Morning Keynote: Why We Need STEM Superheroes

Ainissa Ramirez – Scientist and author
Location: Theater - Level 1

The 21st century needs a new kind of learner—one that can think expansively and solve problems resourcefully. Yet, many students do not get an opportunity to exercise these muscles in this age of assessment. This situation underscores the importance of making STEM fun and engaging, and makes the role of science teachers more critical than ever. Ainissa Ramirez makes a call to action to all science educators to infuse passion into the learning experiences they create to ignite curiosity in their students. This talk invites audience members to get in touch with their inner superhero to help save STEM education.

Making an Impact on the School Community Through Authentic STEM Projects

Kristen Devlin and David Cappaert – Environmental Sciences Magnet School at Mary Hooker, Hartford
Location: Science Hall - Level 1

Aimed at teachers and administrators, this session will share strategies and ideas for creating authentic projects for students to effect change in the greater school community. We will discuss how getting kids passionate can be all it takes to get momentum behind a community issue, and we’ll show how authentic STEM projects have been used as a catalyst for change in the community. You’ll hear from students about how the data they collected for projects such as recycling and transportation empowered them to engage the faculty and student body to take action. We will demonstrate how focusing on one aspect of the problem and making small changes can make a big impact. Opportunities to share and discuss ideas will be part of the session.

Next-Gen Science CT: An Online Short Course for NGSS

Nicholas Balisciano – Connecticut Center for Advanced Technology, Inc.
Location: Lab 1 - Street Level

Next-Gen Science CT is an online short course that provides its takers with a comprehensive starting point for understanding "A Framework for K-12 Science Education" and the "Next Generation Science Standards (NGSS)." Session participants will learn the combination of features that make this offering unique: It’s free and available to every educator statewide; it addresses all major components of NGSS; it offers certificates of completion; it is designed for Professional Learning Communities (PLCs); it promotes frequent reflection, application, and transition planning; it provides opportunities for course takers from across the state to engage in discussion and share ideas and resources with each other; and it is grounded by extensive feedback from elementary and secondary science educators and supervisors from a diverse array of districts across the state. Session participants will also learn about the design philosophy of the course, the course goals and objectives, the course structure and format (including a demonstration), and how to participate in the statewide pilot. All audiences interested in beginning their journey toward "next-gen science" during the next year are encouraged to attend.
STEM-based curricula can help students understand the world around them and provide the skills and mindset to consider solutions to environmental problems. A short video will show population growth through the ages. This hands-on workshop for middle and high school educators will engage participants in activities that take an interdisciplinary approach to problem-based learning on real-world issues related to our environment and society. Activities explore issues related to sustainability – population growth, carrying capacity in nature, natural resource use, land use, biodiversity and more. Strategies presented will include creating representational models with reusable materials, cooperative group problem-solving challenges, and role-playing simulations. The activities are designed to encourage critical thinking and the ability to make meaningful connections between individuals, communities, and global issues. In the classroom, these activities show students real-world applications of the essential skills in mathematics and scientific inquiry. Participants will receive lesson plans on CD-ROM matched to state and national standards, including Common Core Standards and the Next Generation Science Standards.

Creating a Mathematical Tour: The World is Your Classroom
Laura Callis and Elyssa Miller – Boston University School of Education
Location: Lab 3 - Street Level

Science and mathematics have natural connections to other disciplines and the world. However, students typically study the topics in isolation—within the four walls of their classroom. To demonstrate one way of integrating multiple mathematical topics, scientific disciplines, and other disciplines such as history and architecture, students and faculty members at Boston University created a mathematical tour for the 2015 National Council of Teachers of Mathematics Conference. With over 500 people in attendance, this experience can serve as a model for creating a mathematical and scientific tour for students, which helps them understand large quantities, model with messy mathematics, and appreciate how mathematics can shed light on other disciplines. In this workshop, we will explain how we created our tour and then take participants on a virtual mathematical tour of Boston. Throughout our virtual tour, participants will collectively brainstorm problems they can use to create their own tours of their state capital, their local parks, or their own schools. Following the virtual tour, small groups will take a mathematical tour of the room, demonstrating that even everyday spaces can be mathematized. Aimed toward middle and high school mathematics and science teachers, this session will help participants learn to create a mathematical and scientific tour that integrates multiple disciplines and brings mathematics to life for their students.

