RiSE Center Conference

on STEM Education and Related Research

Keynote speaker Dr. Fernando Nieto-Fernandez works with students in the Science & Technology Entry Program at SUNY Old Westbury.

Integrating Research and Practice:

Engaging Students with Authentic Research and Problem Solving in STEM

June 26–27, 2023

Wells Conference Center

University of Maine, Orono

Hosted by the Maine Center for Research in STEM Education

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RISE RESEARCH IN STEM EDUCATION

MAINE STEM PARTNERSHIP

Contents

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Funding Notice

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Any opinions, findings and conclusions or recommendations expressed in the conference material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Conference Patron

MAINE eDNA

We gratefully acknowledge the financial support and program participation of the Maine-eDNA project, which is a state-wide, multi-institutional initiative establishing Maine as a national leader in environmental monitoring, ecological understanding and sustainability of aquatic ecosystems through research, education, and outreach. See the Maine-eDNA website for more information: https://umaine.edu/edna/.

If you would like more information about opportunities for educators, please contact Beth Campbell, Maine EPSCoR Education, Outreach and Diversity Program Manager: beth.campbell@maine.edu or 207.581.2295.

Introduction

Welcome to the **2023 RiSE Center Conference on STEM Education and Related Research** at the University of Maine's flagship campus in Orono, located on Marsh Island in the homeland of the Penobscot Nation.

We are delighted to meet together to exchange ideas and current work centered on integrating STEM education research and practice. This year we focus on *Integrating Research and Practice: Engaging Students with Authentic Research and Problem Solving in STEM* and our conference strands are as follows:

- Building Skills through Research Learning and Authentic Problem Solving
- Community-Based Strategies for Inclusivity and Deepening STEM Learning for All Students
- Course-Based Undergraduate Research Experiences
- Engaging Students in Inquiry and Authentic Research Outdoors
- Integrating Technology, Computing, and Computational Thinking in STEM Learning and Problem Solving
- Universal Design for Learning to Support Equity in Authentic Research
- Using Models to Build Understanding

National and local experts have been invited by the conference committee to provide thought-provoking ideas, newest research findings, best practices, and strategies for addressing challenges. Our agenda includes two keynote presentations, concurrent talk and workshop sessions, and opportunities to network with other educators and researchers.

We hope you find this conference a valuable experience. Enjoy every minute of these two packed and exciting days of our annual conference. Thank you for all that you are contributing to our educational and professional communities. May our time together be enriching for us all.

The 2023 RiSE Center Conference Committee and RiSE Center Staff

- **Dr. Susan McKay**, Director of the RiSE Center and Professor of Physics
- **Dr. Sara M. Lindsay**, Assistant Director of the RiSE Center and Professor of Marine Sciences
- **Torey Bowser**, RiSE Center Faculty & Student Success Programs Coordinator
- **Beth ByersSmall**, RiSE Center Teaching Fellowship Program Coordinator
- **Yadina Clark**, Administrative Specialist CL3
- **Kelsey Davis**, STEM Education Research Associate
- **Jennifer Fronczak**, Professional Learning Specialist
- **Gabrielle Holt**, Professional Learning Specialist
- **Beth Muncey**, Resource and Professional Development Coordinator
- **Dr. Franziska Peterson**, Assistant Professor of Mathematics Education and RiSE Center Grad. Coord.
- **Chrissy Siddons**, Research & Evaluation Coordinator
- **Marina Van der Eb**, Maine STEM Partnership Coordinator

Maine Center for Research in STEM Education

The Maine Center for Research in STEM Education (RiSE Center) provides an integrated approach to University-based research and professional learning experiences in science, technology, engineering and mathematics education. The RiSE Center is an interdisciplinary research center with 21 faculty members from the College of Education and Human Development, the College of Engineering, the College of Liberal Arts and Sciences, and the College of Natural Sciences, Forestry and Agriculture. RiSE faculty members are involved in partnerships with other STEM and STEM education faculty, PreK–12 teachers and administrators, and members of nonprofits committed to improving STEM education. Their work includes basic and applied research on learning and teaching in science and mathematics; research-guided modifications to introductory and upper-level science, mathematics, and engineering courses to include more student-centered practices; establishing content-rich, research-based teacher preparation and ongoing professional learning; and building infrastructure for ongoing STEM education improvement with teachers, schools, and administrators throughout the state.

The Master of Science in Teaching Program, offered by the RiSE Center, provides a rigorous research-based route to initial certification for STEM majors interested in teaching secondary science and/or mathematics; an opportunity for veteran teachers to build their knowledge of teaching and learning in their disciplines while earning a Master's degree; and a chance for STEM majors to conduct STEM education research, often in preparation for doctoral work in a related field. All MST graduates must complete a research thesis as part of the degree requirements. The University of Maine has recently established a Ph.D. program in STEM Education, offered by RiSE Center faculty members through the College of Education and Human Development.

Since its formation in 2001, the RiSE Center has hosted conferences annually focused on integrating STEM education research and practice. This integration is a significant part of many of the Center's initiatives, including the Maine STEM Partnership, a state-wide preK–16+ STEM education improvement community with 160 Maine schools, 100 school districts, 700 teachers, 29,000 students, and over 40 University of Maine faculty members. The Partnership sustains a state-wide professional community that brings educators and education researchers together to support high-quality, evidence-based instruction for students at all levels. More information about the RiSE Center and its programs can be found at umaine.edu/risecenter.

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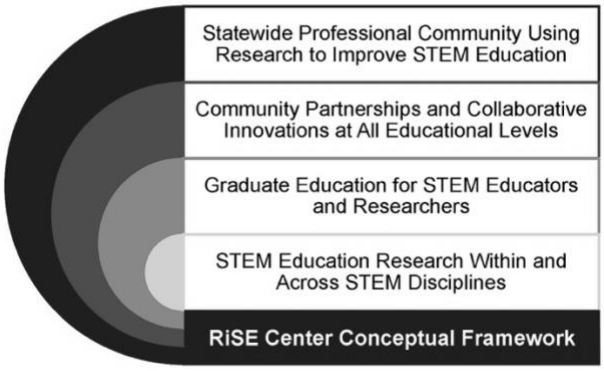

Conference Schedule

Monday, June 26

8:30–9:30 a.m.	Check-In and Coffee/Tea	Wells Lobby, Atrium
9:30–10:30 a.m.	**Conference Welcome and Keynote 1**	**Wells 1**
10:30–10:45 a.m.	Break and Snacks	Atrium
10:45 a.m.–12:15 p.m.	**Session A: Workshops**	**Wells 1, 2, 3**
12:15–1:15 p.m.	Lunch	Atrium
1:15–1:45 p.m.	**Session B: Talks**	**Wells 1, 2, 3**
1:45–1:50 p.m.	Transition	
1:50–2:20 p.m.	**Session C: Talks**	**Wells 1, 2, 3**
2:20–2:35 p.m.	Break and Snacks	Atrium
2:35–4:05 p.m.	**Session D: Workshops**	**Wells 1, 2, 3**
4:05–5:00 p.m.	**Poster Session with Appetizers and Cash Bar**	**Atrium**

Tuesday, June 27

7:30–8:30 a.m.	Breakfast	Atrium
8:30–8:50 a.m.	**Welcome**	**Wells 1**
8:50–8:55 a.m.	Transition	
8:55–9:25 a.m.	**Session E: Talks**	**Wells 1, 2, 3**
9:25–9:30 a.m.	Transition	
9:30–10:00 a.m.	**Session F: Talks**	**Wells 1, 2, 3**
10:00–10:15 a.m.	Break and Snacks	Atrium
10:15–11:45 a.m.	**Session G: Workshops**	**Wells 1, 2, 3**
11:45 a.m.–12:45 p.m.	Lunch	Atrium
12:45–1:30 p.m.	**Keynote 2**	**Wells 1**
1:30–1:45 p.m.	Break and Snacks	Atrium
1:45–3:15 p.m.	**Session H: Workshops**	**Wells 1, 2, 3**
3:15–3:30 p.m.	**Wrap-Up and Evaluation**	**Wells 1**

Teachers who will receive stipends MUST turn in name badges at 3:30 on Tuesday.

Keynote Presentation 1

Monday, 9:45–10:30 a.m.

Dr. Fernando E. Nieto-Fernandez

Professor of Biology, SUNY Old Westbury
Science and Technology Entry Program, PI and Co-Director

A TIMEly CURE for the "leaky STEM pipeline"

***Strand**: Community-Based Strategies for Inclusivity and Deepening STEM Learning for All Students*

The Science and Technology Entry Program (STEP) is funded by the New York State Education Department (NYSED). We provide enrichment opportunities for students from 7-12 grade to learn about science by "doing the science" using a *TIME model*, **T**hematic **I**nquiry-based with **M**entorship and **E**nhancements. We focus heavily on the development of our student affective skills through a strong mentorship structure that supports the development of content and process skills critical for success in STEM. In my presentation I will discuss our approach to science education and research training over the past twenty years using the *TIME model*. We partner local school districts in Long Island, NY serving minoritized and/or financially disadvantaged populations. These populations are also underrepresented in STEM fields. Currently we serve 300+ students from 7th through 12th grade every year. Although the number of URM high school graduates choosing STEM fields increased by 10% from 1992-2017, their persistence is still at the same rate, ≅ 22%, and it is significantly lower than their non-URM counterparts, ≅ 45%. We are familiar with the leaky "STEM pipeline" metaphor. The model is selective based on academic performance disregarding social determinants of learning that impact students early on. Our approach in STEP considers all students regardless of their academic performance. We focus on the development of their affective skills, e.g. their sense of belonging and their self-identity, and character-based skills both individual and collaborative. The development of these skills correlates positively with the development of their content knowledge. Our STEP graduates choose STEM majors at twice the national rates, 59%, for the same demographics. They also persist in STEM at a significantly higher rate, 87.5%.

Session A: Workshops

Monday, 10:45 a.m.–12:15 p.m.

