

NIH IDeA in New Hampshire



Since 2001, the National Institutes of Health has awarded more than \$147 million to support Centers of Biomedical Research Excellence and an IDeA Network of Biomedical Research Excellence in New Hampshire. The Geisel School of Medicine at Dartmouth College has hosted five COBREs and the INBRE program, and the University of New Hampshire has one COBRE. The COBRE and INBRE programs build research capacity by training junior faculty and students in biomedical science, an area of growth in the state's economy.

6 COBREs (4 active) 1 INBRE TOTAL IDEA FUNDS AWARDED: \$147.4 MILLION

CENTER FOR MOLECULAR EPIDEMIOLOGY

Website: geiselmed.dartmouth.edu/molecepi

Funding: \$23.2 million from 2013-2023

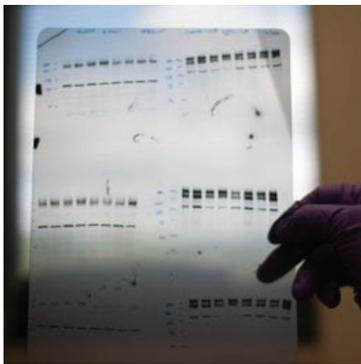
The **Center for Molecular Epidemiology** is transforming research capacity at the Geisel School of Medicine by stimulating high impact research and translating cutting-edge approaches to enhance human health discoveries. Promising early career investigators are carrying out innovative molecular epidemiology research surrounding the central themes of:

- Applying state-of-the-art scientific discoveries and technologies to address major health concerns;
- Identifying early indicators of disease development; and
- Exploring pathways of the causes and progress of disease.

This COBRE is making epidemiological resources available to the scientific community and will ultimately serve as a regional and national resource. Its Biorepository Core and its Biospecimen Resource Facility have a wealth of data on individual risk factors and disease and robotic capabilities, advancing the pace at which innovative research is conducted.

*The Center for Molecular Epidemiology project and pilot leaders already have been awarded more than **\$8 million** in new extramural grants as Principal Investigator in this first year of the new Phase II Center, including **4 new NIH R01 awards**; and over **\$12 million** as Co-Investigator.*

DARTMOUTH LUNG BIOLOGY CENTER



Website: dartmouth.edu/~lbcobre

Funding: \$27.8 million from 2003-2018 (NCE through 2019)

Lung disease claims 360,000 Americans annually and 25 million Americans live with chronic lung diseases such as asthma, emphysema, cancer and cystic fibrosis. The **Dartmouth Lung Biology Center** aims to gain a better understanding of the causes of lung disease and to study new therapeutics for treatment. The Center is grounded in basic research and embraces a translational approach to promote bidirectional bench-to-bedside research. This COBRE seeks to enhance research efforts by:

- Integrating the COBRE-supported cores with other shared services;
- Fostering synergistic collaboration through COBRE research projects and associated cores; and
- Mentoring and supporting the career development of all faculty in the program.

Core services include a host-pathogen interaction core, live cell imaging core, and a cystic fibrosis translational research core.

INSTITUTE FOR BIOMOLECULAR TARGETING

Website: biomt.dartmouth.edu

Funding: \$12.6 million from 2016-2021

The COBRE **Institute for Biomolecular Targeting** (bioMT) brings researchers at Dartmouth and across the region together at the key interface between discovery and translation. bioMT accelerates the research productivity and scientific impact of junior faculty leading interdisciplinary research projects across the spectrum of target discovery, validation, and inhibition by:

- Enhancing the research competitiveness of junior faculty biomolecular targeting projects;
- Providing mentoring by experienced and committed senior faculty;
- Providing a robust resource infrastructure and training in best research practices; and
- Creating a vibrant scientific community, through seminars and symposia, pilot award funding, and start-up support for new faculty.

