Vermont Established Program to Stimulate Competitive Research (VT EPSCoR)



VT EPSCoR SOCKS Team gathered for a 2-day Strategic Planning Meeting in August 2023

Vermont EPSCoR's Research Infrastructure Improvement (RII) Track-1, $20M award began on June 1, 2023 for research on Harnessing the Data Revolution for Vermont: The Science of Online Corpora, Knowledge, and Stories (SOCKS). The groundbreaking data science effort aims to better understand and harness the power of stories and supports statewide economic and workforce development. The SOCKS project is intended to enable or enhance the study of any large-scale temporal phenomena including culture, politics, economics, linguistics, public health, conflict, and data journalism.

VERMONT NSF EPSCoR
ADVANCING GEOGRAPHIC DIVERSITY IN STEM

S.O.C.K.S. SCIENCE OF ONLINE CORPORA, KNOWLEDGE, AND STORIES

VERMONT EPSCoR
Established Program to Stimulate Competitive Research

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Impact of NSF EPSCoR in Vermont

- The **RII Track-I award** Harnessing the Data Revolution for Vermont: The Science of Online Corpora, Knowledge, and Stories (SOCKS) revolves around stories as an essential part of how people comprehend, explain, predict, and seek to navigate the world. SOCKS supports the Digital Humanities by developing a powerful approach to quantifying both individual stories and ecologies of stories through massive data collection, natural language processing, and large language models. As part of this award, 8 Vermont faculty were awarded pilot awards and two Vermont small businesses were awarded SBIR awards (each totaling $15K) in FY25.

- Two **E-CORE Awards (totaling nearly $4M)** have been newly awarded to Landmark University and Bennington College as part of the Science and Technology Research Initiative for the Vermont Economy (STRIVE), which will invest in achieving a holistic, jurisdiction-wide research ecosystem attuned to the needs of Vermont in partnership with Community College of Vermont.

- One Vermont **RII Track-2 FEC** award (focusing on advanced wireless integration), led by PI Dryver Huston at the University of Vermont (UVM), received nearly $1M in new funding in FY25. Three other Track-2 collaborations involving Vermont Co-PIs (two led by Maine and one by Nebraska) remained active into FY25 with funding received in prior years.

- Two Vermont faculty were awarded **EPSCoR Research Fellows** awards in FY 2025: Luis Duffaut Espinosa at UVM (to advance robotic systems for space exploration) and Jennifer Crodelle at Middlebury College (to mathematically model proteins associated with degenerative disease).

- **Seven awards, totaling nearly $2M**, were **co-funded** by NSF EPSCoR in FY 2025 to faculty at UVM for a wide range of research in physics, biology, environmental science, and mathematics/statistics.

- An additional 20 awards not otherwise noted above (11 to UVM, 8 to Middlebury College, and one to Bennington College) remained active in FY25 with funding from prior years, for a total of 36 active NSF EPSCoR awards in FY25 totaling **over $11M in new funds**.

RII Track-1 Program Overview

This significant award catalyzes existing strengths in computational social science at the University of Vermont and five baccalaureate institutions in Vermont: Vermont State University (VTSU), Middlebury College, Champlain College, Saint Michael's College, and Norwich University, working as part of an integrated and multidisciplinary team. The Center for Workforce and Professional Education (CWPE) at VTSU and UVM includes training the next generation of students in complex systems and data science from grades 7–12 through the undergraduate level and providing teacher training for computer and data science to secure the long-term future of VT's tech industry and associated economy, with partnerships such as aiVermont, the ECHO Leahy Center, Governor's Institute of Vermont, and the Montshire Museum.