Room	Title	Presenter(s)	Strand
Wells 1	**An Introduction to Social Emotional Learning in the STEM Classroom**	Grace Coffe Nick Innis	Community-Based Strategies for Inclusivity and Deepening STEM Learning for All Students
Wells 2	**UMaine Labs: Active and Engaging Labs for Students of Any Level (K-16) That Are Easier on the Instructor!**	Dr. Frank Dudish	Engaging Students in Inquiry
Wells 3	**Using Forestry Techniques to Improve Students' Quantitative Reasoning**	Betsy Trenckmann Laurie Spooner	Engaging Students in Inquiry and Authentic Research Outdoors (and Integrating Technology, Computing, and Computational Thinking in STEM Learning and Problem Solving)

A-W1. **An Introduction to Social Emotional Learning in the STEM Classroom**

Join us for this opportunity to explore social emotional learning in a science or mathematics classroom setting. Take away skills to foster an inclusive classroom for you and your students through this interactive session! The goals of this session are to explore social emotional learning categories, develop some strategies to implement in the classroom, and practice social emotional learning as a group. This session will give a brief overview of 4 different competencies of social emotional learning: Cooperative Learning, Productive Talk, Productive Struggle, and Responsibility and Student Choice.

A-W2. **UMaine Labs: Active and Engaging Labs for Students of Any Level (K-16) That Are Easier on the Instructor!**

Participants will engage in a lab of their choosing to immerse themselves in a different kind of lab structure that better exemplifies the foundations of Science, is more active for the students, and is easier for the instructor to grade. Each participant will experience and discuss what students have the opportunity to learn. We will also cover what the instructor needs to know and do to support student learning in inquiry-based labs in different contexts and disciplines.

A-W3. **Using Forestry Techniques to Improve Students' Quantitative Reasoning**

HANDS ON and OUTSIDE!! Participants will explore how different forestry techniques (tree height, DBH, etc.) can be used in the classroom to help improve quantitative reasoning of students. Participants will use trees on the UMaine campus to get hands-on experience with these techniques so they can implement them in their own classrooms.

Session B: Talks

Monday, 1:15–1:45 p.m.

Room	Title	Presenter(s)	Strand
Wells 1	**Creating Classroom Culture through Norm Development**	Reilly Romanoski Joe Walter Cameron Fudge Andrew Myers	Community-Based Strategies for Inclusivity and Deepening STEM Learning for All Students
Wells 2	**The Sea-to-Sky Experience**	Dr. Karl Kreutz	Engaging Students in Inquiry and Authentic Research Outdoors
Wells 3	**Environmental DNA (eDNA) Project-Based Curricula in Biology and Genetics Courses**	Dr. Judith L. Roe	Course-Based Undergraduate Research Experiences

B-T1. **Creating Classroom Culture through Norm Development**

A safe, consistent, and productive classroom environment requires both students and teachers to be invested in each other and in the classroom itself. Creating this community-wide investment through relationship building and shared norms at the start of the year helps to ensure a positive environment from the start. In this talk, you will discuss and practice ways to build an initial connection with students, and then through trying the activity yourself, use that connectivity to create a shared set of norms for the classroom. You will leave with strategies to use, as well as an idea of what norms are important to you and what purpose they serve.

B-T2. **The Sea-to-Sky Experience**

The Sea-to-Sky Experience (ERS410) is a new capstone experience course in the University of Maine School of Earth and Climate Sciences. Many critical processes in the Earth and climate sciences occur at interfaces among the atmosphere, cryosphere, hydrosphere, biosphere, oceans, solid earth, and society. Using an interdisciplinary systems-based approach, as well as the ability to make direct observations, are essential to understanding these processes. ERS410 will visit a region where a wide range of environments - everything from open ocean (“sea”) to glaciers (“sky”) - can be experienced. During this travel study course we focus on a range of professional and practical skills, including global impact/local relevance research, proposal development, science planning and logistics, risk assessment and mitigation, safety, group dynamics and collaboration, field-based and remote observations, cultural knowledge, and science communication.

B-T3. **Environmental DNA (eDNA) Project-Based Curricula in Biology and Genetics Courses**

A project-based curriculum is a high-impact practice that offers undergraduate students an opportunity to participate in authentic scientific research and apply the scientific method to local problems needing a scientific approach. We developed projects utilizing the methods of environmental DNA (eDNA) analysis in both General Biology and Genetics courses at the University of Maine at Presque Isle. These projects allowed us to focus on the scientific process and communication of science in our Laboratory sections. In one project students compared the diversity of fish and other vertebrates detected by eDNA methods in local and regional streams. In the second project students compared the soil microbiome (bacteria and fungi) in local agricultural soils with a possible history of arsenical pesticide use. Student engagement in these projects was high, and we are currently producing curricular materials for integrating eDNA projects into undergraduate research laboratory courses.

Session C: Talks

Monday, 1:50–2:20 p.m.

Room	Title	Presenter(s)	Strand
Wells 1	**Science and Mathematics Notebooking to Organize Classrooms and Deepen Content Engagement**	Isaac Walton Grace Coffe Jenn Fronczak Jen Wright	Community-Based Strategies for Inclusivity and Deepening STEM Learning for All Students
Wells 2	**Choose Your Own Adventure: Have Phun with pH!**	Dr. Jennifer Newell Dr. Edward Bernard	Integrating Technology, Computing, and Computational Thinking in STEM Learning and Problem Solving
Wells 3	**Modeling as a Unifying Practice in the Middle School Classroom**	Amanda Sommi	Using Models to Build Understanding

C-T1. **Science and Mathematics Notebooking to Organize Classrooms and Deepen Content Engagement**

We sought to integrate notebooks into four STEM classrooms to provide students additional opportunities to engage with and make sense of content. Moreover, we hoped to build organizational tools to make classroom administration easier. In this presentation, we will discuss our methods, outcomes, and future plans.

Our focus on notebooks was driven by recognition that they encourage students to actively engage, which we hoped would help them make connections and build knowledge. To this end, we employed strategies such as Cornell Notes, sketchnoting, modeling, drawing, and concept maps. Additionally, we used notebooks as a place to organize investigation procedures and record lab work.

We observed several positive outcomes from these efforts, including deeper understanding of content, increased ability to access information, and clearer structure in our classrooms. Additionally, students reported feeling more confident in their ability to take effective notes.

Moving forward, we plan to further refine our notebook strategies in light of student feedback. Our ultimate goal is to provide an organized way for students to interact with their ideas about the content.

Overall, this presentation will provide valuable insights for educators seeking to improve student learning outcomes through notebooking strategies that support student engagement and sense-making.

C-T2. **Choose Your Own Adventure: Have Phun with pH!**

The COVID pandemic drove instructors to develop alternative teaching strategies for student engagement. We took inspiration from Goosebumps to develop digital learning modules to increase accessibility of the core chemistry topics of bonding and pH. These modules were implemented across chemistry courses to students spanning many environmental and human sciences. Participants reported increased confidence, competency, and enjoyment from the modules compared to traditional course materials (i.e., lecture videos, worksheets, discussions, etc.). This design approach can be adopted across many STEM disciplines to help students bond with their courses!

C-T3. **Modeling as a Unifying Practice in the Middle School Classroom**

Developing and using models is a core practice of the sciences, but can be challenging to implement with rigor in the middle school science classroom. In this talk we will share learnings from a multi-year research project focused on incorporating modeling as a unifying practice of the sciences. Used as a tool to support students in ecosystem investigations, students built a variety of models designed around their specific investigative questions, including conceptual models, microcosms, embodied modeling games, and data and chance models. Students compared and critiqued the various representations they built, leveraging consistent language and structural processes to make meaning from their gathered data and applied these understandings to the design of future investigations. Our presentation will highlight the forms of modeling, key instructional choices, and classroom routines that supported student inquiry with models and look towards future goals of expanded use of modeling in middle school classrooms. This work was done as part of a collaboration with the Gulf of Maine Research Institute, Vanderbilt University, and Bowdoin College.

Session D: Workshops

Monday, 2:35–4:05 p.m.

Room	Title	Presenter(s)	Strand
Wells 1	**Learning Alongside Your Students Outside**	Marci Train	Engaging Students in Inquiry and Authentic Research Outdoors
Wells 2	**Using Edison Robots to Teach about Motion in Physical Science**	Jim Fratini	Integrating Technology, Computing, and Computational Thinking in STEM Learning and Problem Solving
Wells 3	**So you want to eDNA?**	Sarah O'Malley Dr. Kerry Whittaker	Course-Based Undergraduate Research Experiences

D-W1. **Learning Alongside Your Students Outside**

Participants will learn how to let the student's take the lead on data collection for community projects. They will hear how Long Island Elementary School integrates base placed learning in their classroom and uses their learning across the curriculum. They will be introduced to many projects that students have initiated over the years, many that have resulted in community service projects. They will also be introduced to resources such as The I-Wonder platform, a citizen science program that enables deep, authentic community learning which can help guide them through this process.

D-W2. **Using Edison Robots to Teach about Motion in Physical Science**

This workshop will be a hands-on experience using Edison Robots. The workshop will cover ways to integrate coding and robotics in a physical science class. It will also be a great opportunity to learn about Edison robots and ways you may use them in your classroom.

D-W3. **So you want to eDNA?**

Environmental DNA (eDNA) is an emerging tool used for monitoring environmental systems and cataloging biodiversity. The workshop facilitators, with the support of an EPSCoR eDNA curriculum innovation grant, have woven eDNA content and techniques throughout undergraduate biology, oceanography and environmental science programs. Facilitators will share insights on the curriculum development process and will provide a basic understanding of eDNA tools and techniques as well as exploring scientific questions and applications in the classroom. This workshop is open to all levels of interest and familiarity with molecular tools.

Poster Session

Monday, 4:05–5:00 p.m.

P1. **TroutKids: Brook Trout in the Classroom**

Hazel Cashman

This year at Lyman Moore Middle School in Portland, 7th grade science students participated in the TroutKids program, raising Brook Trout in their classrooms. A joint effort of the Portland Water District and the Cumberland County Soil and Water Conservation District, the TroutKids program supports students (and their teachers) in raising Brook Trout from eggs until the fry stage of their life cycle. At Lyman Moore Middle School, students concluded the program by walking from their school campus down to the Presumpscot River to release the fry, where they conducted a multidimensional habitat assessment—putting into practice everything they had learned about Brook Trout habitat requirements—before releasing their fry into the river.

