SE MA STEM RESOURCE FAIR

Educating for the Future – 2020 & Beyond

May 18, 2017 – 3:00PM-6:00PM

Business Partners

- **AccuRounds**
- **ChartaCloud | ROBOTTECA**
- **DePuy Synthes**
- **HarborOne**
- **North Easton Machine**
- **PID Analyzers**
- **Sensata Technologies**
- **Tinker and Create**

Community Partners

- **American Association of University Women (AAUW) South Shore Branch**
- **American Chemical Society & American Industrial Hygiene Association**
- **Barnes & Noble**
- **Cambridge Science Festival**
- **EverFi**
- **Hockomock YMCA**
- **Mansfield Envision the Future Replication Team**
- **National Marine Life Center**
- **New Bedford Symphony Orchestra**

Educational Partners

- **Attleboro Public Schools - Attleboro Community Team**
- **Canton Public Schools**
- **Easton Public Schools – Easton Community Team**
- **Fall River Public Schools**
- **Old Colony Regional Vocational Technical High School**
- **Professional Development Resources for Early Childhood Educators/ SEEPP/ EPS Grantee**
- **Project Lead the Way**
- **Robbins Children's Programs**
- **Silver Lake Regional School District**
- **South Coast Educational Collaborative**
- **Weymouth Public Schools**

Government Partners

- **MA Department of Higher Education - MA STEM Pipeline Fund – MASS/ Transfer**
- **Occupational Safety & Health Administration (OSHA)**

Higher Education Partners

- **Bridgewater State University**
- **CONNECT Partnership - SE MA STEM Network**

Exhibitor Descriptions

Business Partners

AccuRounds
Providing work-based learning opportunities for students and educators
Learn how AccuRounds partners with local school districts, institutions of higher education, and area businesses to advance STEM education and career &college readiness. Collaborative efforts include participating in career fairs, community STEM/STEAM events, the SE MA STEM Network Work-Based Learning Seminars for Educators, and the Envision the Future Program. Along with other local manufacturers, AccuRounds hosts Manufacturing Day/Month in October, when students, parents, and educators can tour the facility and learn about advanced manufacturing. Discover more about resources that support your efforts, including classroom hands-on activities, internships, the AMP IT UP and Dream It Do It programs, and links to educational videos.
Presenters: Diane Ferrera, Director of Human Resources, AccuRounds
Rebecca Stone, Administrative Coordinator, AccuRounds

Connections to Chemistry for Educators and Students
Learn about STEM resources that the American Chemical Society (ACS) and American Industrial Hygiene Association (AIHA) offer including ACS professional development opportunities for high school chemistry teachers, such as the "Connections to Chemistry - High School Teacher Workshops." Find out how to provide a free Science Café to students in your area. Learn how students can make an inexpensive pH meter for their school.
Presenter: Jennifer Maclachlan, Managing Director – PID Analyzers, Member American Chemical Society (ACS): Northeastern Local Section and American Industrial Hygiene Association (AIHA)

DePuy Synthes
The DePuy Synthes Companies deliver innovative medical devices and solutions in orthopedics, spinal care, and neuroscience. Learn how DePuy Synthes worked with the Attleboro Public Schools to provide work-based learning experiences for educators and designed materials and equipment that allowed the educators to replicate the activities with their students. Find out about the impact of work-based learning for educators and students and meet representatives of DePuy Synthes who are committed to working with educators to prepare students to live and work in the 21st Century.
Presenter: David Spenciner, DePuy Synthes Mitek Sports Medicine

HarborOne U
Financial Education
We believe that you're never too young to learn how to plan for your financial future. From our *Piggy Bankers* program for children aged 3-5; *Saving Makes Cents* for those in grade school; and *Young Adult Financial Education* for ages 12-20, youth of all ages learn basic skills to help shape good money habits for life.
Presenter: Maureen Wilkinson, Vice President Community Education/CRA Officer

Meet a Humanoid Robot – NAO
Interact with a "humanoid style" social engagement robot. NAO as a humanoid robot has been evolving since 2006. Discover how NAO moves, senses, hears, speaks, and thinks. Learn how a robot is programmed to perform its behaviors. Discover the multiple dimensions of science, technology engineering, math, and the arts that all converge in the new era of robotics.
Presenter: Mike Radice - ChartaCloud Technologies/ROBOTTECA.com

