters, using two sputtering systems.

[Mechanical and Materials Characterization](#)

[Nebraska Center for Materials and](#)

[Nanoscience](#)

Walter Scott Engineering Center 258

Contact: Jay Jayaraman

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This facility contains a large variety of equipment to characterize the mechanical and physical properties of a wide range of materials. The facility focuses on using the many materials characterization aspects to perform failure analyses on components. Samples can be analyzed to determine the failure mode, and solutions to prevent further problems. Samples can be also prepared for the Electron Microscopy or X-ray Diffraction Facilities, if necessary.

[Morrison Microscopy Core Research Facility](#)

[Center for Biotechnology](#)

Beadle Center E119.5

biotech.unl.edu/microscopy

Contact: You "Joe" Zhou

(402) 472-5942 | yzhou2@unl.edu

The Microscopy Core Research Facility has the state of the art imaging systems and provides strong technical support for multi-disciplinary research.

[Nanofabrication](#)

[Nebraska Center for Materials and Nanoscience](#)

Behlen Laboratory 169

Contact: Jiong Hua

(402) 472-3773 | jhua2@unl.edu

The goal of the Nanofabrication Facility at NCMN is to provide researchers with effective and efficient access to state-of-the-art nanofabrication equipment, expertise and training. Facility capabilities include high resolution patterning by electron-beam lithography (EBL) and photolithography, focused ion beams (FIB) milling, reactive ion etching (RIE) process. We welcome researchers from any discipline who wish to explore uses of micro- and nano- fabrication technologies in their work.

[Nebraska Bioenergy Facility](#)

Beadle Center E236

Contact: Karl Dana

(402) 472-8969 | kldana@huskers.unl.edu

Providing research and development support related to bioenergy technology. The services of the NBF include molecular biology assays for DNA, RNA and Protein; Industrial enzyme analysis; microbial genetic engineering; Bioreactor studies for modeling scale-up; and Bioenergy metabolomics.



[Nebraska Center for Mass Spectrometry](#)

[Center for Biotechnology](#)

Hamilton Hall 718

Contact: Ron Cerny

(402) 472-6020 | rcerny1@unl.edu

The Nebraska Center for Mass Spectrometry provides a range of ionization techniques for sample analysis. These include electron ionization (EI), chemical ionization (CI), fast atom bombardment (FAB), electrospray ionization (ESI) and matrix-assisted laser desorption (MALDI). MS sequencing is also available.

[Plant Transformation Core Research Facility](#)

[Center for Biotechnology](#)

Beadle Center N308

Contact: Tom Clemente

(402) 472-1428 | tclemente1@unl.edu

The Plant Transformation Core Research Facility is an interdisciplinary research and training program in the basic plant sciences.

[Protein Core Facility](#)

[Center for Biotechnology](#)

Beadle Center E240

Contact: Tom Elthon

(402) 472-6245 | telthon1@unl.edu

The Protein Core Facility provides resources to researchers that want to purify, separate or identify proteins.

[Protein Purification Development Laboratory](#)

[Biological Process Development Facility](#)

Othmer Hall 304

Contact: Scott Johnson

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The PDL has successfully developed and transitioned numerous purification processes to the pilot-scale for both GMP and non-GMP production. The PDL has experience with chromatography resin, chemistry, expanded bed absorption chromatography, ultrafiltration, all forms of electrophoresis, and ELISA.

[Research Instrumentation NMR Facility](#)

Hamilton Hall 834B

Contact: Martha Morton

(402) 472-6255 | mmorton4@unl.edu

The Research Instrumentation Facility (RIF) in the department of Chemistry is equipped with a wide variety of instrumentation for chemical analysis including NMR, optical spectroscopy, thermal analysis and GC-MS.

[Scanning Probe Microscopy](#)

[Nebraska Center for Materials and Nanoscience](#)

013 Jorgensen Hall

Contact: Lanping Yue

(402) 472-2742 | lyue2@unl.edu

The Scanning Probe Microscopy Facility employs a variety of very precise, non-destructive scanning probe microscopy techniques: Atomic Force Microscopy (AFM), Magnetic Force Microscopy (MFM), Electric Force Microscopy (EFM), Lateral Force Microscopy (LFM), Scanning Tunneling Microscopy (STM), and Piezoresponse Force Microscopy (PFM) for imaging and measuring surface properties of a wide range of materials from the



micron level down to the nanometer scale. SPM can provide a wealth of information from topography, surface morphology, to magnetic phase or friction analysis, including line width, grain size, pitch and depth, roughness measurements, sectioning of surfaces, particle analysis, surface defects, and pattern recognition, etc.

[Spectroscopy and Biophysics Core](#) [Redox Biology Center](#)

Beadle Center E155, N113B

Contact: Javier Seravalli

(402) 472-3124 | jseravalli1@unl.edu

The role of the Spectroscopy and Biophysics Core is to provide instrumentation, training and support for any type of experimental work involving biophysical and spectroscopic measurements. The services that our core provides can be extended to partially purified proteins, whole cell assays and analysis of tissues.

[Survey, Statistics and Psychometrics \(SSP\)](#)

107 Benton Hall

Contact: Mindy Anderson-Knott

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The SSP provides consultation, referrals, and workshops on survey research, statistical, and psychometric applications to support research initiatives. The SSP is designed to work across disciplinary and institutional boundaries to help identify, support, and promote interdisciplinary research collaborations among faculty at University of Nebraska institution.

[Water Sciences Laboratory](#)

Water Sciences Laboratory 202

Contact: Daniel Snow

(402) 472-7539 | dsnow1@unl.edu

The mission of the Water Sciences Laboratory is to support environmental and water related research by providing technical services and expertise in analytical and isotopic methods.

[X-Ray Structural Characterization](#) [Nebraska Center for Materials and Nanoscience](#)

Behlen Laboratory 168

Contact: Shah Valloppilly

(402) 472-3693 | svalloppilly2@unl.edu

The NCMN X-Ray Characterization Facility is dedicated to materials identification and characterization through non-destructive X-ray diffraction (XRD).