

News from the Connecticut Science Center



Inside our newest traveling exhibition, *Leonardo da Vinci: Machines in Motion*.

Leadership in K–12 Science Education

The Connecticut Science Center is playing a leading role in the state-wide implementation of new national standards for teaching science. Adopted by the CT Department of Education in November, the Next Generation Science Standards (NGSS) present a multi-layered method of teaching science, with an emphasis on hands-on learning, experimentation, engineering concepts, and a student-centric philosophy of teaching.

The Science Center is the premier provider of NGSS professional development for the state's teachers, STEM coaches, and administrators through the Mandell Academy for Teachers. Facilitators, teachers, and leaders will be guided through new teaching practices and curriculum development as schools implement NGSS. Schools and districts will continue to invest in teacher training as NGSS is fully phased in over the next several years.

As of today, 18 states and the District of Columbia have adopted NGSS. The Science Center is the only institution of its kind working with a state department of education to implement NGSS statewide—an endorsement of the Science Center and its approach to teaching science. The Science Center's onsite exhibits have always been tied directly to science curriculum standards; over the course of the coming years, we will ensure that all exhibits and programs are developed or updated to align with NGSS, so that the Science Center continues as a vital resource for the teachers, families, and students who enjoy our services. ■



The Connecticut Science Center inspires lifelong learning through interactive and innovative experiences that explore our changing world through science.

UPCOMING PROGRAMS AND EVENTS:

Everyday Genius: How Leonardo da Vinci can Spark Our Creativity

A Panel Discussion led by Steven Dahlberg

Wednesday, April 13 at 6PM

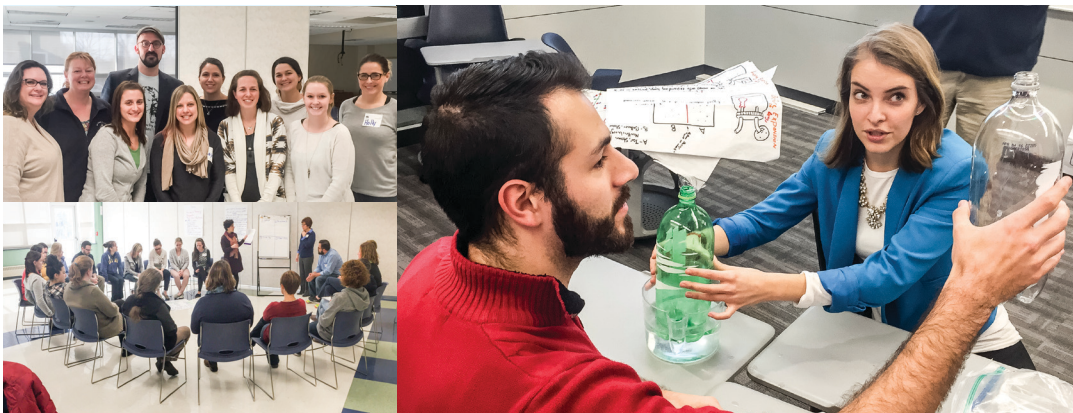
STEM Awards Breakfast

Tuesday, April 26 at 7:30AM

A Dangerous Master: How to Keep Technology from Slipping Beyond Our Control

Lecture and book signing with Wendell Wallach

Thursday, May 5 at 6PM



Above: Teachers from around Connecticut meet with Science Center STEM Educators to learn how to implement NGSS principles in their classrooms.

Meet STEM Educator Nick Villagra

My name is Nick Villagra, and I've been working as a STEM Educator at the Science Center for more than two years. STEM Educators deliver programs like theater shows, outreach activities, and labs. From one day to the next, I find myself in different corners of the state, sometimes making giant dry ice bubbles for a stage show or programming a robot to dance to a Taylor Swift song. Each day is new and exciting, and for that I count myself very fortunate to be part of the STEM Educator team.

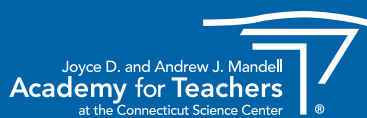
What I do is a ton of fun, but it's also meaningful to me. Growing up, science and engineering too often lived inside textbooks; they were abstract and seemed wrapped in layers of code that could hardly be broken. The truth is, science and engineering are an essential part of the everyday world, and the world will be brighter if more children decide they can do science and engineering. The Science Center is a key institution inspiring the next generation of scientists and engineers in Connecticut, and I'm proud to be a part of that mission.

To see all that is possible when you let a kid be a scientist or engineer, look no further than the monthly workshops taking place in the *Leonardo Da Vinci: Machines in Motion* exhibit. I led the first workshop, Catapult Corner, in January. In less than two hours, kids built elaborate siege machines that hurled projectiles beautifully without lectures or textbooks; they needed only a few household items and a lot of imagination. They came away with a deeper understanding of mechanics that no catapult diagram could have given them. ■



At left: STEM Educator Nick Villagra with a workshop catapult design.

Below: Visitors create and build using materials provided in Leonardo da Vinci's Workshop. The workshop is open daily for visitors of all ages, with facilitated youth programs on selected Saturdays.



Whole-School Teacher Training in Action in West Hartford

While test scores at the Florence E. Smith STEM School, a public school for pre-K through Grade 5 students in West Hartford, had traditionally exceeded statewide averages, teachers and administrators at the school felt they could enrich science learning with a new approach to teaching. In 2011, the school began working with the Connecticut Science Center's Mandell Academy for Teachers to provide professional development (PD) to its teachers.

Smith STEM School teachers participated in the Science Center's Inquiry for Teaching and Learning series, receiving inquiry-based PD over a three-year period. Unlike traditional PD programs, the Science Center's whole-school model trains every teacher schoolwide in the inquiry process, which harnesses students' natural curiosity and desire to learn. While teachers gained content knowledge during their PD, they learned much more than just science. Lecturing and memorization were replaced with student-driven lessons, enabling kids to formulate and answer their own questions with the guidance and support of their teachers.

Smith STEM School created a culture of inquiry-based learning by engaging all subject and grade-level teachers (not just science teachers) in Science Center training. The result—higher achievement for students and confidence for teachers—is not limited to science classrooms. Inquiry is a powerful approach to teaching and learning that makes lessons in any subject meaningful and enduring for students who are deeply engaged in exploration of the world around them. ■



Thank you for your support of the Connecticut Science Center.

For additional information, contact John Bourdeaux, Vice President of Advancement, at (860) 520-2131 or jboudeaux@CTScienceCenter.org.

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