How Stamford Became STEMford for the Day
Carrie Chiappetta – Stamford Public Schools
Location: Lab 4 - Street Level

Stamford has instituted the Stamford STEMfest, a day of free activities centered around STEM, modeled after Ireland’s Maths Week. The Stamford STEMfest: 1) builds an awareness about STEM for students and their parents, 2) demonstrates to students how much fun these disciplines can be, 3) shows students how these disciplines are inherent in many of the things we do every day, and 4) helps students learn about the career and college opportunities in STEM. This event has been extremely successful in getting all students and the community to learn about STEM, and is now being done in other cities around the country. Come learn about this event, how it has impacted the community, and how you can get involved!

Twitter for Classroom Connectivity!
Ann Graboski and Jacklin Courtney – Smith STEM School, West Hartford
Location: Exhibit 1 - Level 5

It's not just for celebrities anymore! Twitter has quickly become one of the easiest and most effective tools for educators to promote home/school connections, foster global connectivity, and impact student learning with technology that takes learning to the next level. The classroom paper “newsletter” is a thing of the past. Discover an easier, more effective way to communicate with parents and build supportive homes for
learning- Twitter! Learn how one kindergarten teacher and one 5th grade teacher used Twitter to keep parents informed, promote student/parent dialogue about learning, make global connections, give back to the professional community, and provide followers with a virtual classroom experience. Hear educational technology expert and parent feedback on Twitter’s impact at home, and learn how easy it is to implement in your classroom. Leave feeling inspired and ready to use this technology in ways that will revolutionize your teaching! • Learn the basics of navigating Twitter • Receive sample permission letter templates • Find educational interests to follow on Twitter • Crack the code of common Twitter lingo and characters. The session is geared for teachers from pre-K through middle school.

Clearing Paths for ALL Students to Participate in STEM Opportunities
Michelle Graveline – Sedgwick Middle School, West Hartford
Jackie Corricelli – Conard High School, West Hartford
**Location:** Exhibit 2 - Level 5

Geared for secondary teachers, department chairs, and secondary building administrators, this session will share ideas and strategies about how to increase interest and enrollment in STEM opportunities (courses and events) with a targeted focus on under-represented populations. A mathematics department supervisor and math/computer science teacher will share the strategies they have used to expand course offerings available within the mathematics department to better represent the diversity of students' talents and provide multiple pathways for students to prepare for STEM majors in college and STEM careers. They will also share details of some of the courses they offer and highlight lessons developed to draw kids in to the exciting world of STEM and all of its potential. Time will be allotted for brainstorming additional ideas with a platform to document and share all of the ideas generated.

**Session 2: 10:20 a.m. – 11:50 a.m.**

What's the Latest on Next Generation Science Standards?
Rachael Manzer – Annie Fisher STEM Magnet School, Hartford
Andrea Greene – Betances STEM Magnet School, Hartford
Kirsten Devlin – Environmental Sciences Magnet School at Mary Hooker, Hartford
**Location:** Theater - Level 1

NGSS and NGSX: What are they? How are they different? This workshop will focus on how the Next Generation Science Standards (NGSS) were formed, how to read the performance expectations, and the latest news from the state on NGSS and assessment. Participants will also learn about NGSX, a unique professional learning series that will be offered to educators throughout Connecticut. The focus of the NGSX is to develop the tools and strategies needed to take the NGSS new vision back in the classroom. Be sure not to miss this important informational session.

