



STEM EDUCATION SHOWCASE '25

April 5, 2025 | WPI Innovation Studios

8:00 - 8:30 **Check-in, Continental Breakfast** (2nd Floor landing)

8:30 - 9:10 **Share-a-Thon**

2nd Floor

Visit the many tables throughout the space to speak with educators about their resources and work they are doing to advance STEM education. See additional page for topics and presenters.

Research Experiences for Teachers (RET) Poster Session

Stop by to learn more about the exciting research teachers conducted during the Research Experiences for Teachers (RET) at WPI last summer.

8:45-9:05 **Meditation (Optional)**

Room 207

Jillian DiBonaventura, Director, Teacher Preparation Program, leads a mindfulness session to open the day.

9:10-9:15 **Welcome** (2nd Floor landing)

9:15-10:15 **Session 1 Workshops**

Room 205

Partnerships with Families: The Inquiry Group Book Study as a Model (PK-12)

Karen Waters, Assistant Director, Worcester Child Development Head Start Program
Head Start Staff: Suchira Channoi, Donna Servideo, Cristina Lopez de Henriquez, Jullieanne Lozado
Parent Presenters: Amanda Oliveira, Indraniz Torres, Mary Viliom

What does it look like when families and school educators authentically partner to come together in joyous learning? The panel will share their experience utilizing classroom documentation to inspire meaningful dialogue around children's thinking.

Room 203

Supporting Diverse Learners (PK-12)

Jennifer Toth, Director of Pupil Personnel Services, Uxbridge Public Schools

Engage with practical strategies and methods that support diverse learners in achieving excellence in STEM classroom settings.

I3 Labs

AI in the Secondary Classroom: Empowering Teachers and Students with Technology (6-12)

Greg Jones, Physics & Robotics Educator, Worcester Public Schools

Dan Brown, Math Educator, Worcester Public Schools

Dive into the world of Artificial Intelligence (AI) to discover how it can change your teaching! Demystify AI by exploring practical tools for boosting productivity, differentiating instruction, and providing hands-on activities that spark curiosity in students. Learn to navigate the ethical landscape of AI in education at the secondary level.

10:15-10:30 Break (Network and Browse Share-a-Thon Tables)

10:30-11:30 Session 2 Workshops

Room 205 **Lesson Plans Inspired by RET Research on the United Nations Sustainable Development Goals** (6-12)

Genesis Bernabel, Rebecca Cooke, Demetrios Kennedy, Jayne Kerner, Stephanie Korunow, Meredith Leighton, Allison Morin, Abigail Prisby, James Sheehan, Sam Simmons, Jay Turner

Pre-service and in-service teachers in the 2024-25 cohort of the Research Experience for Teachers program at WPI share their lessons and research inspired by the United Nations Sustainable Development Goals. The authentic research experience provided context for teaching “integrated STEM” and inspired ways to engage students in classrooms.

Room 203 **Promoting Engagement and Sensemaking for ML Learners in Science** (4-12)

David Mangus, Science & Engineering Curriculum Specialist, Worcester Public Schools

Identify strategies that promote engagement of multilingual (ML) students in Science practices and explore ways to utilize newly acquired vocabulary for sense-making activities.

I3 Lab **AI in the Elementary Classroom: Take a Small Bite of a BIG Tool** (PK-5)

Tiffany Davis, K-5 Instructional Coach, Ashburnham Westminster Regional Schools

Dive into the world of Artificial Intelligence (AI) to discover how it can change your teaching! Demystify AI by exploring practical tools for boosting productivity, differentiating instruction, and providing hands-on activities that spark curiosity in students. Learn to navigate the ethical landscape of AI in education at the elementary level.

11:30-11:45 Break (Network and Browse Share-a-Thon Tables)

11:45-12:20 Keynote

Rooms 203
and 205



All Students Are Known and Valued: Co-Constructing Learning with Students

Carlene Sherbourne, Ed.D, Education Manager
Worcester Child Development Head Start

Recognizing and respecting your students’ identities, values, experiences, and knowledge can help to build classrooms that are places of deep thinking and learning. STEM centered education can provide perfect opportunities to authentically connect with students and celebrate the joy of learning and teaching.

12:20-12:30 Closing | 1st Floor Amphitheater Area

Concluding remarks, reflections, group photo, and distribution of PDP certificates

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Share-a-Thon | April 5, 2025

Central Massachusetts STEM Network (CMSN) Ecosystem

Adrienne Linnell

Learn how the Central MA STEM Network Ecosystem supports PreK-12 schools and educators through meetings, coordination of STEM Week each October, and providing a lending library of free STEM Kits.

Teacher Resource Lending Library

Anne Ludes

Discover the resources available at Mass Academy that support educators. Mass Academy's teacher resource room contains a lending library packed with project-based lessons, hands-on activity kits, non-fiction books, and STEM materials for educators to take back to their classrooms. We can also help you design your own hands-on, problem-based, or project-based lessons and units!