North Easton Machine
Modern Manufacturing Skill Set
North Easton Machine Company, Inc. is an advanced manufacturer of custom precision components provided for engineers in a wide variety of markets, including medical device, aerospace, and electronics. We have over fifty years of experience partnering with our customers to provide unrivaled quality and customer service. We work with a variety of vocational and traditional high schools, community colleges, workforce investment boards, and career centers to create pathways for students, and those needing job retraining, to work in our industry. Come see what we make and how it's made!
Presenters: Paul C. Diamond, Vice President
Paula Martel, Human Resource Manager

Sensata Technologies Inc.
Collaborating with the Community to Advance STEM Education
Learn how Sensata partners with PreK-12 educators and community organizations to advance STEM education in our local community. Collaborative efforts include participating in community STEM events, the SE MA STEM Network Envision the Future Program, and hosting STEM events on site. Additionally, learn about the existing program and our expansion plan for the Sensata STEM Mentoring Initiative and how engineers mentor girls from the Attleboro area and provide them with opportunities to deepen their understanding of STEM concepts and expand their leadership skills.
Presenters: Jennifer Brenner, Process Engineer
Emma Klinkhamer, Process Engineer
2015-2017 Sensata STEM Mentoring Initiative Participants

Tinker and Create
3D printing – Aquaponics - Digital Game Design & Digital Comic Book Design
See how to 3D print the Incredible Hulk. Learn about how Tinker and Create works with organizations such as the Hockomock YMCA to provide engaging STEM programs for students. Programs include 3D printing, Digital Game Design, Digital Comic Book Design, and Aquaponics. Skills students learn include CAD design, mechanical engineering, materials science, chemistry, food science, 3D printing and sensors.
Presenter: Etay Amon, Tinker and Create

Community Partners

AAUW South Shore Branch: Increasing & Maintaining the Interest of Girls in STEM
The American Association of University Women (AAUW) is the nation's leading voice promoting equity and education for women and girls. Meet AAUW members and find out how the AAUW South Shore Branch collaborates with the Weymouth Public Schools to provide STEM educational experiences for girls. Hear about the STEM Conference for Girls in Grades 4 – 8, a one-day conference offering workshops engaging girls in a variety of hands-on activities and STEM career exploration. Learn about the Envision the Future STEM Program, which was offered in July 2016. This week long program for girls in Grades 6-9 featured workshops in computer programming, forensic science, engineering, and physiology along with a field trip to Quincy College.
Presenters: Lynn Howard, STEM Chair, AAUW South Shore Branch and 4th grade teacher, Weymouth Public Schools
Tina Conte, AAUW South Shore Branch Member and 7th grade Science teacher, Weymouth Public Schools
Fran Schlesinger, AAUW South Shore Branch Member

Books and Maker Space Resources for Pre-K to High School for STEM Programs
Find out about STEM events at Barnes and Noble like the Maker Fair being held fall 2017. Learn about the resources available at Barnes & Noble including books, games, and more to use with students and to help build a Maker Space. **Presenters:**
Helene Sansoucy, Community Business Development Manager, Barnes & Noble
Janet Heuman, Book Seller

Cambridge Science Festival
Find out about the Cambridge Science Festival and its year-round initiative, *Science on the Street*, that aims to make science, technology, engineering, art, and mathematics accessible to all. Learn how your district can participate to increase student awareness of and interest in STEM careers. Engage in an activity that you can share with colleagues and replicate with students.
Presenter: Cathleen Nalezyty, Science on the Street Coordinator, Cambridge Science Festival

Digital Tools for the 21st Century
EverFi's digital tools for 21st Century Skills are available at no cost to schools through the support from local and national partnerships. Over the past decade, we've certified millions of students in important topics like financial literacy, STEM, healthy relationships, digital literacy, civic engagement and more. EverFi's on the ground implementation team is available to support teachers using the program and a robust online teacher platform allows instructors to view student progress, access additional course materials, and share resources with other educators.
Presenters: Jess Donovan and Luke Martin, EverFi