P2. **Building STEM Identity and 21st Century Skills through Inquiry at Science & Engineering Fairs**

Rebecca Clark Uchenna

The Maine State Science Fair program provides a rich opportunity for students to delve into a science or engineering question that interests them while gaining valuable research skills. MSSF has long focused on supporting educators as they support students' scientific endeavors. We provide year-round support to teachers throughout the year through newsletters, workshops and individual consultations. Disparities in the level of support students get from their teachers in working through their projects still exist. Therefore, the MSSF team sponsors programming directed toward students including self-paced online courses that guide students through the phases of a project, live after-school sessions on topics such as data analysis or presentation skills, and office hours where students talk to each other about their projects and troubleshoot together. We will present aspects of MSSF that contribute to building student research skills.

P3. **Student Ownership and Accountability**

Amy Taylor and Lauren Swalec

How can I use _____ to increase student ownership and accountability? Our group is an intersection of middle school and high school, math and science teachers. We each wanted to try out different techniques to get students more interested in and responsible for their own learning. We used the group as a sounding board to get feedback about how to implement techniques, and get suggestions for new techniques to try. Techniques include: entrance/exit tickets, student self-assessment, 3-Act Math activities, Invention Convention, sticky learning, portfolios, lab checks, tell-me-more option, summatives that are projects instead of a typical test.

P4. **Anchoring Phenomena: Getting Students to Interact in Meaningful Ways**

Helene I. Adams and Daniel Gibson

A subgroup of the RiSE Center Teaching Fellowship engaged in a year-long focus on the use of Anchoring Phenomena as an instructional strategy. A primary goal was to emphasize student-centered learning and inquiry in science instruction. As a strategy to help students interact with material in meaningful ways, we searched for phenomena that were "rich" in science content. The poster shares some of the anchoring phenomena we created and modified to improve student sensemaking, engagement, and understanding. We look forward to sharing our reflections during the poster session.

P5. **Engaging Teachers, Education Researchers, and Scientists in Authentic Investigations with Forestry Data**

Christina Siddons and Dr. Franziska Peterson

The inclusion of authentic scientific research and data literacy in STEM education has gained traction in the K-12 realm over the past decade; however, for some teachers, engaging students in authentic research is often too complex, non-relatable to their students, or research findings are too difficult to interpret. Students often lack the necessary quantitative reasoning and data literacy skills to navigate complex data within contexts that are relevant to their local communities. Forests provide a natural laboratory for students to develop these quantitative reasoning skills in context, particularly for rural communities that have strong economic and ecological ties to the Northern Forest Region. The NSF INSPIRES project investigated climate change-induced threats facing forests through big data acquisition, integration, and analysis of northern forest variables and factors. In this poster, we highlight the work of the Theme 4 Education and Outreach team with a particular focus on the collaboration between participating teachers, education researchers, and scientists. We investigate the frameworks and strategies to build trust amongst and between stakeholders (education researchers, scientists, and

teachers), as well as seek to establish a set of recommendations for similar projects interested in setting the groundwork for successful researcher-practitioner collaborations.

P6. **Implementing Project Based Learning in a Multi-University, Collaborative Setting**

Kelsey E. Davis

Project based learning (PBL) is a student-centered approach to instruction in the classroom. The focus of PBL lies heavily in goal setting, constructing investigations, communication, and reflection in an effort to better prepare students for the challenges faced in their futures outside of the traditional classroom. In a drive to increase engagement, preparedness, and academic confidence in their own classrooms, a group of university faculty members from across the United States collaborated over two years to develop, implement, and revise a PBL-based group project in food processing and food engineering courses. The implementation portion of this project, a culmination of interdisciplinary collaboration and an investigation into synergistic teaching practices, is highlighted in today's poster presentation.

P7. **Supporting Active Learning in Introductory Quantum Physics**

Dr. MacKenzie Stetzer

This poster provides an overview of how Maine Learning Assistants have been incorporated into PHY 236 - Introductory Quantum Physics in order to support a more effective and widespread implementation of active learning strategies in this sophomore-level course. Students often find quantum mechanics counterintuitive and truly challenging to comprehend, but it is also one of the first areas of physics covered in the program that truly excites students and reminds them of why they wanted to study physics in the first place. The successful navigation of this challenging course is thus critical for physics and engineering physics majors and for the development of their professional identities. This poster showcases the implementation and data collection efforts associated with this course modification project.

P8. **Integrating MLAs for Active Learning in PHY 241 Computational Physics**

Dr. Liping Yu

This poster presents an overview of the integration of Maine Learning Assistants (MLAs) into PHY 241 (Computational Physics), aiming to cultivate a more effective, active, and productive learning environment. The course encompasses five key components: (i) transforming physical models into Python code, (ii) breaking down complex models into manageable computational tasks, (iii) selecting appropriate algorithms and computational tools for generating solutions, and (iv) extracting valuable physical insights from computed results. Previously, these components were predominantly conveyed through traditional lectures, where student engagement was limited to sporadic questions. This poster highlights the impact of MLAs in promoting in-depth discussions within small groups, augmenting students' proficiency in Python coding and debugging, and fostering the development of essential technical computing skills, such as data processing and visualization. By incorporating MLAs, the learning experience in PHY 241 transcends passive information absorption, empowering students to actively engage with course content and collaboratively tackle computational challenges.

P9. **Scaffolding Data Literacy Learning in SMS 201 Biology of Marine Organisms: Faculty Course Modification Incentive Grant and Maine Learning Assistant Program**

Dr. Sara Lindsay

SMS 201 Biology of Marine Organisms is a large enrollment introductory course required for Marine Science majors and taken by other science and science education majors at the University of Maine. Beginning in 2017 with support from a Faculty Course Modification Incentive Grant and undergraduate Maine Learning Assistants, I have worked to incorporate active learning strategies in lectures and to engage students in working with authentic data related to core concepts in marine biology. Students engage with data in different ways during class, for example through turn & talk discussions, "clicker" questions, written notecard reflections and longer data activities. In 2021 and 2022 students seemed to struggle with interpreting and describing data presented in different formats and with using those data to make predictions. Thus, my goal in 2023 was to incorporate at least one data-related question in every class meeting and to specifically scaffold working with data presentations that students struggled with on exams. Comparing student performance on matched exam questions from 2021 and 2023 suggests this more intentional scaffolding may have contributed to better student outcomes.

P10. **STEM Large Enrollment Course Engagement: ERS 101**

Dr. Alice M. Doughty

Over the past 4 semesters, I altered the types and number of assessments in ERS 101: Introduction to Earth Sciences to see their impact on class attendance, final grades, student questions, and the general feeling of the lecture learning environment. In this poster, I will outline the changes I made and the impacts I noticed as well as future changes I hope to make for the fall. This past spring, for example, by including 5 in-class quizzes, I noticed an increased sense of stress in the students during lecture (photographing slides and sketches), but fewer students failed the course.

Session E: Talks

Tuesday, 8:55–9:25 a.m.

Room	Title	Presenter(s)	Strand
Wells 1	**The Power of Unit Fractions**	Dr. Franziska Peterson	Using Models to Build Understanding
Wells 2	**Exploring and Characterizing Student Reasoning Trajectories in Physics using Dual-Process Theories of Reasoning***	Em Sowles	Building Skills through Research Learning and Authentic Problem Solving
Wells 3	**Authentic Ecological Research for 7th Grade Students Using Crab Traps**	Monica Wright	Engaging Students in Inquiry and Authentic Research Outdoors

E-T1. **The Power of Unit Fractions**

Fractions are a challenging concept to master. Many students remember some procedure when working with fractions, but do not know why it works, and even if they remember a procedure, it is often remembered or applied incorrectly. Helping students develop a good understanding of unit fractions can create a more robust foundation for manipulating all other fractions. A unit fraction 1/b is one part of a decomposition of the number 1 into b equal shares (e.g., 1/4 is one part of a decomposition of 1 into 4 equal shares). So, the fraction 5/4, for example, is composed of 5 unit fractions, namely, five fourths. Combining the use of unit fractions with multiple visual representations and hands-on manipulatives can further enhance students' fraction reasoning skills. In this talk I will present the use of unit fractions with visual representations, such as pattern blocks, tape diagrams, and double number lines and how these visuals can help to address common incorrect ways of thinking.

E-T2. **Exploring and Characterizing Student Reasoning Trajectories in Physics using Dual-Process Theories of Reasoning***

Discipline-based education research has been instrumental in improving the learning and teaching of STEM. However, recent research in physics has shown that students who demonstrate the understanding and skills necessary to answer one question will often answer inconsistently on an analogous question. Such inconsistencies can be explained using dual-process theories of reasoning, in which process 1 generates a provisional mental model, and then process 2 may or may not analyze that provisional model. Students may thus follow one of a variety of reasoning trajectories as they answer a question. To date, little research has been done to examine students' specific reasoning trajectories. As part of a larger project to support student reasoning, we have established

a methodology for identifying and characterizing these reasoning trajectories. Students are first served a qualitative physics question followed by a set of metacognitive prompts about their reasoning on that question. In this talk, we present recent results from different physics contexts and implications for research-based instructional materials in STEM more broadly.

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E-T3. **Authentic Ecological Research for 7th Grade Students Using Crab Traps**

Environmental DNA (eDNA) is an emerging tool used for monitoring environmental Since 2015, each fall, all Bath Middle School 7th graders have learned ecosystem content standards through inquiry and authentic research on green crabs from three different sites using crab traps. Through this project, students in science class learn necessary background knowledge, ecology protocols, collect and analyze data, and ask questions based on patterns in the data. Students publicly communicate their research through science posters at a community event and also submit research articles to Findings in the Field journal. Community partners are essential, notably the Kennebec Estuary Land Trust and the Gulf of Maine Research Institute. This is a sustainable learning experience even with administration and teacher turn-over. This talk will include details of the Bath Middle School green crab trap project and suggestions to replicate a long-term ecological study in another school

Session F: Talks

Tuesday, 9:30–10:00 a.m.