Project Ignite - Managing Lessons, Users, and Files Online as Students Create, Innovate, and Design using Autodesk’s Tinkercad and Circuit 123 Platforms
Kim Coyle – Middle School of Plainville, Plainville
**Location:** Science Hall - Level 1

This is a hands-on workshop demonstrating Project Ignite/Tinkercad as a teacher tool to manage and organize student work to excite students about invention, innovation, engineering, and rapid prototype manufacturing. As a Technology Teacher at MSP in Plainville, CT and a member of the Autodesk Teacher Advisory Council, Project Ignite has generated a high level of excitement, interest and anticipation within my classroom. Students are ambitious and willing to take on higher-level challenges in 3D design with the use of Autodesk’s Tinkercad Software as their design tool. I'll share how Project Ignite can help manage student files, how Tinkercad excites and engages learners, and how to integrate the two with 3D printing. An overview will be provided on how Project Ignite can save valuable teacher time by organizing and managing student files and lessons. Teachers can track progress of student work, provide comments, and download for 3D printing all in one user-friendly dashboard. Scaffolded lessons can be developed, distributed, and differentiated within the platform to meet the needs of all learners. Participants will create
user ID’s, join a classroom, learn the basics of Project Ignite and Tinkercad, and participate in discussion and demonstration of student file management. Participants will also learn how to manage student accounts, access student files, and develop lessons. Target audience: All grade levels, science, math, technology, tech ed, librarians, makerspace moderators.

**Inquiry in Action in an Elementary and Middle School Mathematics Classroom**

*Erin Wilson, Sue Hinks, Mark Desautels and Louise Pulyado – Annie Fisher STEM Magnet School, Hartford*

**Location:** Lab 1 - Street Level

How can students facilitate their own learning? Inquiry-based instruction puts students in the forefront of their learning. Come participate in a series of inquiry-based practices in mathematics across grades K-6 that will engage learners. You will experience what an inquiry classroom looks like, sounds like, and feels like in an elementary and middle school mathematics classroom. You will gain a deeper understanding of inquiry, instructional practices, and resources to incorporate within classrooms. This workshop will model math inquiry practices and investigations in grades K-2, 3-5 and 6-8 based upon the Cathy Fosnot New Perspectives on Learning Curriculum. In this workshop, you will take on the role of “student” in an inquiry-based math classroom. Facilitators in each grade level band will model early number strings, mini-inquiry investigations, and a math congress to increase student discourse. You will be actively engaged in collaborative learning, conferring, and developing the context for learning – just as students will in an inquiry-based classroom. You will leave with a working knowledge of inquiry, resources to reinforce the standards of practice, and ideas for planning inquiry lessons within their classroom. Audience: All classroom teachers, instructional coaches, curriculum specialists, administration.

**Embedding iPads within Science and Literacy Instruction: Primary Grades Use Book Creator to Share Science Understanding**

*Lisa Zawilinski – University of Hartford*

*Students Stephanie Listner, Shawna Macsuga, Annamarie Mallat and Michael Zeiser – University of Hartford*

**Location:** Lab 2 - Street Level

The purpose of this session is twofold. First, the presenters will briefly share the results of an 8-week study whereby a researcher worked in a first and kindergarten class twice weekly to embed digital book creation (using iPads) into the science curriculum. Results suggest that even when children are not yet spelling and writing conventionally, they can still effectively use technology to share science understanding with others. In addition, not all mechanics-related skills naturally transfer to digital writing; some skills need explicit review. Additional findings will be shared during the session. The second purpose of the session is to facilitate hands-on exploration of the Book Creator app (Android and Apple versions available for download). This session will highlight tips and suggestions for embedding this app into existing curricula.