Envision the Future in Mansfield – Community Collaboration
Learn how community members in Mansfield collaborated to provide girls with opportunities to engage in challenging STEM activities, explore career options with STEM professionals, meet women role models in STEM fields, and connect with other girls with similar interests at the Envision the Future Program – Bridgewater State University - July 20-24, 2015. Find out how the Mansfield Envision Team worked with community members and replicated elements of the Envision the Future Program as part the Mansfield Envision the Future STEM Expo held on March 18, 2017, for students and their parents in 5th and 6th grade who attend school in Mansfield.
Presenters: Deborah Fournier, Mansfield Public Schools and Mansfield Envision the Future Team Member

STEM at the Hockomock YMCA
The Hockomock area YMCA offers hand-on STEM programs for children ages 2.9 to 14. We will demo a variety of STEM programs and activities that are offered in all programs at the Hockomock YMCA. Participates will receive sample lessons and ideas that can be used in partnership with the Hockomock YMCA to provide onsite programming for students during the traditional school day or during out of school time hours. Participates will also receive materials on our Summer STEM camps offered at the Hockomock YMCA, including Envision STEM camps for girls, Food And Fitness programs, and our engineering and rocketry camps.
Presenter: Kim Jennings, Hockomock YMCA

Marine Wildlife Rehabilitation & STEM Education
The National Marine Life Center (NMLC) is a non-profit 501(c)(3) marine animal hospital and science and education center that rehabilitates and releases stranded marine mammals and sea turtles in order to advance science and education in marine wildlife health and conservation. Learn how marine wildlife rehabilitation can support STEM education. Engage in an activity that you can replicate with students.
Presenter: Kathy Zagzebski, NMLC President & Executive Director

New Bedford Symphony Orchestra – *Learning in Concert* – Focus on Gravity
Attendees will explore the benefits of using concept-based arts integration curriculum to explore S.T.E.A.M. concepts through the study of gravity. Scientific concepts are explored using a concept-based arts integration model that can provide multiple pathways for students to build understanding while creating learning environments that support transfer of learning. The New Bedford Symphony Orchestra's *Learning in Concert* program explores shared concepts in music and STEM subjects each year through partnerships with 55 Massachusetts and Rhode Island schools. Learn about concept-based arts integration in action with curriculum examples from "Gravity in Space and Sound" and next year's program, "The Orchestra as Ecosystem: exploring balance through classical music and ecosystems."
Presenter: Terry Wolkowicz, Education Director, New Bedford Symphony Orchestra

Educational Partners

Attleboro Public Schools – Community & School District STEM Initiatives
Find out how the Attleboro Public Schools works with businesses and community members to advance STEM education. Information will be available on community events for students and parents as well examples of work-based learning opportunities at DePuy Synthes and Sensata Technologies. Materials include a description of the impact of work-based learning and demonstrate the commitment of educators, businesses, and community organizations in preparing students to live and work in the 21st Century.
Presenters: Tami LaFleur, K-12 STEM Coordinator, Attleboro Public Schools
Linda Ferreira, STEM Consultant
David Spenciner, DePuy Synthes Mitek Sports Medicine

Canton Robodogs and Canton Gearhounds: FTC in the Classroom
The Canton Robodogs (FTC #6040) are a five year veteran FIRST Technical Challenge Team (FTC) open to students in grades 9-12 at Canton High School. The team builds robots that are 18 inches cubed or less and begin with a kit. The team adds custom, 3D printed, and readily available parts to design, build, and program a robot to compete in the season's game. This year's award winning team qualified and competed at the MA State Tournament and the East Super Regional. Members of the team have helped to prototype the Robotics 2 course at CHS. This class is open to all Canton High Students in grades 9-12 through the school's course selection process with the completion of Robotics 1 or one year on one of the school's two FTC robotics teams (the Canton Robodogs or our rookie team - the Canton Gearhounds.) Meet members of the team and see the team's robot in action. Several of the class robots will be available as well. Leave with information and links on how to start an FTC team and with information/materials to start a Robotics Class that brings FTC into the classroom.
Presenters: Members of the Canton Robodogs (FTC # 6040) and Katie Healey, Robotics Coach and Science Electives teacher (Engineering/Robotics/Earth Science/Construction) at Canton High School

Easton STEAM Education Team – Community & School District STEM Initiatives
Learn how Easton Public Schools works with businesses and community members to advance STEAM education (A for Arts). Past and recurring community events for students and families will be on display and we will have a handout to help you build a community of collaborators to promote STEM learning. Come prepared with questions about how to start/expand a team!
Presenters: Dr. Lisha Cabral, Assistant Superintendent
Laura Ayasse, Science Teacher, Oliver Ames High School

