



# Bioscience/Biomedical Research at Idaho State University

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Working with regional, national,  
and international research partners  
in the academic and private  
sectors



# ISU Biomedical Research Institute

- Focus on multidisciplinary, integrated research approaches to improved health care delivery – lab bench to the patient
- 22 Researchers from 6 academic divisions: Pharmaceutical Sciences, Biological Sciences, Psychology, Mathematics, Engineering, and Institute of Rural Health.



## Research Facilities in IBRI

- Molecular Research Core Facility
- Bioinformatics Laboratory
- Bioanalysis Laboratory
- Biological Imaging Laboratory
- Flow Cytometry Laboratory



# IBRI Research Sections

- Behavioral and Neuroscience
- Cell Signaling and Communication
- Functional Genomics and Biotechnology
- Health Sciences and Engineering



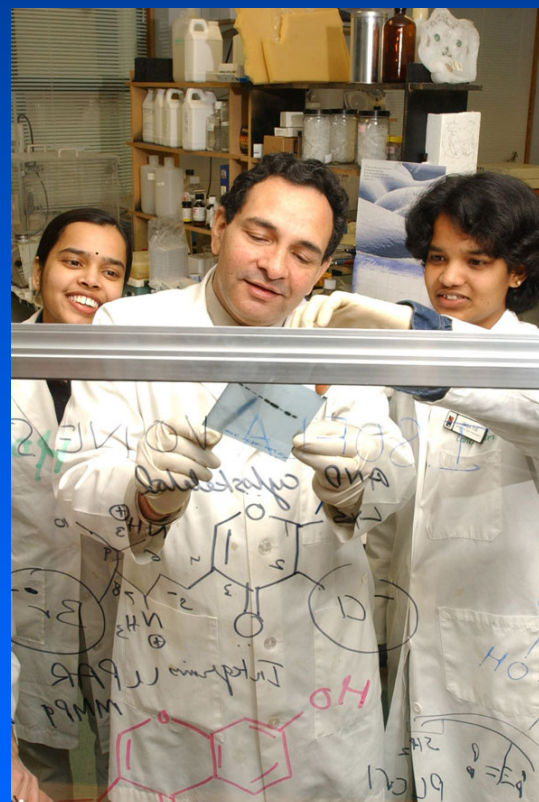
# Behavioral and Neuroscience

- Mechanisms of brain damage in Alzheimer's disease and stroke
- Drug Addiction and alcoholism
- Molecular mechanisms in genetic movement disorders
- Behavioral disorders from food deprivation



# Cell Signaling and Communication

- Cancer biology and pharmacology
- Cardiovascular disease
- Diabetes





# Functional Genomics and Biotechnology

## Molecular Research Core Facility







- Infectious Disease
- Molecular basis of disease
- Protein engineering
- Extremophile novel enzymes
- Bioinformatics





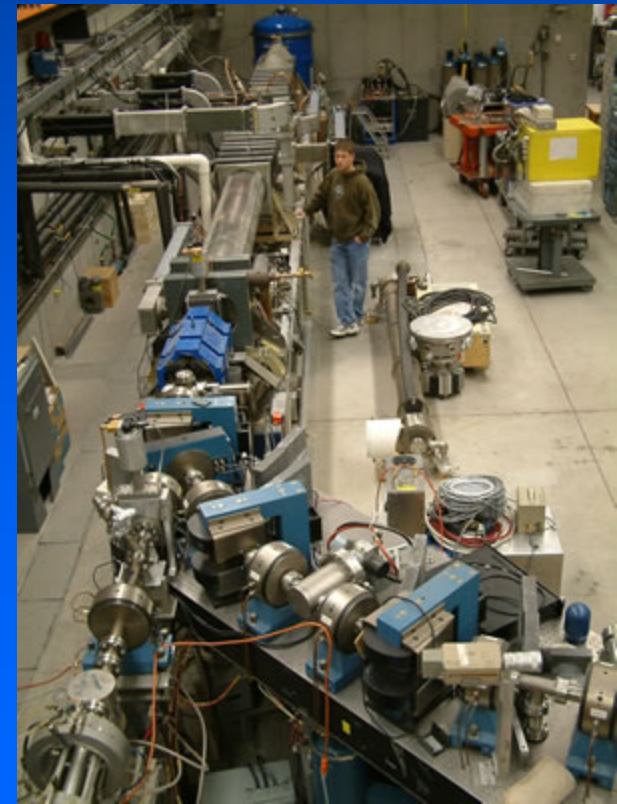
# Health Sciences and Engineering

- Biomedical signals and image processing.
- Physiological systems modeling.
- Medical Device development.
- Working with partners such as the E-Med Center of Excellence at the University of Western Australia, University of Seville, Spain, Princeton Autism Technology, NJ, and AMIS, Pocatello, ID.