**Argumentation and Justification of Basic Theorems about Circles in Dynamic Geometry Environment**

*Gili Nagar and David Kamin, UMASS Dartmouth*

**Location:** Lab 3 - Street Level

Dynamic geometry environments (DGEs) provide visualizations of mathematical ideas, facilitate organizing and analyzing data, and enable students to model and interact with a large variety of shapes and objects. Learners can generate many examples, form and test conjectures, share ideas, explore mathematical relationships, receive opportunities to reflect on their activities, and engage in proving processes. Argumentation and Justification of Theorems in DGEs is a hands-on workshop that uses DGE to explore the concept of circles and their properties. This workshop is unique and emerges from research findings and our experience in a geometry course for 6-12 grade teachers in the University of Massachusetts Dartmouth. We will share recommendations and resources developed by us and related to effective learning and teaching in STEM fields across grades PK-20. We developed exploratory activities based on research findings and focused on different theorems about circles and their properties (e.g. Inscribed Angle Theorem). The literature suggests that engaging with such theories is a challenging task not only for
students but also for teachers. In our activities, teachers will examine mathematical objects with the ability to make actions such as pointing, clicking, grabbing, and dragging. We will take teachers from working in specific dynamic environment to being engaged with theory and actually construct mathematical proofs! Participants will receive the set of activities for use in their own classrooms.

Mobile Computer Science Principles: Introducing Computer Science While Building Socially Useful Apps
James Veseskis, Kevin Paradis and students – Hartford Magnet Trinity College Academy, Hartford
Location: Lab 4 - Street Level

This session will introduce teachers to computer science through mobile app development and Mobile Computer Science Principles (CSP), an NSF-funded effort to train teachers to teach computer science. Mobile CSP is a course that engages students in building mobile apps with App Inventor. The workshop will provide participants with an overview of Mobile CSP training including an introduction to App Inventor and a representative sample of CSP-based lesson plans, assessment materials, and other resources. Mobile CSP training will be available for free to all high school teachers in summer 2016 through an online course. Attendees will receive information about getting involved in the summer 2016 training. All of the pedagogical materials presented in the workshop and materials used by the workshop presenters in their individual courses will be made available to participants under a Creative Commons license. Materials will include sample syllabi, online video lessons, homework and programming assignments, sample quizzes and exams, and grading rubrics. Please bring your own laptop. App Inventor is an android-based platform and some mobile devices will be made available at the presentation. Please feel free to bring your own Android device.

Have Seeds, Will Travel
Lori Paradis Brant – Connecticut Forest and Park Association
Teresa Gagson – CT Department of Energy and Environmental Protection
Location: Exhibit 1 - Level 5

Use STEM to bring your K-8th grade students into the forest and the forest into your classroom! Are you looking for activities in which your students apply cooperative learning, hands-on experiences, and relevant, real-world problem solving? Project Learning Tree (PLT) is a wonderful tool to address these and many other demands of today’s classroom and the 21st century learner. This hands-on workshop will highlight one of the 96 activities found in PLT’s Environmental Education Activity Guide. Sort and classify plant seeds, identify seed dispersal, and design seeds that use varying methods of dispersal. Goals of STEM IN THE FOREST WITH PLT: • Sample some PLT activities that use trees and the forest for meeting STEM objectives • Specify the process skills students will practice in the activity, such as analyzing or predicting • Offer suggestions for authentic assessment of skills and content • Provide step-by-step procedures for leading investigations • Include student pages to support data collection and analysis • Enable students to apply scientific processes and higher order thinking skills to resolve environmental problems. Receive the PLT Activity Guide and become eligible for GreenWorks grants. Project Learning Tree® is the environmental education program of the American Forest Foundation and sponsored by the Connecticut Department of Energy and Environmental Protection and the Connecticut Forest and Park Association.
**Afternoon Keynote: STEMivation**  
*Bruce Dixon – Connecticut Pre-Engineering Program*  
**Location:** Theater - Level 1

“To accomplish great things, we must not only act, but also dream, not only plan, but also believe.” Anatole France

It is clear that in the 21st century, scientific and technological innovations have become increasingly important as our nation addresses the benefits and challenges of both globalization and a knowledge-based economy. To succeed in this new information-based and highly technological society, students must develop their capabilities in STEM to levels much beyond what was considered acceptable in the past. To support this notion, in March of 2015, the Obama Administration announced that increasing the number of students who receive undergraduate degrees in science, technology, engineering, and math (STEM) by 1 million over the next decade is a national imperative.

