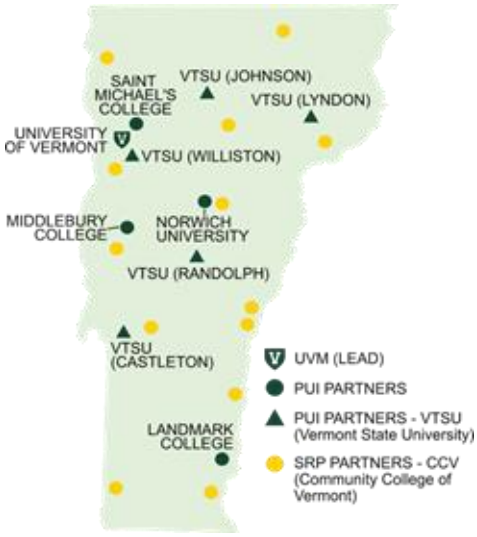
Vermont Biomedical Research Network

An IDeA Network of Biomedical Research Excellence (INBRE)

vbrn.org
120A Marsh Life Science
University of Vermont
Burlington, VT 05405
802-656-9119
vbrn@uvm.edu



Impact of VBRN FY25-26

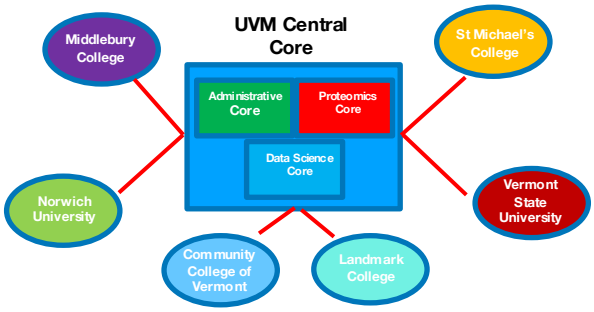
VBRN supports faculty development and student enrichment throughout our statewide network of four primarily undergraduate institutions and two outreach partner institutions (the 12-campus Community College of Vermont and Landmark College). Support to these affiliated institutions occurs via two principal mechanisms: (1) VBRN's internal grant program that provides pilot grant funds specifically to faculty at primarily undergraduate institutions, and (2) a summer undergraduate research program that funds internships to undergraduates from primarily undergraduate institutions and the community college.

The University of Vermont is VBRN's lead institution, which supports an Administrative core, and two research cores: 1) Proteomics and 2) Data Science. The research cores are both affiliated with the Larner College of Medicine's Center for Biomedical Shared Resources (CBSR), which also includes Genomics, the Microscopy Imaging core, and the Flow Cytometry Core. The VBRN Proteomics core supports (1) provision of high-quality and timely proteomics services to investigators throughout Vermont; (2) proteomics training and education for faculty and students; and (3) the development of New Proteomics methodologies for all clients. The VBRN Data Science core mission includes (1) support of informatics training and education for VBRN network investigators and their students; (2) provision of high-quality and comprehensive informatics services from experimental design planning to publication of research results; (3) provision of comprehensive data science services for VBRN facilities and network investigators, including contribution to manuscript preparation and grant applications; (4) Strengthening of network and regional collaborations; (5) Engagement in professional development and recent developments in data analysis; (6) Provision of access to information technology services, compute services, and hardware for VBRN core facilities and investigators; and (7) maintenance of the Core Marketplace database to facilitate biomedical resources sharing.

VBRN impacts STEM employment in Vermont by supporting faculty and staff members at UVM and the PUIs: 3 full-time faculty (two at UVM and one at Norwich University), 3 part-time faculty at UVM and 24 at PUIs, and 4 full-time staff at UVM. **Since 2005 VBRN has funded** 29 graduate students; **140 project awards** to PUI faculty members; **132 pilot awards** to PUI faculty members; **65 exploratory awards, small awards, and start-up award**s to PUI faculty members; **586 student research awards** to PUI undergraduate students (PUI & outreach partners); 15 student research awards to high school and regional INBRE undergraduates; 13 UVM faculty members use of facility awards. Our students' careers in medicine, biomedical research and STEM teaching have been influenced by opportunities made possible by VBRN. VBRN student alumni survey data from 2024 indicate 80% currently work in the biomedical field or a field related to biomedicine/ biotechnology, health/healthcare, science, or research. The principal investigator is Christopher Francklyn, PhD (Christopher.Francklyn@med.uvm.edu). To learn more, visit: https://vbrn.org.