Room	Title	Presenter(s)	Strand
Wells 1	**The SunRule: A Device That Uses Sunlight to Perform Multiplication**	Dr. Eric Pandiscio	Using Models to Build Understanding
Wells 2	**When Math Helps Us Live Better**	Dr. Giovanna Guidoboni	Using Models to Build Understanding
Wells 3	**Think Universally: Implementation of Universal Design in an Undergraduate Chemistry Course**	Dr. Jennifer Newell	Universal Design for Learning to Support Equity in Authentic Research

F-T1. **The SunRule: A Device That Uses Sunlight to Perform Multiplication**

This presentation will describe the design and construction of a device that uses the sun's parallel rays to perform multiplication. Multiple versions have been developed, including a bronze sculpture that is the result of a collaboration between mathematics educators and sculptors from the University of Maine. The talk will share insights into using physical manipulatives that highlight the continuous nature of multiplication, emphasize the ability to use a single device that works with integers and rational numbers, and places authentic value on having students engage with a natural phenomenon in an outdoor setting. Photos and physical models will accompany the talk.

F-T2. **When Math Helps Us Live Better**

Mathematics provides a universal language that allows formalization and quantification of concepts applicable to basically everything, from social networks to engineering and medicine. Mathematical models can really serve as dry labs to deepen the understanding of how complex systems behave. In this talk, we will see how relatively simple math techniques can help design sensors to monitor the function of the cardiovascular system non-invasively or to prevent irreversible vision loss. As my middle schooler would say "Math helps because you can say that one plus one is two, not just a little more," which basically means quantifying concepts. Also, she would say "Mom, you basically use math to hack the human body." In this talk, we will see some examples of how math can be used as a dry lab for real problems and how that could translate in school activities.

F-T3. **Think Universally: Implementation of Universal Design in an Undergraduate Chemistry Course**

Environmental DNA (eDNA) is an emerging tool used for monitoring environmental Want a more inclusive course? Universal Design is an educational framework that seeks to engage and accommodate all learners regardless of background or ability. Do you want to know how to implement Universal Design? Come join me in discussing practical Universal Design approaches that instructors can use in any classroom setting. This talk will then outline implementation and evaluation of Universal Design approaches in a first-year General Chemistry, Organic, and Biochemistry (GOB) course.

Session G: Workshops

Tuesday, 10:15–11:45 a.m.

Room	Title	Presenter(s)	Strand
Wells 1	**Designing and Implementing Portfolio Assessments in a STEM Classroom**	Jenn Dunham Kate Dumont Sam Ward Jen Wright	Building Skills through Research Learning and Authentic Problem Solving
Wells 2	**Introduction to Field Research Methods for Teachers**	Kyle Amergian Robyn Walker-Spencer	Building Skills through Research Learning and Authentic Problem Solving
Wells 3	**Environmental Learning in Maine: Current Status and Vision for the Future**	Alexandria Brasili	Engaging Students in Inquiry and Authentic Research Outdoors

G-W1. **Designing and Implementing Portfolio Assessments in a STEM Classroom**

Portfolios are collections of student work that demonstrate skills and achievements over time. In a STEM classroom, portfolios can help develop critical thinking, problem-solving, and communication skills. Portfolios can support student self-assessment and reflection, allowing students to take ownership of their learning. This workshop will provide practical tips for implementing portfolios in a STEM classroom and strategies for addressing potential challenges. Facilitators will guide you through the process of brainstorming portfolio ideas tailored to your classroom needs. By the end of this workshop, you can expect to have a draft portfolio assessment ready to use with your students.

G-W2. **Introduction to Field Research Methods for Teachers**

Through hands-on activities in the classroom and outdoors, teachers will learn how to help students choose the best unbiased sampling methods for student-generated research questions out in the field. Teachers will develop the skills of using quadrats, transects, random sampling, percent coverage, and the importance of making observations without bias.

G-W3. **Environmental Learning in Maine: Current Status and Vision for the Future**

In 2022, Teach ME Outside (TMO) launched a new Census of Community-Based Outdoor and Environmental Learning (CBEL) in Maine. The survey initiative captured data from 920 educators, administrators, and leaders about the state of environmental education across Maine and builds on the comprehensive baseline report from 2019. At the same time, the Maine Environmental Education Association worked with the Maine Department of Education to revise and renew the Maine Environmental Literacy Plan (ELP).

This workshop will introduce CBEL data as the current state of environmental learning in Maine and the ELP as the vision for the future. Participants will reflect on how recent data align with priorities in the ELP and allow us to gain valuable stakeholder input on actionable steps to support our field and move toward more equitable access for all Maine youth to high-quality environmental learning opportunities.

TMO is a project of MMSA, Maine Environmental Education Association, and Nature Based Education Consortium.

Keynote Presentation 2

Tuesday, 12:45–1:30 p.m.

Dr. Jenn Page
Maine Department of Education, Office of Innovation

Supporting Conditions for Equity, Inclusion, and Belonging in STEM Experiences

***Strand**: Universal Design for Learning to Support Equity in Authentic Research*

Place-based learning provides an interdisciplinary approach to STEM experiences that is learner centered, inquiry based, and uses the student's community as their classroom. While 'place' provides a locational context (local to global) it also provides a relational context, helping students situate themselves within the world and how they are interconnected to other beings and systems. This approach is deeply supported by the Universal Design for Learning (UDL) framework, providing a strong foundation for students to personalize their learning through authentic research pathways and the design thinking process. We will take time during this session to explore how organizing STEM education around place-based learning within a UDL framework can promote positive student outcomes and create more meaningful experiences for everyone involved.

Session H: Workshops

Tuesday, 1:45–3:15 p.m.

Room	Title	Presenter(s)	Strand
Wells 1	**Supporting Place-Based Lesson Design and Instruction**	Leonard Kenyon Becky Hallowell	Community-Based Strategies for Inclusivity and Deepening STEM Learning for All Students
Wells 2	**Aligning Impact and Intent: Applying Universal Design for Learning to Create More Equitable and Inclusive STEM Experiences**	Dr. Jenn Page	Universal Design for Learning to Support Equity in Authentic Research
Wells 3	**Supporting Scientific Literacy and Observation through the Nature Note**	Catherine Bursk	Engaging Students in Inquiry and Authentic Research Outdoors

H-W1. **Supporting Place-Based Lesson Design and Instruction**

Educators will experience how 3D learning in any curriculum can be made into 5D learning if they have the pedagogical framing that identifies both phenomena types and supports phenomena adaptation. Specifically, place, student interests, and identities provide motivation to engage in science sensemaking.

Educators will learn to identify phenomena types, select related phenomena and use students' place, interests, and identities to promote equitable learning experiences. These pedagogical tools and framing will help educators turn 3D, NGSS-aligned phenomena-based units into 5D learning experiences.

H-W2. **Aligning Impact and Intent: Applying Universal Design for Learning to Create More Equitable and Inclusive STEM Experiences**

Universal Design for Learning (UDL) is a powerful framework that was created to help eliminate inequities by focusing on developing expert learners: teaching students how to learn, how to set goals, and how to share what they know to reach their goals in authentic, meaningful ways. UDL provides a natural grounding to support the design and implementation of accessible research opportunities for all students, not only those ‘we’ determine are most capable of being ‘successful’ in authentic research. This session will introduce participants to the UDL framework, create space to reflect on ourselves, our students, and our systems, and allow time to plan next steps so that our impact as educators and mentors more closely matches our intent to be as equitable as possible in our work.

H-W3. **Supporting Scientific Literacy and Observation through the Nature Note**

Scientific observations are fundamental to the work of scientists. The Nature Note, a submission type for the Gulf of Maine Research Institute's online journal of middle school environmental research, provides an opportunity for students to hone their skills of scientific observation, literacy, and communication. Educators will learn how to support student scientists to share compelling and noteworthy observations in a Nature Note. Students combine background knowledge to enhance observation and communicate their findings in writing, bridging content knowledge to the world around them. During the training we will engage in the student experience to better understand student needs and perspectives.

Dr. Joan Ferrini-Mundy

President of the University of Maine and University of Maine at Machias
Vice Chancellor for Research and Innovation for the University of Maine System
Faculty Member of the Center for Research in STEM Education
umpresident@maine.edu

Joan Ferrini-Mundy became the 21st president of the University of Maine (UMaine) and its regional campus, the University of Maine at Machias (UMM) in July 2018. In 2021, she was also appointed University of Maine System (UMS) vice chancellor for research and innovation where she leads a formalized effort to make UMaine's research infrastructure accessible to and supportive of all universities and faculty in the system. In July 2020, to ensure foundational inclusive excellence, Ferrini-Mundy appointed a 30-member Council on Diversity, Equity, and Inclusion to advise UMaine and UMM campus leadership and operationalize their commitment to the core values of diversity, equity and inclusion.

Prior to July 2018, she was the chief operating officer of the National Science Foundation (NSF) after leading NSF's Directorate for Education and Human Resources for six years.

Her distinguished career spans the fields of mathematics education, STEM education and policy, teacher education, and research administration. Ferrini-Mundy has published more than 100 articles and has mentored 10 doctoral students.

After earning her Ph.D. in mathematics education from the University of New Hampshire (UNH) in 1980, Ferrini-Mundy was a postdoctoral associate there, then a visiting assistant professor in the Department of Mathematics at Mount Holyoke College, where she co-founded the SummerMath for Teachers program. She returned to UNH as an assistant professor of mathematics and rose to the rank of full professor.

On leave, Ferrini-Mundy served as director of the Mathematical Sciences Education Board at the National Academy of Sciences, and subsequently joined the mathematics and teacher education faculty of Michigan State University (MSU) and served as associate dean for science and mathematics education in the College of Natural Science and director of the Division of Science and Mathematics Education.

Her numerous awards and recognitions include the U.S. Senior Executive Service Presidential Rank Award of Distinguished Executive, MSU's University Distinguished Professorship, election as a Fellow of the American Association for the Advancement of Science and of the American Mathematical Society, and the 2020 recipient of the NIFA/APLU Seaman A. Knapp Award in recognition of her leadership and contributions to food and agricultural sciences.