In this interactive session, we will explore innovative practices to help inspire and prepare students to earnestly pursue careers in science, technology, engineering and mathematics. We will leave our comfort zones as we challenge ourselves to push against some strongly held beliefs associated with STEM and Innovation. We will laugh, maybe cry, and leave with a new sense of what is possible for our students!

**Starting a FIRST Robotics Program in Your Community**  
*Lauren Jefferson and Carol Scully – FIRST For Inspiration and Recognition of Science and Technology*  
**Location:** Science Hall - Level 1

Learn how you can get involved with the hardest fun you'll ever have! FIRST (For Inspiration and Recognition of Science and Technology) provides accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills. FIRST has K-12 programs that range from motorized LEGO expos to large-scale, student-operated robots that encourage students to learn both technical and non-technical skills in a hands-on environment. Our workshop will cover the four programs of FIRST as well as everything you need to know about starting a program in your school or organization, including costs, equipment requirements, timelines, and resources available for new teams.

**What is Wow! in STEM Education?**  
*Andrea Greene – Hartford Public Schools*  
*Michele Deslisle – Betances STEM Magnet School, Hartford*  
**Location:** Lab 1 - Street Level

Geared for teachers in grades 3-5, instructional/STEM coaches and administrators, this session will demonstrate how two programs aligned to support the CCSS and NGSS implementation in the science and engineering classrooms and show academic growth. Learn how one school addresses two major components of the NGSS curriculum for grades 4 and 5 through the use of the program “Engineering is Elementary, An Alarming Idea: Designing Alarm Circuits”, and the Delta Electricity and Magnetism Science Program Kit. We will take you through a science/engineering unit and tie it into NGSS engineering practices, science frameworks, and a state-embedded task. We will provide the aligned science and engineering curriculum and describe the academic growth benefits of collaborating the two programs. We will discuss some key ideas of collaborating with other disciplines as referenced in the book “STEM Essentials” by Vasquez, Sneider, and Comer, a yearlong book study undertaken by our classroom teachers and staff. Participants will engage in hands-on science and engineering activities using the programs.
Using Minecraft to Promote STEM (STEAM) Learning
Anthony Betrus – State University of New York at Potsdam
Location: Lab 2 - Street Level

This is a bring-your-own-laptop (Windows or Mac) workshop session where attendees will be interacting and participating in science, technology, engineering, art, and mathematics (STEAM) activities via a dedicated Minecraft server. Participants should contact the facilitator in advance to gain access to the client installation program. Temporary accounts will be given to each applicant for use before and during the session, and installation files will be available directly prior to the session for those who cannot install the program in advance. During the session we will be exploring various STEAM-related lessons in the world of Minecraft, so participants leave with the ability to facilitate their own Minecraft activities in their schools. Through a partnership with MinecraftEDU and the National Education Foundation, participants will be given information on how to acquire their own Minecraft Server with unlimited student accounts at a significantly reduced rate.

Student-Generated Lab Procedures
Avi Ornstein – Classical Magnet School, Hartford
Location: Lab 4 - Street Level

We endeavor to expand student thinking by having them develop a procedure that can successfully fulfill a desired goal. Having to apply concepts that have already been learned to carry out a meaningful lab is a new experience for most students. While it causes a degree of stress, the experience is beneficial in several ways. It also allows the teacher to focus on details as students develop team skills, share ideas, and try different methods to see if they work. Several examples will be included and discussed. In addition, methods to modify lab options and grading to improve student effort will be shared, since students generally like doing labs but dislike writing formal lab reports.

The Power of Water: Community Connections and Inquiry-based Instructional Practices
Courtney Mulcahy, Caitlin Niles, Ben McLane, Ita Brown and students – Fred D. Wish Museum School, Hartford
Location: Exhibit 1 - Level 5

This past spring, our fifth graders investigated the power of water. Through our school's unique museum theme, students were able to explore this topic not only through several powerful community connections but also with an inquiry and project-based mindset that really made this unit come alive. We will highlight how we made strong connections with community partners and will share several hands-on experiences brought to us by our partners which helped our students explore the power of water. We will also share the planning and teaching behind instructional practices we utilized in this unit. Since our museum theme requires our students to act as docents in order to share their understandings with others, we hope to bring several of our now-6th grade students to help with our presentation.