Program Overview

The Vermont Biomedical Research Network (VBRN) is in its fifth phase of funding with a five-year **$19.09 million** award from the IDeA Networks of Biomedical Research Excellence (INBRE) program of the National Institute of General Medical Sciences at the National Institutes of Health. The mission of VBRN is to build human and physical infrastructure in Vermont for biomedical research. The lead institution, the University of Vermont (UVM), has contributed to the development of state-of-the-art facilities for Proteomics, Data Science, and Genomics to provide researchers across Vermont with the resources they need to carry out world-class research and compete for federal funding. To address workforce development, we build cultures of research by supporting faculty and student research at our Primarily Undergraduate Institutions (PUIs), which include Middlebury College, Norwich University, Saint Michael's College, Landmark College and Vermont State University's 5 campuses. We also support undergraduate student training in UVM laboratories and at local biotechnology companies.



Success Stories

Dr. William Landesman (Vermont State University): Dr. Landesman, an Associate Professor of Biology at Vermont State University in Johnson, VT and a recipient of two VBRN Pilot Awards, recently published a paper in the Journal of Medical Entomology that describes a new CRISPR/Cas12a assay for detecting specific OspC gene variants in *Borrelia burgdorferi*, the Lyme disease pathogen, in blacklegged ticks. The long-term goal of this VBRN funded research is to use the highly specific assay to 1) identify spatiotemporal patterns in the number and abundance of OspC variants in ticks and 2) to more rigorously test the hypothesis that certain OspC variants are responsible for severe cases of Lyme disease. Two VBRN funded undergraduate researchers in his lab, Maya Suarez and Samantha Bedore, are co-authors on the publication: PMC12699427.







Collaborative Brown Bullhead Transmissible Melanoma Project: VBRN's Data Science Core is leading a collaborative multi-omics research project with Dr. Mark Henderson of UVM's Rubenstein School of Natural Resources and scientists from the State of Vermont Fish and Wildlife and USGS that is focused on analyzing DNA and RNA sequence data from tissue sampled from brown bullhead fish with melanistic lesions in Lake Memphremagog (northeastern Vermont and southern Quebec). Results from this investigation, which suggest a transmissible tumor, were submitted in June 2025 for publication in the journal Nature.

Dr. Gina Mireault (Vermont State University): Dr. Mireault, a Professor of Psychology at Vermont State University in Johnson, VT and a recipient of VBRN Pilot and Project Award funding, recently published an essay in the New York Times, entitled 'The Evolutionary Brilliance of the Baby Giggle' (Feb 4, 2026). Dr. Mireault's research focuses on social and cognitive development in the first year of life, including when and how infants develop humor, how they differentiate humorous from magical events, and whether infant temperament can predict childhood curiosity and grit. Since her VBRN Awards, Dr. Mireault has received independent funding through the NIH SuRE Award (R16) mechanism.





Statewide INBRE Faculty Funding FY25-26

Investigator/Grant Type	Institution	FY	Vermont County	Amount
Zu Wei Zhai, INBRE Project Award	Middlebury	2025	Addison	$75,000
Jason Arndt, INBRE Pilot Award	Middlebury	2025	Addison	$35,000
Andrew Swafford, INBRE Pilot Award	Middlebury	2025	Addison	$35,000
Emma Guiberson, INBRE Pilot Award	Middlebury	2025	Addison	$25,000
Kira Rahn, INBRE Pilot Award	Middlebury	2025	Addison	$25,000
Emma Barrett, INBRE Project Award	Norwich	2025	Washington	$75,000
Sarah Gallant, INBRE Pilot Award	Norwich	2025	Washington	$35,000
Martha Curtin, INBRE Exploratory Award	Norwich	2025	Washington	$10,000
Irene Newsham, INBRE Exploratory Award (CURE)	Norwich	2025	Washington	$10,000
Lindsay Avery, INBRE Pilot Award	SMC	2025	Chittenden	$35,000
Mark Scialdone, INBRE Pilot Award	SMC	2025	Chittenden	$35,000
Brian Swisher, INBRE Exploratory Award (CURE)	SMC	2025	Chittenden	$10,000
Gregory Petrics, INBRE Exploratory Award (CURE)	Vermont State University	2025	Lamoille	$10,000
Emily Tarleton, INBRE Exploratory Award (CURE)	Vermont State University	2025	Lamoille	$10,000
Tang Ye, INBRE Startup Award	Norwich University	2025	Washington	$10,000
Simon Pearish, INBRE Startup Award	Norwich University	2025	Washington	$10,000
Josephine Reynes, INBRE Startup Award	Norwich University	2025	Washington	$10,000
				Total Funds $455,000