

The Language of STEM

New grant merges STEM and communication for N.H. English learners

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THE STEM DISCOVERY LAB AT UNH MANCHESTER IS A PARTNER IN SLATE, STEM-LANGUAGE ARTS TEACHING/LEARNING ECOSYSTEMS, A NEW PROJECT FUNDED BY THE U.S.

DEPARTMENT OF EDUCATION. PHOTO BY JEREMY GASOWSKI.

UNH researchers have received a \$3.5 million award from the U.S. Department of Education to develop a multi-tiered program that will support New Hampshire middle and high schoolers in learning topics related to STEM — science, technology, engineering and mathematics. The program will supply enrichment training to teachers

and establish a peer mentoring program for students, focusing largely on English learners, students often underrepresented in the STEM field.

“Our goal is to find ways to provide students with the assistance they need for communicating and understanding the scientific curriculum in order to gain interest and ultimately succeed in STEM fields.”

“As a group, multilingual students continue to be inadequately represented in STEM in college and in the workforce, and these issues have been further complicated by recent education disruptions, for all students, because of COVID-19,” says [Julie Bryce](#), professor in Earth sciences and principal director for the program, called SLATE (STEM-Language Arts Teaching/learning Ecosystems). “Our goal is to find ways to provide students with the assistance they need for communicating and understanding the scientific curriculum in order to gain interest and ultimately succeed in STEM fields.”

SLATE will be implemented by UNH’s [Leitzel Center](#), the UNH [NH Literacy Institutes](#) and UNH’s [Community Literacy Center](#), in partnership with the [UNH STEM Discovery Lab](#), in the Manchester school system and then eventually broadened across the state. The goal is to create multiple pathways to engage in and communicate STEM. It will create mentoring programs to train high school and undergraduate students to become tutors to help students. Professional development programs will be offered to teams of STEM, language arts and English language teachers to assist them in developing coordinated strategies to deepen knowledge in STEM topics, science communication and writing with a focus on environmental sciences.



STUDENTS COMMUNICATING THEIR ENVIRONMENTAL RESEARCH AT A RECENT GLOBE SYMPOSIUM. PHOTO BY HALEY WICKLEIN.

The goal is to create interactive observatories at, or near, the schools that engage students and teach them about the world around them with an emphasis on not only bolstering their scientific understanding but also communicating it. SLATE participants will learn to explore their local area by asking questions, designing investigations, carrying out data collection, entering data into a globally accessible database and interpreting analyses using drone and satellite imagery. This blended approach is meant to stimulate critical thinking, sharpen skills in reasoning and develop the ability to pose and communicate scientific arguments.

“We want to help support kids who may have interest in STEM but may be struggling in other ways,” says [Christina Ortmeier-Hooper](#), a multilingual writing specialist who is an associate professor of English, director of the New Hampshire Literacy Institutes and SLATE co-director. “By taking a different avenue, such as hands-on environmental research, coding and science communication, we hope to reach some of those underserved students in the area of STEM and also aid them in developing their reading and writing skills.”

Other co-principal investigators include [Bethany Silva](#), research assistant professor in education and director of UNH's Community Literacy Center; [Laura Nickerson](#), project director at the Leitzel Center; and [Jennifer Bourgeault](#), project director at the Leitzel Center and U.S. country coordinator for [The GLOBE Program](#). Doctoral students from UNH's [composition studies](#) and [natural resources and Earth system sciences](#) programs will also be involved in the research project.

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