Ferrini-Mundy is a member of the National Academies Board on Higher Education and the Workforce. She is the chair of the Conference Board of the Mathematical Sciences, and serves on the boards of Maine Public, Maine Center Ventures, Maine and Company, and the Maine Department of Economic and Community Development Executive Steering Committee. She is an ex officio board member of the University of Maine Foundation. She is a board member of the Association of Public Land-grant Universities and Co-PI of a $240 million dollar gift from the Harold Alfond Foundation.

Dr. Susan McKay

Professor of Physics
Director of The Center for Research in STEM Education
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Susan joined the faculty in the Department of Physics and Astronomy at the University of Maine (UMaine) in 1986. There she became a full professor and served as Department Chair for six years, conducted research in theoretical condensed matter physics, and taught many of the department's graduate physics courses. In 2001, she led a small group of STEM and STEM Education faculty to establish the RiSE Center and the research-based Master of Science in Teaching (MST) Program at UMaine, focused on education research to improve teacher preparation. Since then, she has served as the center's Director, building strength in STEM education research and advancing evidence-based teaching and learning in the STEM disciplines in Maine schools and at UMaine. She was the Principal Investigator of the Maine Physical Sciences Partnership and the Maine Elementary Sciences Partnership, which led to the formation of the Maine STEM Partnership at the RiSE Center, a statewide STEM education improvement community involving more than 120 Maine school districts and the Maine Department of Education as partners. She was the Principal Investigator of an NSF Teaching Fellowship Program, which has recruited, prepared, and supported new science and mathematics teachers in Maine's rural, high-need districts, tapping into the leadership and expertise of experienced Maine teachers. This program is being continued as the RiSE Center Teaching Fellowship Program. She is also the Principal Investigator of an NSF STEM+C award that has formed a research-practice partnership to integrate computer science into middle school science. Research done as part of this grant provides knowledge about the supports for teachers that are needed to successfully accomplish this integration. She is also the Principal Investigator of an NSF ITEST grant, bringing authentic research experiences to students along Maine's coast and building strong community connections, and a USDA multi-institutional partnership to bring active learning and enhanced student engagement to food science and engineering courses. Under Susan's leadership, the RiSE Center has grown to include 21 UMaine faculty across multiple disciplines, 8 accomplished professional staff with expertise in STEM education, and more than 20 graduate students. Over the years, she has been awarded more than $20 million in federal and state competitive grants to support STEM education research, which strengthens learning for students and provides professional learning experiences for current and future teachers. These accomplishments were recognized in 2019 with the University of Maine's Presidential Public Service Achievement Award.

Susan received her Bachelor's (Princeton University), her Master's (University of Maine), and her Ph.D. (Massachusetts Institute of Technology) in physics. She completed requirements for secondary teaching certification in mathematics and physical sciences through Princeton University's Teacher Preparation Program and worked as an engineer before joining the faculty at UMaine. Her research interests in teaching and learning support the goal of providing a rigorous and exciting education in the STEM disciplines for all Maine students, including those from groups currently under-represented.

Helene I. Adams
Science Department, Cheverus High School
adams@cheverus.org
Poster 4

Helene Adams is a science teacher at Cheverus High School in Portland, Maine. Helene has 17 years of classroom teaching experience, primarily teaching chemistry. A member of the Maine STEM partnership community, Helene is an early career teacher mentor and has presented workshops on Active Learning Strategies, Assessment for Learning, Equitable Grading Practices, and Phenomena Driven Instruction. Helene serves as the District II Director to the Council of the National Science Teaching Association representing Maine, New Hampshire and Vermont.

Helene's passion is supporting and collaborating on transformative teaching practices that engage all students and have a high impact on student learning.

Kyle Amergian
Education Manager, Hurricane Island Center for Science and Leadership
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Workshop G-W2

Kyle Amergian is the Education Manager at Hurricane Island and has an extensive background in marine science and experiential education. She earned her BS from Eckerd College in Marine Science and continued her education at USF, earning her MS in Biological Oceanography.

Kyle's passion for the ocean mostly lies on (or within) the ocean floor - from lobsters to Foraminifera, she can tell you anything you want to know about benthic critters. She has a diverse background in experimental education, having worked with students of all ages and teaching all aspects of science in and outside of the classroom. Helping students find what they are passionate about in the natural world and inspiring them to discover information through student-led research is Kyle's favorite thing about being an educator.

Dr. Edward Bernard

Program Coordinator & Senior Lecturer of Microbiology, University of Maine
edward.bernard@maine.edu
Talk C-T2

Dr. Edward Bernard received his B.S. in Biology and Ph.D. in Biological Sciences from the University of Maine in 2007 and 2012, respectively. Joining the University of Maine faculty as a Lecturer in 2014, Dr. Bernard has taught courses in Microbiology, Infectious Disease, Genetics, and Organic Chemistry and researches suppression of pathogenic bacteria in different waste streams. Additionally, he serves as Program Coordinator for the Department of Molecular & Biomedical Sciences and advises all first-year students in the Microbiology, Biochemistry, Molecular & Cellular Biology, and Medical Laboratory Sciences degree programs.

Alexandria Brasili

Maine Mathematics and Science Alliance (MMSA)
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Workshop G-W3

Alexandria Brasili is a Research Associate at the Maine Mathematics and Science Alliance (MMSA). She holds a Master's degree in Science Education from Oregon State University and a Bachelor's degree in Biology from Bowdoin College. She is interested in supporting equitable access to environmental education across Maine and effective partnerships between schools and nonformal organizations. She has presented at national conferences and recent work can be found in journals such as Connected Science Learning and Environmental Education Research.

Catherine Bursk

Gulf of Maine Research Institute
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Workshop H-W3

Catherine Bursk is a Science Instruction Specialist at the Gulf of Maine Research Institute where she develops curriculum and supports educators around integrating climate and data literacy. Catherine also coordinates the online, environmental journal Findings from the Field, written and reviewed by middle school students. Catherine received a liberal arts degree at Sarah Lawrence College, graduated summa cum laude from the University of Southern Maine with a Bachelor of Science in biology, and was a Noyce Teaching Fellows at USM where she was certified in secondary life and physical science. Catherine formerly taught biology, marine ecology, alternative education, and earth and space science for both middle and high school students in the Portland Public School District for the last decade. Catherine believes in engaging students where they are and sharing her love and awe of nature.

Hazel Cashman

7th grade life science teacher, Lyman Moore Middle School
cashmh@portlandschools.org
Poster 1

Hazel Cashman is a 7th grade life science teacher, Lyman Moore Middle School in Portland, Maine. She is a graduate of the Master of Science in Teaching (MST) program at the RiSE Center, finishing the program in August of 2022. After graduating in 2018 from Bates College with a degree in geology and anthropology, she worked as an Earth/Environmental science experiential educator before coming to UMaine to get her Physical Science teaching certification for grades 7-12. Her research in the MST program focused on student science identity in a unique integrated science and social studies learning context, incorporating Indigenous and Western science.

Rebecca Clark Uchenna

STEM Education Specialist, Maine Mathematics and Science Alliance (MMSA)
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Poster 2

Rebecca combines her passion for conservation, science and education into a unique role at Maine Mathematics and Science Alliance. She joined MMSA December 2018 and is currently working on the citizen science project, WeatherBlur, and is co-coordinating the Maine State Science Fair through the Reach Center at MMSA. Prior to joining MMSA, Rebecca spent five and half years at the Island Institute where she oversaw several STEM educational programs and helped support island and coastal schools. She also helped give fishermen and coastal communities a stronger voice in the ocean planning process as well as educate fishermen and community members about shellfish and kelp aquaculture. Rebecca has also worked as a consultant for the Green Fire Productions film team. She worked to develop a secondary educational curriculum focused on the award-winning Ocean Frontiers film series by Green Fire Productions, portraying how unlikely allies are working together to find solutions that benefit ocean ecosystems and blue economies.

Grace Coffe

Brewer High School, RiSE Center Teaching Fellowship
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Workshop A-W1, Talk C-T1

Grace Coffe graduated the University of Maine with a BS in Biology; she immediately after did an internship at the Jackson Lab studying reproductive biology and infertility. In August 2018, she graduated with a Master of Science in Teaching from the University of Maine. She has been teaching at Brewer High School for 6 years. She teaches physics and STEM courses. She is the advisor of the Student Council. Grace prides herself on building strong relationships with her students and fostering an emotionally safe space for all. Grace has been involved with the University of Maine RiSE Center in varying capacities over the years including her current membership in the RiSE Center Teaching Fellowship Program. She has a large family and looks forward to spending this summer exploring with them.

Kelsey E. Davis

STEM Education Research Associate, RiSE Center, University of Maine
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Poster 6

Kelsey Davis is a part of the research and evaluation team at the RiSE Center. She works with both quantitative and qualitative data collected by the RiSE Center to directly support the work of the Research & Evaluation Coordinator and various research teams. She is also currently pursuing an M.S. in Aquaculture and Aquatic Resources from the University of Maine. Before working at the RiSE Center, Kelsey worked full time for the University of Maine Honors College as an Associate and as the Coordinator of the Cohort Compass Program.

Dr. Alice M. Doughty

School of Earth and Climate Sciences, University of Maine
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Poster 10

I am the undergraduate program coordinator for the School of Earth and Climate Sciences (ECS) and I teach a large enrollment STEM course (ERS 101: Introduction to Earth Sciences) each semester with ~180 students, 9 lab sections, 3 teaching assistants and 2 Maine Learning Assistants. The students represent all classes, all colleges, and a range of math and science backgrounds and interests.

Although my traditional research has focused on mountain glaciers and ice ages, I am now focusing more on how students learn (not just memorize) Earth science material. The rocks and landscape tell a story and students should be able to start telling parts of Maine's geologic story by the end of the semester. In addition to learning content, I provide activities for students to develop group-working skills and build their UMaine sense of community through this course.

Dr. Frank Dudish

UMaine Department of Physics and Astronomy & RiSE Center
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Workshop A-W2

I am a faculty member in the Department of Physics and Astronomy where I teach introductory and advanced physics courses as well as advanced astronomy courses. I am particularly interested in how students learn in undergraduate laboratory classrooms and how we can design the laboratory experience to better reflect how science and research work in the professional world. I am also the director of the Maine Science Olympiad Tournament; please feel free to talk with me if you are interested in forming a team at your school!