Inspiring and Developing Educators Association (IDEA)

Lucas Dion, Demetrios Kennedy, Sarah Roberge

Stop by to see the work done by IDEA, an education-related club at WPI. We also hope to network with other educators and schools to pursue possible collaborations and collect advice.

Teacher Prep Program

Jillian DiBonaventura

We table to raise interest in educators joining us as mentor teachers or program supervisors. Come learn more about how we are preparing the next generation of STEM educators.

Physics Teacher Advisory Group: Community Building

TJ Noviello

View highlights of the work done by a group of in-service K-12 educators along with university faculty members. Our work spotlights bridge building between K-12 classrooms and universities.

Learn to Code with Wipple

Wilson Gramer

Wipple (www.wipple.org) is a free educational coding platform designed by WPI student Wilson Gramer. With Wipple, K-12 students learn to code through creative activities like drawing and music. Come try a demo — I welcome your feedback!

Science, Technology, and Engineering (STE) Classroom Performance Assessment Tasks (3-8 Science)

Beth Grady and Shannon Naumowicz

Explore the STE Classroom Performance Assessment Tasks developed by DESE to support classroom instruction that focus the application of STE practices to real-world phenomena.

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Share-a-Thon | April 5, 2025

I am STEM Lesson Library (PK-7)

Sara Donovan and Jane O'Connor

Check out the new lessons added to the "I am STEM" lesson library! All lessons follow the engineering design process, guiding students to solve standards-aligned problems in storybooks!

Seeds of STEM: Science & Engineering PK-K Curriculum

Desireé Loatman, Donna Servideo and Jessica Barnes

Explore the 8 units of the Seeds of STEM, a full-year free curriculum in science, engineering, and problem solving for preschool and kindergarten classrooms, developed by teachers through funding from the US Department of Education.

WPI Opportunities

Learn organic chemistry (O-Chem) through comic books developed by WPI Chemistry Professor, Anita Mattson, who is looking for teacher and school partners. Also, pick up information about the K-12 student offerings by the WPI Pre-Collegiate Outreach Programs and WPI Admissions.

Woo-Labs: Enhancing Out-of-School Time Learning

Emily Dodge and Lisa Carlin

Woo-Labs brings hands-on project-based learning to Worcester students to drive academic and social-emotional growth. Our capacity-building approach provides afterschool and summer programs with free training, data collection, supplies, and a college student intern to enhance program quality and, ultimately, kids' experiences.

WPI Masters Programs for Educators

Liz Desrosiers and Mia Dubosarsky

Come to learn about WPI's graduate programs for educators in physics, mathematics, and our newest program: MS in Integrated STEM Education (MISE). We'll review the highlight of these part-time programs and benefits of a discounted rate for full-time educators.

High-Quality Instructional Materials (HQIM) and OpenSciEd

Kristie McGuire and Donna Taylor

Heard the buzz about HQIM? Come learn about the elements that define a curriculum as high-quality. Explore OpenSciEd units and student work.

STEM Resources and Opportunities from DESE

Cassandra Gonzalez and Paula Moore

Explore STEM and Computer Science resources and opportunities for educators available through DESE's Center for Instructional support. There's something for everyone!

STEM EDUCATION SHOWCASE '25

Poster Session | April 5, 2025

Research Experiences for Teachers (RET): Engineering for People and the Planet

Stop by to learn about the exciting research addressing the United Nations Sustainable Development Goals (UN SDGs) conducted by WPI pre-service and in-service teachers at WPI last summer. (Note that they will be sharing their RET lesson plans as a workshop during the Session 2 in Room 205.)

2024 Projects

3 GOOD HEALTH
AND WELL-BEING



Engineering Bench-Top Testing of Interventional Devices for Cardiovascular Diseases

Sam Simmons, WPI Management Information Systems / MS Math
Jayne Kerner, F.A. Day MS / Newton MS Science

11 SUSTAINABLE CITIES
AND COMMUNITIES



Bioinspired Harvesting Calcium from Water for Cement and Concrete

Allison Morin, WPI Chemistry / HS Chemistry
Stephanie Korunow, South HS / Worcester HS Chemistry

3 GOOD HEALTH
AND WELL-BEING



Genetically Engineering a Plasmid to Develop a Live-Dead Reporter System in *Mycobacterium Smegmatis*

Abigail Prisby, Groton-Dunstable HS / HS Biology

3 GOOD HEALTH
AND WELL-BEING



Using Microscopic Worms to Understand Health-Associated Issues

Rebecca Cooke, Douglas High School / HS Biology

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



Waste-to-Energy: Engineering Feedstocks for a Circular Economy

Demetrios Kennedy, WPI Chemistry / HS Chemistry
Jay Turner, South HS / Worcester HS Chemistry

3 GOOD HEALTH
AND WELL-BEING



Development of Miniaturized Noninvasive Blood Gas Monitors

Genesis Bernabel, WPI Electrical Engineering / HS Physics
James Sheehan, Leominster HS / HS Physics

7 AFFORDABLE AND
CLEAN ENERGY



Photocatalysts for Clean Energy and Environment

Meredith Leighton, Raynham MS / MS Science