InventionX
Mary Arico – University of Hartford
Amanda Berardi – Connecticut Women’s Education and Legal Fund
Location: Exhibit 2 - Level 5

InventionX is an engaging formal and/or informal educational program created to engage middle and high school students in STEM content and entrepreneurship. By using a custom-designed, problem-based learning structure, InventionX highlights real-world applications of knowledge and increases student motivation, critical thinking skills, and long-term engagement in STEM and business concepts. The real-world 21st century skills developed through InventionX help students of all levels understand what it takes to be successful in science/technology-based companies. Students participating in InventionX will be well-prepared for the 21st century workforce. InventionX includes three major components: Educator Training Workshops, Student Challenge projects, and Pitch Competitions. The five step problem-based learning framework of InventionX was developed by educators and Silicon Valley entrepreneurs to help bring the excitement of real-world invention and entrepreneurship to K-12 STEM education. This session will provide
an overview of InventionX and how it can work in any curriculum or informal education setting.

**Session 4: 2:15 p.m. – 3:15 p.m.**

**History in...Science Class? (Using Historical Primary Sources in Science)**
_Erica McNeil and Dina Marks – Shelton Intermediate School, Shelton_

**Location:** Theater - Level 1

Far too often, science and history collide; however, it is rare to hear of a lesson that combines both subjects. Using technology, it is feasible to acquire primary source video or documents that capture science history in the making! This session will simulate a classroom experience that fosters a collaborative environment across science and history. Geared toward science teachers interested in cross-curricular development, this session discusses three primary source topics and conducts differentiated activities that use these sources to predict and learn about the scientific outcomes and discoveries in that time. One example will be using technology to watch the moon landing and look at primary source pictures of historical space events. Linking cross-curricular content lesson activities using technology is much easier than one thinks! This session will open teachers’ eyes to the possibilities of cross-curricular learning and connect historical events to scientific discoveries. I have done these lessons in my middle school science class and the students LOVE making these historical and scientific content connections.

**Lessons from PROMISE: Truly Integrated STEM**
_John Tapper – University of Hartford_

**Location:** Science Hall - Level 1

This workshop, for educators serving students in grades 1-8, will focus on important findings from the three-year PROMISE program. PROMISE (a collaboration between CCAT and the University of Hartford) helped Connecticut teachers find meaningful ways to organize and deliver STEM curriculum. The presentation will explore the key components of science, technology, engineering, and math as PROMISE participants applied them. We will also present a model for developing further units based on findings from STEM. Finally, we will share examples of integrated STEM units developed as part of the PROMISE program. Participants can expect to leave with strategies they can apply in their own settings.

**How to Disguise Critical Thinking, Literacy Skills, and Accommodations for ESL Students in the CT Invention Convention**
_Emilie Phillips, Nicole Potocki and Andrea Greene – Hartford Public Schools, Hartford_

**Location:** Lab 1 - Street Level

In the 2014-2015 school year, four Hartford schools piloted a program to introduce the CT Invention Convention to Title I schools. We taught our students critical thinking and literacy skills through stand-alone inventing lessons as well as the process of bringing an idea to fruition through the inventing process. Every student presented and answered questions about their invention in front of a panel of their peers and adult judges and some students advanced to the state convention at Storrs. After hearing an overview of our experiences, attendees will learn a stand-alone inventing lesson that can be implemented in their classroom to support critical thinking and literacy skills. Strategies will be provided for how to differentiate and accommodate for special education and ESL students.

