INBRE

The IDeA Network of Biomedical Research Excellence

A capacity-building research grant funded through the National Institute of General Medical Sciences division of the National Institutes of Health.

STUDENTS

- Regional access to degrees in bioinformatics
  - BS, MS, and PhD degrees
- Student academic research exchanges
- Internships in unique National Laboratories
  - Idaho National Laboratory
  - Rocky Mountain Laboratories
  - Los Alamos National Laboratory
  - Sandia National Laboratories

ALASKA INBRE
IDeA Network of Biomedical Research Excellence
alaskainbre.org

HAWAII INBRE
IDeA Networks of Biomedical Research Excellence
inbre.jabsom.hawaii.edu

IdahoINBRE
IDeA Network of Biomedical Research Excellence
inbre.uidaho.edu

MONTANA INBRE
inbre.montana.edu

NEVADA INBRE
unr.edu/nevada-inbre

New Mexico INBRE
IDeA Networks of Biomedical Research Excellence
nminbre.org

Wyoming INBRE
IDeA Networks for Biomedical Research Excellence
uwyo.edu/wyominginbre

March 2025

Regional Alliance of INBRE Networks
RAIN
ALASKA • HAWAII • IDAHO • MONTANA • NEVADA • NEW MEXICO • WYOMING

www.rainresearch.org

RAIN
AK HI ID MT
NM NV WY

- Maximize Core Facility use & technical help
- Expand student research & educational programs
- Enhance faculty careers & mentoring
- Promote multidisciplinary research
- Increase participation
- Share & leverage IDeA-built resources

FACULTY

- Unique mentoring and training resources across the seven states to improve the health of the region and the nation

- Access to

    - scientific mentoring expertise

    - research core facilities

    - technical help

- Collaboration

    - Community engagement research

    - Collaboration studios

    - Professional development

    - Research conferences

    - Seminars

    - Regional COBREs and CTRs

BIOINFORMATICS

Degree Programs

Bioinformatics is a field that includes the tools and approaches to analyze large biomedical datasets, including genomes, proteomes, microbiomes, images, health records, and disease physiopathology. This field is consistently mentioned among career opportunities with the highest demand, job satisfaction, and salary.

- **The University of Idaho** offers the INBRE-initiated MS/PhD in Bioinformatics and Computational Biology.

RESEARCH CORES

AK
Alaska Genomics Sequencing and Bioinformatics & Stable Isotope Facility

Genomics, proteomics, analytical chemistry, includes library preparation and sequencing on Illumina's MiSeq platform; training workshops and seminars.

Isotopic analyses of individual compounds (e.g. fatty acids, amino acids), muscle, feathers, otoliths, blood, bone collagen, whale baleen, algae & zooplankton, soil & sediment, whiskers & claws, dissolved organic carbon and nitrogen, water, and vegetation.

HI
Hawaii INBRE Sequencing, Data Science Core and Imaging Facilities

Genomics and Bioinformatics Shared Resource and Training (GBSR_UH Cancer Center)
- High-throughput NGS sequencing; DNA methylation analysis; RNA expression profiling;
- NanoString; Clariom GeneChip; full -omics data analysis; machine learning

Imaging Shared Resource and Training (John A. Burn School of Medicine; UH Cancer Center)
- Near super-resolution; TIRF - live cell 3D; laser capture; flow cytometry; in vivo IVIS

ID
Idaho INBRE Data Science Core Facilities at three locations

Institute for Interdisciplinary Data Science (UI, Moscow): Research computing and data services, genomics and bioinformatics resources, optical imaging, etc.

Biomolecular Research Center (BSU, Boise): Biomolecular characterization, mass spectrometry, protein structure, imaging, confocal microscopy, histology, etc.

Molecular Research Core Facility (ISU, Pocatello): Sequencing, imaging, etc.

MT
Montana INBRE Data Science and Community Engagement Cores

Data Science: Genomics, Bioinformatics, Social Data Collection and Analysis Services

Metabolomics: LCMS, GCMS, QQQ, ICP-MS, project planning, data collection & analysis

Community Engagement: Fostering tribal and rural community partnerships aimed at mitigating health disparities through engagement, dialogue, and collective problem solving

NV
Nevada INBRE Data Science Core for Biomedical Research

We help you find resources for your research endeavors and support student research trainings.

The Nevada INBRE supported cores are accessible to RAIN members at the internal rate including the Mick Hitchcock PhD NV Proteomics Core, NV Genomics Core, NV Bioinformatics Center, UNLV Genomics Center, Genome Acquisition and Analysis Core, and National Supercomputing Institute.

NM
New Mexico INBRE Data Science Core

Differential gene expression, simple/complex genome assembly, and variant discovery

Pangenomics, epigenetics/ChiP-seq, small RNA analysis, functional annotation

Data mining, machine learning, systems biology, and web-app/software development

Year-round bioinformatics/STEM internships and workshops for students and researchers

WY
Wyoming INBRE Data Science Core

Individual and group trainings in scripting, data reproducibility and analysis Curriculum development

Bioinformatics expertise and support including: microbial community analysis, population genomics from whole genome and reduced representation data, transcriptomics/differential expression, genome assembly and annotation, phylogenomic reconstruction, and gene family evolution