# Idaho Accelerator Center

Homeland Security: studying low-energy accelerator-produced radiation to neutralize bacterial agents (Biological Sciences, Physics, IAC)

Medical Imaging: enhanced medical imaging techniques using special accelerator produced x-rays. (IBRI, University of Western Australia, University of Singapore, Biomedical Technologies, Denver CO, Portneuf Medical Center, AMIS)



# Collaborations with Industry

## Biological Sciences and the Bioanalysis

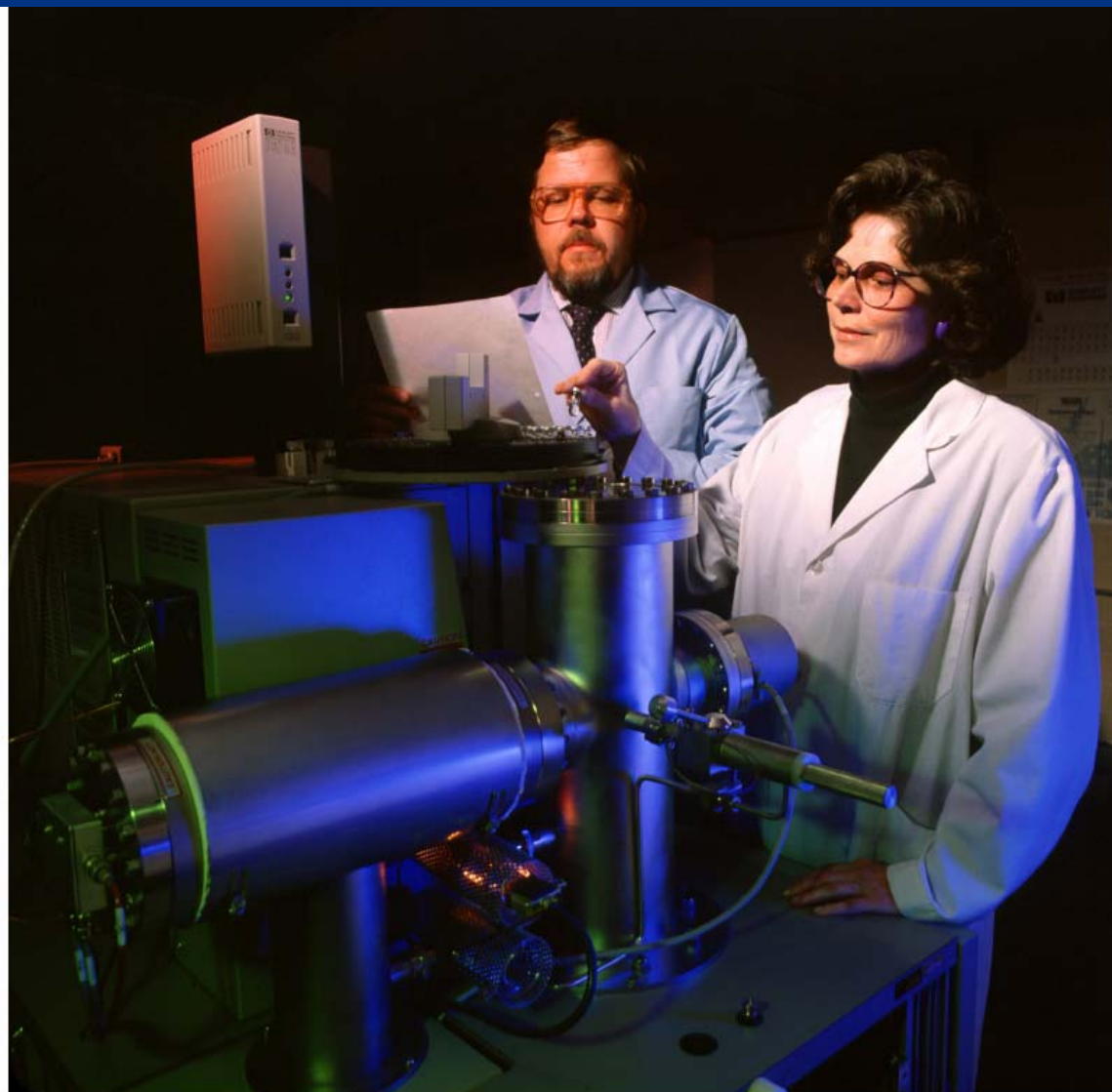
Laboratory are working with Idaho Trout Company to develop new omega-fatty acid rich diets from dairy cow manure to enhance nutrition and heart health.

Additionally may provide environmental remediation and a new market for S. Idaho dairy farms.



# •Bioanalysis Laboratory

Providing analytical support for food composition analysis.





# Drug Discovery

- IBRI is focused on understanding disease processes and drug discovery
- Development of novel nanoparticle biomaterials for drug delivery
- New anti-cancer agents from traditional Chinese and Central American native medicines.
- Novel anti-malarial drug.