VT EPSCoR SOCKS Co-PI, Dr. Peter Dodds, at the Strategic Planning Meeting August 2023

Success Stories

- "This funding includes $1M to **double the power of the state's high-performance computing environment**, supporting Computational Social Science research in 20 departments at UVM along with seven institutions in Vermont," said Christopher Danforth, Director of the Vermont Advanced Computing Center. "Building on our corporate partnerships with MassMutual and Google, we're thrilled to be working with fellow Co-PIs Randall Harp and Juniper Lovato from the Computational Ethics Lab to ensure the project advances privacy practices in the application of data science, as well as the many other scientists at Vermont institutions who will contribute to this effort."
- "In astronomy and biology, the telescope and the microscope helped us describe phenomena far beyond our limitations, opening up vast new scientific realms," said SOCKS Co-PI and Vermont Complex Systems Center Director Peter Dodds. "With the SOCKS program, we're working to do the same for stories by building and refining instruments that can 'distantly read' and make sense of enormous collections of texts, whether they be libraries of books, streaming social media, or Vermont folktales from the 1800s. **We need to understand how stories evolve and spread, the effects stories have on populations, and with SOCKS, we will help grow a measurement-first science of stories."**



A key element of the award is the work performed by the VT EPSCoR **Center for Workforce and Professional Education (CWPE) team (pictured above),** which offers research opportunities to middle, high school, and undergraduate students across Vermont. Fourteen Undergraduate Research Internships were offered in 2025, and a newly approved Graduate Certificate in Computer Science Education enrolls thirteen K-12 teachers at the University of Vermont led by Dr. Regina Toolin.

Statewide NSF EPSCoR Funding FY25 (NSF October 2024-September 2025)

Program/Grant Name	Type / Institution	FY	Cong District	FY25 Amount
RII Track-1 – Harnessing the Data Revolution for Vermont: The Science of Online Corpora, Knowledge, and Stories (SOCKS) PI: Bernard Cole, Award NSF OIA 2242829, VT Co-PIs: Peter Dodds, Chris Danforth, Juniper Lovato, Randall Harp (all University of Vermont)	RII Track-1 / Lead Institution: University of Vermont	2025	VT At-Large	$4,147,253
Collaborative Research: E-CORE RII: The Science and Technology Research Initiative for the Vermont Economy PI: Lisa Chabot, Award NSF OIA 2438168	E-CORE RII / Landmark University	2025	VT At-Large	$2,798,545
Collaborative Research: E-CORE RII: The Science and Technology Research Initiative for the Vermont Economy PI: David Bond, Award NSF OIA 2438169	E-CORE RII / Bennington College	2025	VT At-Large	$988,237
RII Track-2 FEC: Advancing Research Towards Industries of the Future to Ensure Economic Growth for EPSCoR Jurisdictions - Advanced Wireless - Integration with Infrastructure System PI: Dryver Huston, Award NSF OIA 2119485, VT Co-PIs: Tian Xia (UVM), Safwan Wshah (UVM) Mary O'Leary (Vermont State University)	RII Track-2 FEC / Lead Institution: University of Vermont	2025	VT At-Large	$829,371†
CAREER: Tissues as Adaptive Materials: Investigating the Role of Cellular Adaptability in Tissue Mechanics PI: Haicen Yue, Award NSF CMMI 2440375	Co-Funding / University of Vermont	2025	VT At-Large	$571,140
Collaborative Research: ORCC: Climate change responses in a globally invasive insect: Quantifying the roles of local adaptation, seasonal adaptation, and phenotypic plasticity PI: Joaquin Nunez, Award NSF IOS 2412801	Co-Funding / University of Vermont	2025	VT At-Large	$501,476
In-situ X-ray Scattering Studies of Oxide Epitaxial Growth Kinetics and Dynamics PI: Randall Headrick, Award NSF DMR 2336506	Co-Funding / University of Vermont	2025	VT At-Large	$463,057
EPSCoR Research Fellows: NSF: Robust Data-Driven Formations of Multi-Robot Exploring Systems PI: Luis Duffaut Espinosa, Award NSF OIA 2429505	Research Fellows / University of Vermont	2025	VT At-Large	$269,069
EPSCoR Research Fellows: NSF: Building Mechanistic Models for the Interaction of Tau Protein and Neuronal Voltage PI: Jennifer Crodelle, Award NSF OIA 2531428	Research Fellows / Middlebury College	2025	VT At-Large	$237,174
CAREER: Lakes on a Changing Landscape: A Disturbance Phenology for Phytoplankton Communities and Ecosystem Function PI: Ana Morales, Award NSF DEB 2144197	Co-Funding / University of Vermont	2025	VT At-Large	$210,626
Intersection Theory for Differential Equations PI: Taylor Dupuy, Award NSF DMS 2401570	Co-Funding / University of Vermont	2025	VT At-Large	$109,748
Tropical Combinatorics of Graphs and Matroids PI: Spencer Backman, Award NSF DMS 2246967	Co-Funding / University of Vermont	2025	VT At-Large	$68,294
ADVANCE Catalyst: Examining the Systemic Barriers Impacting Faculty Retention and Success at the University of Vermont PI: Priyantha Wijesinghe, Award NSF EES 2438001	Co-Funding / University of Vermont	2025	VT At-Large	***