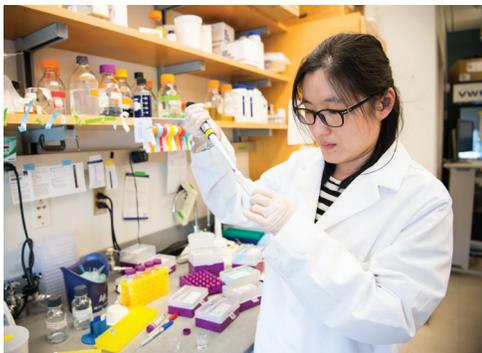


Institute for Biomolecular Targeting

*Nine research project grants have been awarded to seven bioMT supported faculty, including **2 NIH R01 awards**, **3 NIH R35 awards**, and **4 NSF awards**.*

Core facilities include: a molecular tools core and molecular interactions and imaging core which utilize state-of-the-art equipment and techniques for production and characterization of high quality recombinant proteins and microscopy for biochemical and cellular studies.

CENTER OF INTEGRATED BIOMEDICAL AND BIOENGINEERING RESEARCH



Website: unh.edu/research/cibbr

Funding: \$9.5 million from 2017-2022

The **Center of Integrated Biomedical and Bioengineering Research (CIBBR)** is advancing biomedical and bioengineering research at the University of New Hampshire by increasing the capacity of researchers to apply multidisciplinary approaches to develop clinically relevant diagnostic tools and treatments. CIBBR is:

- Increasing the number of NIH-funded research project grants awarded to UNH faculty;
- Accelerating hiring and advancement of biomedical and bioengineering researchers;
- Acquiring state-of-the-art instrumentation in well-managed core facilities; and
- Encouraging clinical research, commercial opportunities and translational medicine.

Core facility enhancements include acquisition of a new confocal microscope and an X-ray photoelectron spectrometer and creation of a Molecular and Cellular Phenotyping Core. Currently, five Project Leads and three Pilot Project Investigators are conducting research in the areas of tissue engineering, cancer biology, biosensor development, and molecular neuroscience.

NH INBRE Impacts

Website: nhinbre.org

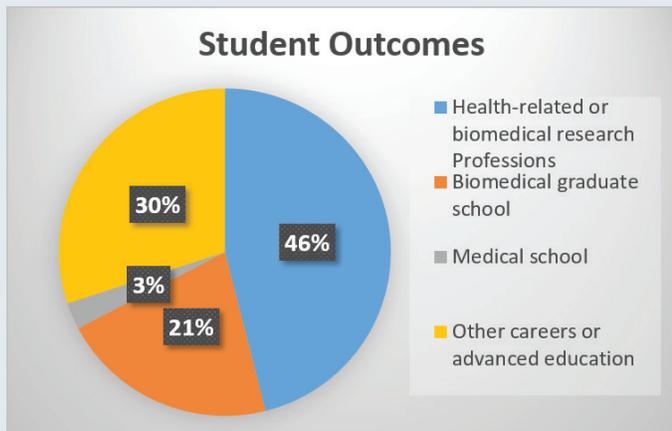
Funding: \$33.4 million from 2010-2020

The **New Hampshire IDeA Network of Biomedical Research Excellence (NH-INBRE)** is a biomedical research and research training network led by Dartmouth College and UNH to assist smaller schools in training faculty members to lead research programs that expose undergraduate students to advanced research techniques and build skills needed to succeed in New Hampshire's growing biotechnology sector.

NH-INBRE offers technical training programs, facility renovation, employment in research and bioinformatics training and instrumentation, and innovative nursing research initiatives, such as a research program for student nurses, mentorships, and a database to advance nursing research efforts across New England.

Development of a statewide, functioning network is an important achievement in promoting biomedical research, especially given no such network previously existed. Tangible evidence of this network exists in the infrastructure improvements at partner institutions, but cultural and environmental changes are also reported by faculty at partner institutions. Science buildings are now buzzing with students after hours, on weekends, and over the summer. Seminars, poster sessions, and science cafés are emerging in new places, and faculty and students are attending conferences and meetings previously not even on the radar.

WHERE ARE STUDENTS GOING AFTER GRADUATION?



70 Partner Faculty
Participating in biomedical research

756 Partner Students
Participated in biomedical research

129 Partner Publications

17 External Grants
received by NH-INBRE supported faculty

NH INBRE partner institutions include:

Colby-Sawyer College, Franklin Pierce University, Keene State College, New England College, Plymouth State University, Saint Anselm College, the Community College System of New Hampshire, and UNH-Manchester.