Maine STEM Partnership STEM+C Webpages

RISE Center

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About Our Project

In the fall of 2018, the RiSE Center was awarded $1.25 M to study how computer science can be successfully integrated into science instruction at the middle school level. This research study is a 3 year project during which 30 middle school science teachers will partner with researchers and staff at the RiSE Center to develop and implement science modules that include an integrated computer science component. Our hope is to gain an understanding of how computer science can be taught within a science program in a way that supports student learning in both the science discipline and computer science in addition to identifying what supports are needed to help teachers integrate computer science into their instruction successfully.
### PROJECT TIMELINE

This is a 3 year project that began in September of 2018. Districts participating in the project have been randomly assigned to either Cohort 1 or Cohort 2. Participation for both cohorts is laid out below.

<table>
<thead>
<tr>
<th></th>
<th>COHORT 1</th>
<th>COHORT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPRING 2019</strong></td>
<td>Spring Cohort Meeting: May 18, 9AM - 3PM</td>
<td>No Participation</td>
</tr>
<tr>
<td></td>
<td>Spring Cohort Meeting: June 1, 9AM - 3PM</td>
<td></td>
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<tr>
<td><strong>SUMMER 2019</strong></td>
<td>Content Immersion in Computer Science: July 8-11</td>
<td>No Participation</td>
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<td></td>
<td>Integrated Module Design: July 22-24</td>
<td></td>
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<tr>
<td><strong>FALL 2019</strong></td>
<td>Pilot Integrated Unit</td>
<td>Teach standard units</td>
</tr>
<tr>
<td></td>
<td>Attend two cohort meetings</td>
<td>Attend two cohort meetings</td>
</tr>
<tr>
<td></td>
<td>Attend Fall Summit: November 22 &amp; 23</td>
<td>Attend Fall Summit</td>
</tr>
<tr>
<td><strong>SPRING 2020</strong></td>
<td>Pilot Integrated Unit</td>
<td>Teach standard units</td>
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<tr>
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<tr>
<td><strong>SUMMER 2020</strong></td>
<td>Content Immersion in Computer Science</td>
<td>Content Immersion in Computer Science</td>
</tr>
<tr>
<td></td>
<td>Integrated Module Modification</td>
<td>Integrated Module Modification</td>
</tr>
<tr>
<td><strong>FALL 2020</strong></td>
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</tr>
<tr>
<td></td>
<td>Attend two cohort meetings</td>
<td>Attend two cohort meetings</td>
</tr>
<tr>
<td><strong>SPRING 2021</strong></td>
<td>Pilot Integrated Unit</td>
<td>Pilot Integrated Unit</td>
</tr>
<tr>
<td></td>
<td>Attend two cohort meetings</td>
<td>Attend two cohort meetings</td>
</tr>
<tr>
<td><strong>SUMMER 2021</strong></td>
<td>Integrated Module Modification</td>
<td>Integrated Module Modification</td>
</tr>
</tbody>
</table>
STEM+C Community Members! Log in to view your community page and team resources.

This work is supported by the National Science Foundation under Grant No. 1842359. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
INSPIRES

Leveraging Intelligent Informatics and Smart Data for Improved Understanding of Northern Forest Ecosystem Resilience

Starting in fall of 2020, eight teachers and five researchers from the RISE Center will work together to develop lessons for the classroom focused on forestry and Quantitative Reasoning in Context (QRC). This work will be done as part of a larger grant awarded to a three state partnership between Maine, Vermont, and New Hampshire focused on researching the Northern Forest Region. This project will focus on one of the four project themes exploring how to support students' quantitative reasoning skills in the context of forestry.

Learn more about the broader INSPIRES research! →

This project is divided into four themes focused on different aspects of gathering, analyzing and utilizing data collected from across the Northern Forest Region. We will be leading the work within theme 4.

| Theme 1: Advanced Sensing & Computing Technologies |
| Theme 2: Environmental Informatics & Analytics |
| Theme 3: Integrated Ecological Modeling |
| Theme 4: Quantitative Reasoning in Context |

THEME 4 RESEARCH QUESTIONS

1. What types of knowledge and supports, including professional learning experiences, are helpful for teachers in teaching integrated modules to support student learning of quantitative reasoning in forestry contexts?
2. How does the design process contribute to teachers' knowledge and preparation to teach integrated modules?
3. In what ways do students benefit from the integrated modules?

THEME 4 TEAM MEMBERS

SUSAN MCKAY
Professor of Physics, Founding Director, Maine Center for Research in STEM Education (RISE)

SARA LINDSAY
Associate Professor of Marine Science, RISE Center Faculty
University of Maine
LAURA MILLAY
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Coordinator, RISE Center Staff
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Maine STEM Partnership
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University of Maine

LAURA NICKERSON
Project Director, Leitzel Center
University of New Hampshire

REGINA TOOLIN
Associate Professor of Education and Social Services
University of Vermont

TEACHERS PARTNERS
- Heather Mitchell, Houlton High School
- Ruth Poland, Mount Desert Island High School
- Kate Drummond, Skowhegan Area High School
- Dylan Harry, Fryeburg Academy
- Laurie Spooner, Van Buren District School
- Susan Sieczkiewicz Linscott, Lee Academy
- Stephen Adams, Windham High School
- Amy Sidell, Hampden Academy

PROJECT PARTNERS

University of New Hampshire
NEST
University of Maine
NSF TEACHING FELLOWS

The National Science Foundation (NSF) Teaching Fellowship Program, funded through NSF’s Noyce Program, is an opportunity for graduate students in the Master of Science in Teaching program beginning their teaching career as a science and/or mathematics teacher at a middle school or high school in Maine.

THE PROGRAM

The goal of this program is to build a strong community of new science and mathematics teachers, along with experienced leading teachers who serve as mentors. This community meets regularly to share achievements and challenges of teaching STEM disciplines and works together to hone their craft of teaching in self-selected areas. This program supports early teachers in making a successful transition from pre-service teacher to teacher. In the later years of the program, these new teachers will have access to leadership training opportunities.

COMMUNITY MEMBERS

Ken Akiha
Mia Callahan
Grace Coffé
Erin Doran

Jennifer Dunham
Billy Fern
Katie Flavin
Cameron Fudge

Gabrielle Holt
Nick Innis
Justin Lewin
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Betsy Trenckmann
Stephanie Virgilio
Joe Walter
Isaac Walton

Sam Ward