Kate Dumont

Bonny Eagle High School, MSAD 6, RiSE Center Teaching Fellowship
kdumont@bonnyeagle.org
Workshop G-W1

Kate Dumont is in her 16th year in education, she has been at Bonny Eagle High School for the last decade of her teaching career. As part of the team there, she had the opportunity to be part of an interdisciplinary cohort that rewrote the district graduation standards from content-based to being based on the science practices highlighted in the Next Generation Science Standards (NGSS). Though she has been a Life Science teacher for most of her educational journey, the last 5 years have brought her into the world of curriculum and professional development for the high school staff at Bonny Eagle, in her role as an instructional coach. She is making the jump back into the classroom for the 2023-2024 school year.

Jenn Dunham

Old Town High School, RSU 34, RiSE Center Teaching Fellowship
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Workshop G-W1

Jenn Dunham has just completed her sixth year as a mathematics teacher at Old Town High School. She earned her B.A. in English and Mass Communication from the University of Maine in 2007. After spending years working with educators in the world of grant administration, she decided she'd much rather be doing what they were doing! She earned her B.A. in Mathematics from the University of Maine in 2015 and joined the RiSE Center the same year. Though in the classroom full-time, she continues to work on her master's thesis on teacher attitudes and knowledge around high school geometry and algebra. She lives in Bangor with her spouse, their 4-year-old child, and their 11-year-old cat.

Jim Fratini

Hermon Middle School, RiSE Center Teaching Fellowship
james.fratini@schools.hermon.net
Workshop D-W2

I am a 35-year veteran teacher currently teaching 8th grade physical science and technology at Hermon Middle school.

Jenn Fronczak

Professional Learning Specialist, RiSE Center, University of Maine
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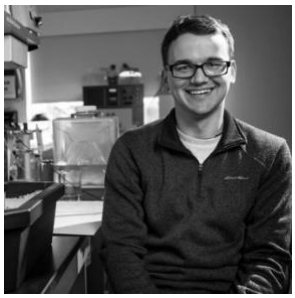
Talk C-T1

Jenn Fronczak provides professional learning offerings across the STEM disciplines. She works with partnering school districts to provide direct, specialized mathematics professional learning that includes conducting analysis of student data to support teacher's iterative reflective teaching practices. Jenn supports several grants including the ITEST grant which is a model program to engage students in authentic, technology-infused coastal research and monitoring and the USDA-HEC grant aimed at enhancing learning outcomes in Food Science and Food Engineering courses using student-centered approaches. Jenn also contributes to the RiSE Center (formerly NSF) Teaching Fellowship Program as a mentor teacher.

Prior to working for the RiSE Center, Jenn spent almost 30 years working in public education at every grade K–Adult Education. She is a National Board Certified Teacher in the area of Early Adolescent Mathematics. She is a national speaker contributing mathematics, technology, and place-based workshops to the National Council of Teachers of Mathematics (NCTM) as well as various state's conferences. She currently lives in Danforth, Maine.

Cameron Fudge



Sumner Memorial High School, RiSE Center Teaching Fellowship
cfudge@rsu24.org
Talk B-T1

Cam Fudge is a high school physical science teacher who just finished his 3rd year teaching Senior at Sumner Memorial High School in Sullivan, Maine. Cam has taught a variety of courses including AP chemistry, general chemistry, physics, and marine science. Additionally, Cam is the student SCUBA diver supervisor and e-sports coach. He has also participated in districtwide renewable initiatives through the RREV program and created professional development workshops within his district.

Daniel Gibson

Mt. Ararat High School, MSAD 75
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Poster 4

Dan has just finished his 8th year of teaching science and his 6th year at Mt. Ararat High School. Dan primarily teaches Physics and AP Environmental Science but has also taught Physical Science. He is currently preparing to teach Engineering classes next year. Dan has been working with the RISE Center since 2013.

Dr. Giovanna Guidoboni

Professor and Dean, Maine College of Engineering and Computing, University of Maine
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Talk F-T2

Giovanna Guidoboni is the inaugural Dean of the Maine College of Engineering and Computing at the University of Maine. She previously served as associate dean for research and professor in the College of Engineering at the University of Missouri, and is founder and manager of Gspace LLC, which provides modeling and computational solutions for complex problems in engineering and life sciences. Guidoboni also serves as co-founder and co-editor-in-chief of the journal Modeling and Artificial Intelligence in Ophthalmology. She holds a doctorate in mathematics and both a bachelor's and master's degree in materials engineering from the University of Ferrara.

Becky Hallowell

Fourth Grade Teacher, Wiscasset Elementary School, Wiscasset School Department
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Workshop H-W1

Becky Hallowell has been teaching grades K-4 for 28 years. She has a bachelor's degree in early childhood education from the University of Maine Farmington and a master's degree in educational leadership from the University of Southern Maine. She has been on a continual search to find opportunities to teach children outside while integrating all the curricular areas. After creating an outdoor classroom on the bank of the Sheepscot River, she joined the PeBLES2 project with MMSA and is excited to incorporate place-based learning into her practice across the curriculum.

Nick Innis

Mt. Ararat High School, RiSE Center Teaching Fellowship
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Workshop A-W1

Nick Innis has just finished his 5th year of teaching high school science at Mt. Ararat High School in Topsham, Maine. Nick primarily teaches 9th grade Earth and physical science, and has also developed Wildlife and Marine science electives, geared towards 11th and 12th grades. Nick also helped to develop an introduction to social emotional learning professional learning opportunity that ran its first session this past spring.

Leonard Kenyon

Maine Mathematics and Science Alliance (MMSA)
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Workshop H-W1

Leonard Kenyon has spent three decades in the field of science education. He started his career as a marine research scientist, studying critically endangered sea turtles on both the East and Gulf coasts and teaching marine biology. He then spent the following decade as a middle school science teacher, piloting the inception of the IQWST (Investigating and Questioning Our World Through Science and Technology) curriculum. For the last ten years, he has been a biology faculty member, teaching pre-service teachers biology and how to teach science education. Currently, he is a STEM Education Specialist at the Maine Mathematics and Science Alliance (MMSA), where he designs curriculum and provides professional development for educators in Maine and nationwide.

Dr. Karl Kreutz

School of Earth and Climate Sciences and Climate Change Institute, University of Maine
karl.kreutz@maine.edu
Talk B-T2

Karl Kreutz is the Director of the School of Earth and Climate Sciences and a Professor in the Climate Change Institute at the University of Maine. He earned BA and MS degrees in Geological Sciences, a PhD in Earth Science (Geochemical Systems), and was a postdoctoral fellow at the Woods Hole Oceanographic Institution before coming to the University of Maine. He is an Earth scientist who uses biogeochemical tools to study the climate system. He focuses most of his research effort on two of the most important aspects of the Earth system – the water and carbon cycles. He is particularly interested in how those cycles respond to a warming climate – today and in the past. His work combines modern observation, climate reconstructions, and modeling. Using those approaches, he studies the processes, feedbacks, and tipping points within the water and carbon cycles, and uses that knowledge to inform society's climate resilience.

Dr. Sara Lindsay

School of Marine Sciences & RiSE Center, University of Maine
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Poster 9

Sara Lindsay teaches and conducts research in the School of Marine Sciences and the RiSE Center at the University of Maine. She earned a Bachelor's degree in Biology from Smith College and a Ph.D. in Biology/Ecology from the University of South Carolina. A past winner of the University of Maine Presidential Outstanding Teaching Award, she integrates inquiry, and data literacy activities, as well as perspectives from the arts and humanities into her undergraduate and graduate courses to engage students in deeper learning about marine biology, the process of science and biology teaching methods. At the RiSE Center, she serves as Assistant Director, co-leads the Faculty Course Modification Incentive Grant-Maine Learning Assistant (FIG-MLA) and works with K-12 teachers as part of several Research Practice Partnerships. She has two grown daughters, a friendly golden retriever, and enjoys walking and kayaking the beautiful Maine woods and waters.

Andrew Myers

Old Town High School, RiSE Center Teaching Fellowship
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Talk B-T1

Andrew Myers has been in education for over 30 years. He is currently teaching concurrent enrollment Statistics, Precalculus, and College Algebra, and AP Computer Science at Old Town High School. Andrew has spent the last 8 years mentoring new teachers through the RISE center. He believes building community in the classroom is the key ingredient to learning for all.

Dr. Jennifer Newell

Department Molecular and Biomedical Sciences and RiSE Center, University of Maine
jennifer.newellcaito@maine.edu
Talk C-T2, Talk F-T3

Jen Newell is a Senior Lecturer in Biochemistry at the University of Maine who has been teaching for 10 years at the collegiate level. She obtained her PhD in Biochemistry from the University of Rochester and completed four years post-doctoral training with a teaching certificate from Vanderbilt University. Her teaching philosophy focuses on active learning, ungrading, and universal design. In her time at the University of Maine she has continually developed her teaching approaches through the support of the RiSE Center and the Center for Innovation for Teaching and Learning. Her pedagogical research focuses on the effect of metacognition, growth mindset, sense of belonging, and self-directed learning in course-based undergraduate research experiences. Additionally, she has collaborated with Edward Bernard to create chemistry focused digital learning modules. Since 2023, she began working with a team of educators lead by Julia McGuire on a Gateways to Success project to increase first-year undergraduate success. In her spare time, she loves to garden and spend time with her three young girls.

Dr. Fernando E. Nieto-Fernandez

Professor of Biology, SUNY Old Westbury
Science and Technology Entry Program, PI and Co-Director
nietof@oldwestbury.edu
Keynote 1

I am a Professor of Biology, and Co-Director of the Science and Technology Entry Program (STEP) funded by the New York State Education Department. I am a Microbial Ecologist passionate about broadening participation of Underrepresented Minority (URM) students in research at the secondary and undergraduate education levels. In my eleven years as chair of the Biological Sciences Department I have led the implementation of evidence-based pedagogy, aligning the curriculum with national undergraduate biology education standards outlined in Vision and Change in Undergraduate Biology Education: A Call to Action (2011) supported by the Partnership for Undergraduate Life Science Education (PULSE). As Co-Director of STEP I am responsible for developing and implementing STEM programs to enhance the experience of our young STEP scholars. Our approach is summarized in our *TIME model*, **T**hematic **I**nquiry-based with **M**entorship and **E**nhancements.