Fall River Middle School Program – Automation & Robotics: Impact of Grants
The Kuss Middle School in Fall River has been the recipient of grants that have allowed middle school students to develop skills in automation and robotics and for teaches to be trained to lead these programs. Learn about the impact of grants on educators and students in an inner city school, in particular, grants from the Overdeck Foundation and the MA STEM High Quality Career Pathways Capacity Grant. See the results of student engagement with a variety of projects that students built and programmed. Projects include a Spinning Store Sign, a Traffic Tollbooth, and two Robot Dragsters. Take away a description of project-based challenges that can be used with students.
Presenters: Matt Sakell, Math and Science Department Head, and Allyson Michels, educator, Kuss Middle School, Fall River Public Schools

OCcreates Opportunities for Students to Collaborate with Businesses
OCcreates is a program that facilitates opportunities for our students to collaborate with small businesses. In this program, our junior and senior students are involved in the design and/ or implementation of projects that solve a problem related to the small business. These projects require the integration of multiple technical programs within Old Colony RVTHS, such as CAD Drafting, Machine & Tool, Metal Fabrication, Carpentry, and Electronics Engineering. The goal of OCcreates is to support small businesses in the development of prototypes or other useful products.
Presenters: Old Colony RVTHS - Jackie Machamer, Asst. Principal/Vocational Technical Education Coordinator, and Ryan Robidoux, Teacher, Computer Science

Professional Development Resources for Early Childhood Educators
The Massachusetts Educator and Provider Support (EPS) Grant focuses on three core areas of the professional development system: educator and provider planning, coaching and mentoring, and competency development. The EPS grant serving southeastern MA is the Southeast Education Professional Partnership (SEEPP). Find out about STEM-related professional development (PD) opportunities including an introduction to the Pre-K STE standards, STEM PLCs at our regional children's museums and CEUs on STEM courses. You can find all this information and more on our website www.cdedu.us/SEEPP, or visit us on Facebook "Southeastern Education Professionals Partnership.
Presenter: Nicole Miles, Region 5 EPS and SEEPP

Project Lead The Way: Learn How a K-12 STEM Pathway Prepares Students for College& Careers
At the STEM Resource Fair, take home a student activity related to computer science or engineering. Project Lead The Way K-12 Pathways in Engineering, Computer Science, and Biomedical Sciences, endorsed by the Massachusetts Governor's STEM Advisory Council, prepare students for the wide variety of STEM careers. The hands-on, project-based curricula engage students in solving real-world problems and are aligned to the Common Core ELA and Mathematics Standards, CSTA, and NGSS. Multiple studies show increased student attendance and assessment scores in reading, mathematics, and science when students use a PLTW curriculum. Many colleges and universities recognize the rigor of the high school courses and provide college credit, scholarships, and preferential admission to eligible students. Learn how your school can implement the program endorsed by the American Society for Engineering Education, the Society of Manufacturing Engineers, and the American Aerospace Industry Association, cited by the National Academies of Science and Engineering as the model to use to develop a world-class, standards-based curriculum, and listed as a model program in the Harvard University Pathways to Prosperity report. At the conference take home a student activity for K-5 CS or MS/HS Engineering.
Presenter: Mary Laturnau, Director of School Engagement, Massachusetts, Project Lead The Way.

Robbins Children's Programs: Promoting STEM Careers in Early Childhood
Exposing children to STEM concepts builds a foundation for their interest in STEM careers further into their educational journey. Many professionals in the field attribute their choice of careers to a positive early childhood experience. Join us to see how we have introduced coding and other concepts into our program with children as young as 3 years old. In addition to displays and handouts, we will showcase an activity formulated from one of the Work-Based Seminar site visits.
Presenters: Debra Garvin, Education Coordinator, Sue Grenier, and Angela Andrade, educators