**Applying a Cross-Disciplinary Approach with 3-D Printing, Coding, and Graphic Design for Middle School and High School Students with an Autism Spectrum Disorder**
_Robert LeGary, Jr. and Jennifer Lamoureux – The Learning Clinic, Inc._

**Location:** Lab 2 - Street Level

Our session is geared toward teachers, parents, and administrators of students with Autism Spectrum Disorder (ASD) and non-ASD students with special education needs. We will share a robust case study of a cross-disciplinary approach with 3-D printing, coding, and graphic design for middle school and high school students with ASD at a small private school. These students are demonstrating impressive
competencies in coding, graphic and architectural design, and creative visualities. They are learning multiple ways to present, express, and engage with content-specific material by integrating 3-D technology into their curriculum. They are designing 2-D prototypes and 3-D models, such as medieval castles for their history class, that directly link to their subject area for a richer and more dynamic understanding of the built environment and its importance with human relations, economics, engineering, social and religious factors, and political and military implications. Additionally, they are gaining valuable job skills and are able to take advanced graphic design college classes. With the help of several of our middle and high school students, this presentation will showcase how our applied technology and design curriculum can be generalized to other educational settings (i.e., specific instructional practice and methods), how school leaders can create a school culture to support applied technology, and how the students with ASD benefit from an applied technology curriculum. More specifically, they will discuss their personalized and collaborative applied technology projects from the past year.

I’ll Huff and I’ll Puff, Will I Blow Your House Down? An Engineering Adventure
Patricia McMahon and Jen Olsen – Charles H. Barrows STEM Academy, Windham
Location: Lab 3 - Street Level

Launch new learning in your classroom and inspire your students to become engineers. This workshop will demonstrate a performance task assessment geared towards the Grade 3 NGSS Weather and Climate standard. This session will include a hands-on learning activity where participants will design and build a model of a house that will withstand simulated tropical and hurricane force winds. Resources will be provided and cross grade level connections will be made. A detailed description of the integration of the Common Core State Standards in math, reading, and writing with the performance task will also be provided.

ELL: Achieving Literacy Through STEM
Sandra Inga and Monica Quiñones – Hartford Public Schools, Hartford
Location: Lab 4 - Street Level

This session will expose the audience to collaborative and integrative experiences in improving literacy for English Language Learners (ELL). It will build upon support for ELL students via family support, lesson and coaching support, and online support. The importance of recognizing, respecting and embracing ELL’s culture will be discussed as a bridge to engage and further facilitate learning. This session recognizes high-quality inquiry-based science instruction as a natural vehicle to support English learners’ literacy, language, and academic success; allows students/teachers to engage in rich conversations; promotes purposeful language use, vocabulary development and conceptual learning; motivates young students to communicate about science observations and experiences. The session will be interactive and includes hands-on learning in the form of discourse and storytelling and various activities.

Equity and Diversity in Science and Engineering Education
Joan Pedro – University of Hartford
Nicholas Balisciano – Connecticut Center for Advanced Technology, Inc.
Location: Exhibit 1 - Level 5

The purpose of this session is to sensitize educators and promote the ideas of equity and diversity in science and engineering education for all students. There has been little access to science and engineering institutions to provide field experiences and lack of attention to the science curriculum with the heightened emphasis on literacy and math. Science is also absent at the elementary level in some schools. The Framework for K-12 Science Education espouses that "promoting scientific literacy among all of the nation’s people is a democratic ideal worthy of focused attention, significant resources and continuing effort." This session targets principals and teachers. We will share the major ideas promoted by the Next Generation Science Standards and provide case study examples so participants can develop and share their own ideas of activities to promote equity and diversity in their science teaching.
Collaboration and Integration of STEM in Ecosystems
Nicole Bay and Jen Bergin – Charles H. Barrows STEM Academy, Windham
Location: Exhibit 2 - Level 5

This session will highlight the collaboration between grade-level team members, community members, and the CT Science Center in an effort to fully integrate STEM components as part of our Grade 5 Ecosystems unit. We will share our experiences planning and carrying out the lessons and field experiences using technology such as iPads and PASCO sensors to address NGSS Standards as well as Common Core Standards for Math and English Language Arts. Field experiences included visits to several sites, both on and off campus, to record data on species found in the areas. An engineering performance task served as the unit assessment. Come see how we put all of the pieces of the puzzle together to create a unit of study students will never forget.