Sarah O'Malley

Corning School of Ocean Studies, Maine Maritime Academy
sarah.omalley@mma.edu
Workshop D-W3

Sarah O'Malley (she/her) is an Assistant Professor of Marine Biology in the Ocean Studies Department at Maine Maritime Academy. She teaches courses in first year biology, marine invertebrate zoology and environmental sustainability, as well as the senior research capstone course. In addition to her work at Maine Maritime, she volunteers with the Maine Master Naturalist Program coordinating and teaching naturalist training courses across the state. Prior to her work at MMA, she was the summer program coordinator at the Marine Environmental Research Institute, and developed a summer marine science internship program for high school students, and was a lead instructor for the Summer Field Studies for Children program through College of the Atlantic. Sarah earned a B.S. in Natural Resources and an M. Ed. In Science in Environmental Education, both from the University of Maine. Her current research and passion focuses on the restoration of river herring in the Bagaduce River.

Dr. Jenn Page

Maine Department of Education, Office of Innovation
jennifer.page@maine.gov
Keynote 2, Workshop H-W2

Jenn Page is the Project Manager for the Maine Online Open-Source Education (MOOSE) project with the Maine Department of Education. Jenn graduated from UMaine's School of Marine Sciences and Honors College before receiving her PhD from Georgia Tech. She taught and mentored student research for 5 years at Bangor High before spending 6 years as the Director of Education at the Hurricane Island Center for Science and Leadership. Jenn specializes in designing transformative, place-based student learning experiences and is adept at facilitating others to do the same. Outside of MOOSE, she works as a sustainable leadership strategist, helping educators and other leaders create sustainable systems change without sacrificing their wellness in the process. Jenn also serves on the Board of the Maine Environmental Education Association, the University of Maine Honors College, and is an adjunct instructor with Antioch University. She lives in midcoastal Maine on the unceded Territory of the Waponaki Confederacy (Panawahpskek Nation) with her husband and their cat, Loki.

Dr. Eric Pandiscio

School of Learning & Teaching and RiSE Center, University of Maine
ericp@maine.edu
Talk F-T1

Eric Pandiscio teaches mathematics education courses for current and prospective K-12 mathematics teachers at both the undergraduate and graduate levels. His teaching comprises methods, content, and research courses. He has been part of numerous professional development projects and institutes, focusing on innovative curriculum, pedagogy and connections to state standards. He holds a Bachelor's degree in Economics from Brown University and a Masters and Doctorate in Curriculum & Instruction from The University of Texas at Austin. His research interests include the acquisition of proportional reasoning skills, the development of analytic and synthetic geometric ideas, and the connection between inductive and deductive thinking. Most recently he has designed

and created, in collaboration with colleagues in both mathematics education and sculpture, a device that utilizes the sun's rays to enact a continuous model of multiplication.

Dr. Franziska Peterson

Department of Mathematics & Statistics and RiSE Center, University of Maine
franziska.peterson@maine.edu
Talk E-T1

Franziska Peterson is an Assistant Professor of Mathematics Education at the University of Maine in the Department of Mathematics and Statistics and the Center for Research in STEM Education. Her research centers on quantitative reasoning in interdisciplinary contexts. She has been collaborating with faculty from the RiSE Center and is part of the education team on the NSF EPSCoR Track II grant (INSPIRES) and a Co-PI on the NSF ITEST grant. Both grants have a focus on quantitative reasoning in context and connecting teachers and students to locally relevant research and datasets, broadening and deepening STEM engagement. Besides teaching mathematics content and educational courses, Dr. Peterson engages in providing professional learning experiences in form of content immersions for practicing elementary teachers. When developing and leading professional learning opportunities, she emphasizes the connections between mathematical content areas, between mathematics and other disciplines, and most importantly the K-8 progression of a mathematical concept.

Dr. Judith L. Roe

University of Maine at Presque Isle
judith.roe@maine.edu
Talk B-T3

Judith L. Roe has a M.S. degree in Genetics from George Washington University and a Ph.D. from Johns Hopkins University in Biochemistry (advisor, William J. Lennarz). She pursued postdoctoral research in Plant Genetics at the University of California, Berkeley in the laboratory of Patricia Zambryski. She worked as an assistant professor and research associate at Kansas State University, and co-managed a field site in Norwich, England for an NSF-FIBR project on plant adaptation. She is currently an associate professor at the University of Maine at Presque Isle, where she teaches General Biology, Plant Biology, Genetics and Biochemistry courses, and includes undergraduates in research projects on plant and animal DNA barcoding as well as organ regeneration in insects.

Reilly Romanoski

Mt. Blue Middle School, MSAD 9, RiSE Center Teaching Fellowship
rromanoski@mtbluersd.org
Talk B-T1

Reilly Romanoski has taught both math and science to 6th graders at Mt Blue Middle School for three years. Located in the Western Mountains of Maine, she takes advantage of the unique landscape of the area to help teach students a range of Earth Science topics. Reilly received both her bachelors and masters through the University of Maine at Orono, and has been affiliated with the RiSE Center and its degree program for the past 4 years as one of their NSF Fellows.

Christina Siddons

Research & Evaluation Coordinator, RiSE Center, University of Maine
christina.siddons@maine.edu
Poster 5

Chrissy Siddons supports diverse research and evaluation efforts at the RiSE Center, using a variety of qualitative and quantitative research methods to inform and support formative and summative evaluation of projects and programs. Additionally, Chrissy works with project leaders and stakeholders to communicate and disseminate results to support, inform, and strengthen integration of STEM education research into practice. Prior to joining the RiSE Center, Chrissy taught middle school science, researched heart tissue regeneration in zebrafish, and taught practical oceanography skills to undergraduates aboard sail training vessels in the South Pacific and Caribbean.

Amanda Sommi

Durham Community School, RSU 5
sommia@rsu5.org
Talk C-T3

Amanda Sommi is a practicing 7/8th grade science teacher at Durham Community School. She holds a Bachelor's degree in Biology and Environmental Studies from Tufts University, and a Master's degree in Teaching and Learning from Harvard Graduate School of Education. Amanda is passionate about using authentic inquiry to drive learning, and has redesigned DCS's science curriculum to further prioritize NGSS Science Practices.

Em Sowles

Department of Physics and Astronomy, University of Maine
emily.sowles@maine.edu
Talk E-T2

Em Sowles is a third year Ph.D. candidate in the physics department at UMaine. She received a B.S. in Astronomy and Astrophysics from the Ohio State University and is now working with MacKenzie Stetzer on applications of dual-process theories of reasoning in student physics thinking.

Laurie Spooner

Van Buren, MSAD 24, RiSE Center Teaching Fellowship
lspooner@msad24.org
Workshop A-W3

Laurie Spooner earned her Bachelor of Science in Forestry and Master of Science in Forestry at the University of Maine. She worked seasonally for the Maine Forest Service on the Forest Health Monitoring Program from 1994 to 2003. She has been an educator for more than 20 years with most of that time spent teaching a variety of high school science classes at Van Buren District Secondary School. She has participated in the NSF Teaching Fellows, INSPIRES, and Maine-eDNA. She received the Maine STEM Partnership Annual Award for Excellence at the Fall Summit in 2022.

Dr. MacKenzie Stetzer

Department of Physics and Astronomy and RiSE Center, University of Maine
mackenzie.stetzer@maine.edu
Poster 7

I am an Associate Professor in the Department of Physics and Astronomy at the University of Maine and a member of the Maine Center for Research in STEM Education. Much of my research in physics education focuses on student reasoning and metacognition in physics – particularly the role that the (domain-general) nature of human reasoning and decision-making plays when students are answering qualitative physics questions. My colleagues and I are working to leverage dual-process theories of reasoning (from cognitive science) to gain insight into inconsistent student performance on analogous physics questions and to develop interventions to better support student reasoning. I am also deeply involved in the preparation and professional development of graduate TAs, undergraduate LAs, K-12 teachers, and college instructors.

Lauren Swalec

Hermon Middle School, Hermon, Maine
lswalec5@gmail.com
Poster 3

Lauren has just finished her 5th year of teaching. She has taught high school math, but recently has been teaching 5th to 8th grade math at Hermon Middle School. Lauren has taught everything from 5th Grade Math to Honors Algebra II. Her free time is spent with her dog, Moose.

Amy Taylor

Science Department, Hermon High School, Hermon School Department
amy.taylor@schools.hermon.net
Poster 3

Amy has taught high school physical and life sciences for 26 years in Missouri and Maine. She currently teaches Biology and is the Science Department Head at Hermon High School in Hermon, ME. Amy also co-chairs her school's accreditation team, serves on a school improvement committee and has been actively involved with the RiSE center at UMaine.

Marci Train

Long Island School
marcitrain@longislandschool.net
Workshop D-W1

Marci Train is the 3-5 classroom teacher at the Long Island School off the coast of Portland, Maine. She teaches science to grades K-5. She received her undergraduate degree from The University of Maine in Orono, and later received her Master's degree at The University of Southern Maine.

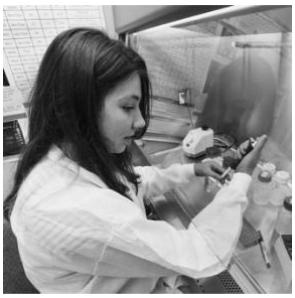
She believes that place-based science is the best way to teach science. She uses her island community as her classroom and sees herself as a tour guide of learning. She points out interesting places and occurrences; she encourages her students to use prior knowledge and understanding of scientific inquiry to understand the "landmarks" and "monuments" of their natural surroundings. She was recently awarded The National Edward C. Roy Award For Excellence in K-8 Earth Science Teaching.

Betsy Trenckmann

Hermon High School, RiSE Center Teaching Fellowship
betsy.trenckmann@schools.hermon.net
Workshop A-W3

Betsy Trenckmann is a life and physical science teacher at Hermon High School (HHS) where she has been teaching Physics, Ecology, and Biology for five years. In addition to her role as a teacher, she is also a class advisor at HHS and a high school volleyball coach at Hampden Academy. She is heavily involved with the RiSE center, participating in many professional development opportunities, as well as leading professional development for the Maine STEM Partnership. In her free time, Betsy enjoys taking naps with her dogs.