Silver Lake Regional High School Robotics Independent Studies
Find out how Silver Lake provides opportunities for students to apply STEM skills and concepts to solving real world problems. Meet four seniors who participated in Robotics Independent Studies. These students developed their own robotics project proposals, designed solutions, and prototyped their robots. They used technologies such as CAD, 3D printing, and Arduino programming. The projects include: an Underwater Autonomous Vehicle (UAV) designed to locate a sound source, a 3D-Printed Quad-Rotor Helicopter, and an electric bicycle with solar-charging station. Talk with real student about their experience and take back ideas on how to implement project-based learning into your own classroom.
Presenters: Silver Lake Regional High School - David Arruda, AP Physics Teacher and Robotics Advisor; and students Alec Snell, Carson Snell, Chris Ricardi, and Will Parker

South Coast Educational Collaborative STEM for Students with Special Needs
Attendees will learn about the positive effects of STEM for students with attention issues, social emotional issues, and other types of special needs. Attendees will also hear about the benefits of our Eco learning program.
Presenters: Charlie Seekell, STEAM Coordinator
Cheryl Braiser, Educator
Kim Botelho, Educator

Weymouth Public Schools (WPS)
Family & Community Engagement - STEM - College & Career Readiness Initiatives
From career cubs to career academies, students in WPS are engaged in STEM education and career and college readiness opportunities beginning in early childhood. Find out how students connect with STEM professionals and are introduced to solving real-world problems through in school experiences and community based events and programs. Learn about the Career Showcase for PK-6, the Weymouth High School Capstone Project, Career Academy STEM Industry Speakers, Weymouth High School Career Fair, STEM Conference for Girls in Grades 4 – 8, Let's Grow STEM: STEM Expo for PK-6, and more.
Presenter: Kelly Stukenborg, Assistant Superintendent, Weymouth Public Schools

Government Partners

MA STEM Pipeline Fund
In 2003, the Massachusetts State Legislature created the STEM Pipeline Fund to address the growing talent shortage of STEM workers and designated the Department of Higher Education as the administrator of the fund. The STEM Pipeline Fund supports state STEM functions and initiatives such as the Regional STEM Networks, the STEM Summit, and the STEM Council. For more information contact Keith Connors, Sr. Program Manager of the STEM Pipeline Fund, at kconnors@bhe.mass.edu or visit the website at http://www.mass.edu/stem/home.asp
Presenter: Keith Connors, Sr. Program Manager of the STEM Pipeline Fund, Massachusetts Department of Higher Education

Noise and the Occupational Safety & Health Administration (OSHA)
With the Occupational Safety and Health Act of 1970, Congress created the Occupational Safety and Health Administration (OSHA) to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance. Learn about the OSHA 10-Hour course for students. Engage in activities that measure noise levels and demonstrate the impact of noise on health and understand how exposure to loud noise can lead to permanent hearing loss. Learn what you can do to protect your hearing for the long run. Take away descriptions of activities that can be replicated with students.
Presenter: Peter Barletta CAS, CSP, MPA, OSHA-Braintree Office

Higher Education Partners

The Center for the Advancement of STEM Education (CASE)
CASE offers hands-on laboratory experiences for students, professional development and lending labs for teachers, summer science programs for middle school students and access to BSU's Observatory and Project EarthView's twenty-foot inflatable globe. Participate in an activity utilizing aquatic insects as a measure of water quality. Please join us to learn more about opportunities for teachers and students.
Presenter: Dr. Jennie Aizenman, CASE Director and Jocelin Westgate, BSU graduate.

CONNECT Partnership
CONNECT is a consortium of the five public colleges and universities in Southeastern Massachusetts (Bridgewater State University, Bristol Community College, Cape Cod Community College, Massasoit Community College & University of Massachusetts Dartmouth), established in 2003 by the Chancellor and Presidents of these institutions of higher education. We strive to leverage the quality, strength, resources, and excellence of the five public higher education institutions of CONNECT to enhance educational effectiveness and efficiency while improving student success, increasing educational attainment, advancing economic health, and strengthening cultural life throughout the region**.**
Presenter: Dr. Stacey Kaminski, Executive Director

SE MA STEM Network
Established in 2004, through funding provided by the Department of Higher Education's STEM Pipeline Fund, the Network seeks to improve teacher preparation in science, technology, engineering and mathematics (STEM) subjects and to increase student interest in, preparation for, and success in STEM careers. The CONNECT Partnership, a consortium of the five public colleges and universities in SE MA, serves as administrator of the network.
Presenter: Katherine Honey, SE MA STEM Network Coordinator