NSF EPSCoR funding awarded to Vermont during Federal Fiscal Year 2025 (October 2024 – September 2025) reported in NSF Database as of February 12, 2026.

†$998,240 total awarded in FY25 with $829,371 to Vermont ($628,794 to UVM and $200,577 to Vermont State University) and $168,869 to University of Maine

***Originally awarded and obligated $149,999 in FY25, but was administratively terminated before any funds had been spent

Total Funds $11,193,990

BROADENING PARTICIPATION THROUGH NSF STRIVE: CONNECTING EPSCOR TO RURAL VERMONT

NSF EPSCoR
ADVANCING GEOGRAPHIC DIVERSITY IN STEM

VERMONT EPSCoR

STRIVE

The Science and Technology Research Initiative for the Vermont Economy launched its **first year** of work. A collaborative effort between Landmark College, Bennington College, The Community College of Vermont and the Brattleboro Development Credit Corporation, its mission is to build a more inclusive ladder of STEM opportunities.

K-12 (STEAD) Award Snapshot

35 Applications Received

6 Awarded Institutions

$15K Year 1 Funds to be Awarded





exposure to_stem
computing
manufacturing
trades
physical_science
robotics
aerospace
steam
sustainable_agriculture
advanced-stem
makers_tools
physics
ecology

Research Seed (STaRS) Award Snapshot

2 Deadlines Completed

15 Total Applications Received

5 Institutions Engaged

Deadline comparison

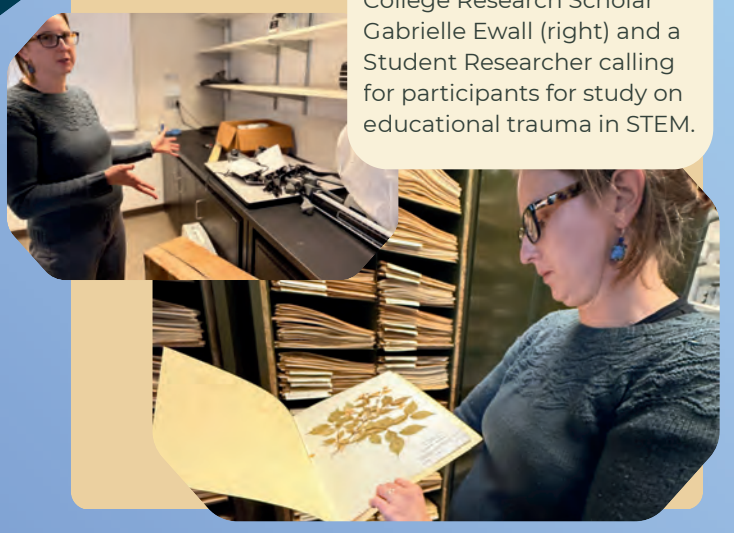
Aug. 2 | **Oct.** 5

5 Total Awards Granted

$67K Funds Awarded



Part of NSF STRIVE's mission is broaden participation in STEM for all ages. These funding opportunities and resources will strengthen research capacity across the state.



(Below) Bennington College Faculty, Caitlin McDonough MacKenzie prepares to digitize an herbarium collection. (Above) Landmark College Research Scholar Gabrielle Ewall (right) and a Student Researcher calling for participants for study on educational trauma in STEM.



EVENTS

172 People attended

15 Events held

11 In Person

4 Virtual

27 Subscriptions added as result

learn more at **strivevt.org**