Robyn Walker-Spencer



Educator, Hurricane Island Center for Science and Leadership
Workshop G-W2

Robyn Walker-Spencer is an Educator at the Hurricane Island Center for Science and Leadership. She teaches marine ecology to middle and high schoolers and assists with student-driven research. This combines her backgrounds in marine science and teaching with her passion for outdoor ed.

Robyn is also a student at Bowdoin College majoring in biology with a focus in marine science and minoring in education. She has a strong background in scientific research, early education, and wilderness training. Robyn has developed and strengthened her interpersonal skills through volunteer work in the local community, as well as through her work with the Olympia Snowe Women's Leadership Institute. Her specific research interests include shellfish aquaculture and climate-induced invasive species.

Joe Walter

Lincoln Academy, RiSE Center Teaching Fellowship
walter@lincolnacademy.org
Talk B-T1

Joe Walter has taught physics, chemistry and freshman physical science at Lincoln Academy for the past four years. He is still often surprised by the range of topics for his students' questions. He spends most of his time outside of the classroom trying to keep up with the dog and toddler who share his home and eat his food.

Isaac Walton

Nokomis Regional High, RiSE Center Teaching Fellowship
iwalton@rsu19.net
Talk C-T1

Isaac has been a member of the RiSE Center Teaching Fellowship since 2019. He recently concluded his third year of teaching at Nokomis Regional High in Newport. Throughout his teaching career, he has instructed various subjects, including algebra, geometry, and freshman physical science. Moving forward, Isaac is excited to primarily teach physical science while also developing a data science elective at his school.

This summer, Isaac is excited to explore the impact of AI technologies in education. He is facilitating a focus group investigating the implications of large language models, such as ChatGPT, on educational practices. By delving into this area, Isaac aims to contribute to the dialogue surrounding integrating AI technologies in the classroom.

Sam Ward

R.W. Traip Academy, RiSE Center Teaching Fellowship
samuel.ward52@gmail.com
Workshop G-W1

Sam Ward is a fourth-year high school teacher at Traip Academy in Kittery. He teaches algebra 1, geometry, and precalculus, in addition to advising the math team and the senior class. When not at school, Sam enjoys reading, spending time outside, and going to concerts with his wife.

Dr. Kerry Whittaker

Corning School of Ocean Studies, Maine Maritime Academy
kerry.whittaker@mma.edu
Workshop D-W3

Kerry Whittaker (she/her) is an Assistant Professor of Coastal and Marine Environmental Science in the Ocean Studies Department at Maine Maritime Academy. Prior to joining MMA, Kerry was an Assistant Professor of Oceanography at Sea Education Association (SEA), sailing aboard tall ships conducting oceanography and offering academic programs for undergraduates in the Pacific and Atlantic Oceans. She has held a role as Faculty Chair of Coastal Studies for Girls (CSG), and was awarded a Sea Grant Knauss Fellowship within NOAA Fisheries, Office of Protected Resources. Kerry holds a B.A. in English and Environmental Science from Colby College and a Ph.D. in Oceanography from the Graduate School of Oceanography at the University of Rhode Island. Kerry loves sharing the experience of scientific inquiry and sea-going field work with students, and is passionate about experiential science education that merges oceanographic research with interdisciplinary undergraduate education.

Jen Wright

Great Salt Bay School, AOS 93, RiSE Center Teaching Fellowship
jwright@aos93.org
Talk C-T1, Workshop G-W1

Jen Wright teaches a multi-age 5th and 6th grade, project-based classroom at the Great Salt Bay Community School in Damariscotta. She teaches all subjects with a STEAM approach, incorporating all subjects together. She also has many years of experience teaching third grade. Jen is the 2015 Lincoln County Teacher of the Year and is still very active in the Maine State Teacher of the Year Association. She is also a state finalist for the Presidential Awards for Excellence in Mathematics and Science Teaching. She is currently working towards her graduate certification in Gifted Education and Talent Development at the University of Connecticut. Jen has been an active member of the Maine STEM Partnership for many years and is currently a mentor teacher with the RiSE Center Teaching Fellowship.

Monica Wright

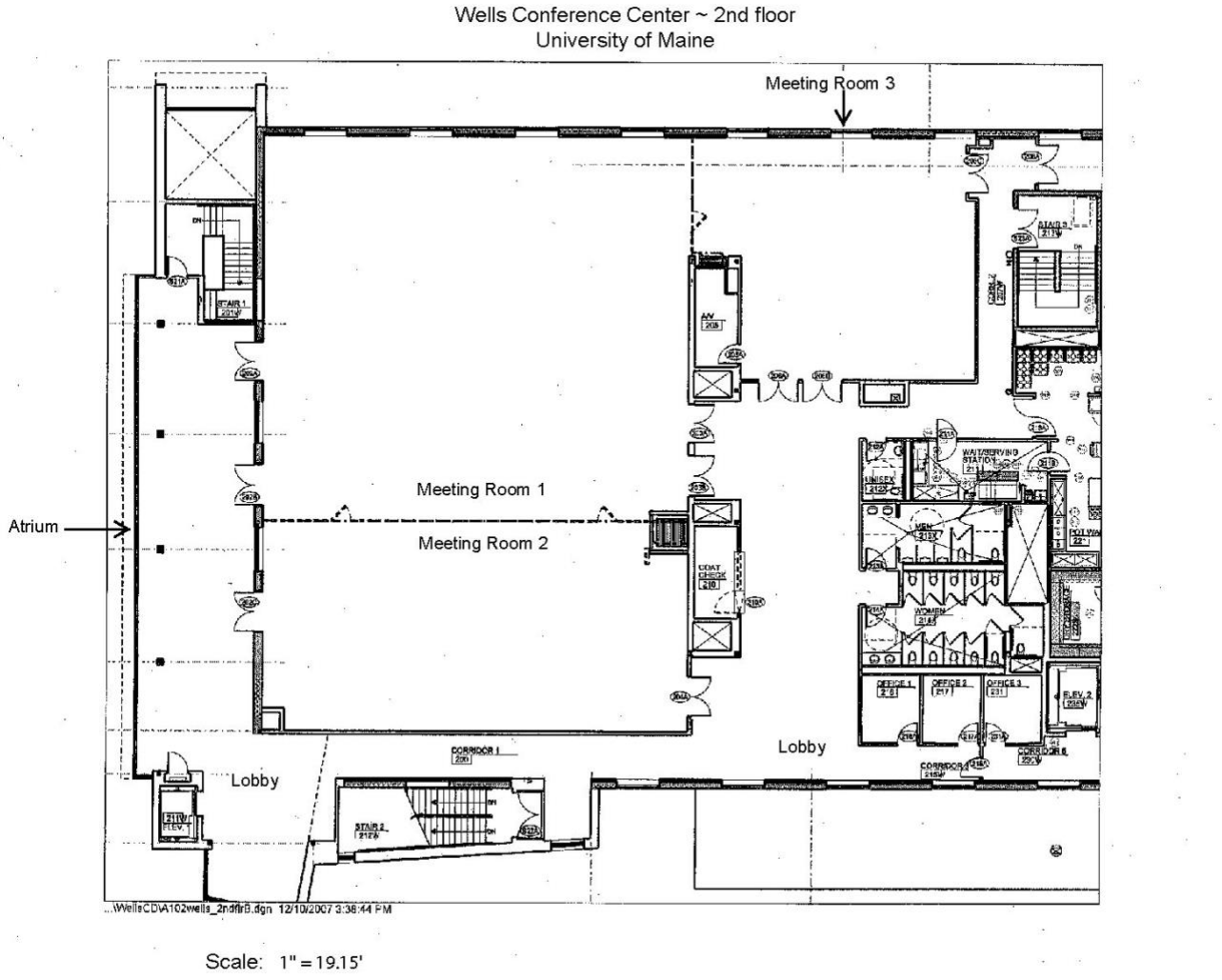
Bath Middle School, RSU1
mwright@rsu1.org
Talk E-T3

Monica Wright is a 7th and 8th grade science teacher at Bath Middle School, part of the RSU1, in Bath, ME. She has been teaching for the last 20 years. She earned her B.A. in geology from Macalester College and her M.S. in geoscience from the University of Wisconsin-Madison. In April, she co-organized STEM City, a community event for over 1000 participants that highlighted STEM connections in each of the district's schools, local non-profit organizations, and businesses. Besides guiding middle school students to be passionate about science, she enjoys hiking and traveling with her family.

Dr. Liping Yu

Department of Physics and Astronomy, University of Maine
liping.yu@maine.edu
Poster 8

Dr. Liping Yu is an associate professor of physics at the University of UMaine, leading a research group focused on Materials Theory, Informatics, and Design. His research group specializes in (1) the atomic-level understanding of material properties from first principles, (2) the identification of useful structure-property relationships from data mining and Machine Learning, and (3) the prediction and discovery of new and/or improved materials for next-generation electronics and sustainable energy. He is a recipient of the NSF Early Career Award in 2023.


Wells Conference Center ~ 2nd floor
University of Maine
Meeting Room 3
Meeting Room 1
Meeting Room 2
Atrium
Lobby
Lobby
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Scale: 1" = 19.15'

UMaine Campus Map

An interactive campus map and PDF can be found on the UMaine website: umaine.edu/campus-map.

Campus maps are also available at the Visitor Center, Buchanan Alumni House, Two Alumni Place (116 College Ave).

Guest Wi-Fi

MaineEDU-Guest is an open SSID intended for visitors.

This network is filtered and not recommended for students, staff, and faculty members. Users must agree to an acceptable use policy which should appear after connecting.

Students, staff, and faculty of the University of Maine System should not use this SSID, they should use eduroam. It operates on the same equipment; there is no difference in signal strength.

For technical support call the University Technology Support Center

1-800-696-4357

help@maine.edu

Conference Evaluation

Thank you for participating in the 2023 RiSE Center Conference on STEM Education and Related Research and for taking the time to provide your honest feedback. This survey will be used to inform future programs.

https://umaine.qualtrics.com/jfe/form/SV_cFJIrVQijaDXps2