



September 2023 NEWSLETTER

Upcoming Events

TEP

Taking a Bite out of Cancer

- October 26th ; 5:30-6:45 (EST)

[Click here to register!](#)

STEM Lyceums

From Molecules to Medicine: Pathways in Pharmaceuticals and Therapeutics

- October 25th; 4:30-5:45 (EST)

[Click here to register!](#)

For Teachers & Students

STEM Spotlight

Jessica Buck



We're thrilled to spotlight Jessica Buck, a trailblazing figure in the automotive industry and a beacon of community engagement. With a remarkable journey that began in 2015, Jessica has risen to the esteemed position of Senior Vehicle Dynamics Engineer at Toyota's North American R&D headquarters in Michigan. There she embarked on responsibilities to develop the dynamic performance of the all-new Tacoma. She was specifically in charge of how comfortable the ride is, and how it handles in both standard and off-road driving terrains. She also leads simulation activities to meet routine and emergency performance targets. In a well-deserved accolade, Jessica Buck was recently celebrated at the prestigious 2023 Women MAKE Awards for her leadership in industry and for making contributions in her community. When she is not working hard to develop the latest in Toyota products she volunteers as a grief facilitator at local healing centers for grieving children, teens, young adults, and their families. We salute Jessica for her outstanding achievements and unwavering commitment to both her professional field and her community.

Teacher Enrichment Program

Teachers can join us this year in our Virtual Bite of Science and College & Career Panels to learn about new cutting-edge research and technology.

STEM Lyceums

Students can join this virtual club to build STEM communities and engage in discussions and explorations of STEM concepts and STEM career pathways.

STEM News

[How Empty Office Spaces Can Be Converted into Homes - Scientific American](#)

Summary:

With an increasing number of businesses offering remote option to employees or moving to being completely remote due to COVID-19, a growing number of empty office buildings have become a common fixture in most big-name cities. A pilot program, announced by Boston's Planning and Development Agency in July 2023, offers incentives to building developers who convert office buildings into residential buildings.

While there are many obstacles in place for the conversion of these office buildings (HVAC, plumbing, electrical, cost) it is still very doable. With a high demand for rental units and cities like Boston and San Francisco providing incentive this could be a successful and lucrative project for someone with creative vision.

Partner Opportunities

LabXchange

LabXchange, created at Harvard University, is a global science classroom that provides high-quality science education to both students and educators for free! Understanding that there is no one size fits all when it comes to learning, LabXchange empowers tailoring your learning to suit your individual needs.

Experiment with the joy of discovery through risk-free lab simulations and interactive learning content. Sign up for free [here](#) to begin an exciting journey with LabXchange's growing digital library and engage in premium science content and enjoy a top-notch learning experience.

STEM Bellringers

Click the links for the answers

Physics:

[How do free energy machines work?](#)

Earth Science:

[How do wells get their water from underground rivers?](#)

Chemistry:

[Why is plastic not used in home construction?](#)

STEM Activities

Cool STEM

New fabric mimics Polar Bear pelt for warmth.

Want to stay as warm as a polar bear, especially with the winter months quickly approaching? Well, Trisha Andrew, a materials engineer working at the University of Massachusetts Amherst has developed a unique material to make that happen. Polar bears have a layer of hollow hairs that channel light from the sun to their skin. The layer of hairs keeps the heat from the absorbed light from escaping. Andrew and her colleagues have created a material to mimic polar bear fur. The bottom layer is formed by using Nylon coated with a polymer called PEDOT, which helps absorb light similar to a polar bear's skin. They have also added a lightweight layer of fabric made with polymer polypropylene called Agribon AG-19 that helps carry light to the skin like polar bear hair does. If you would like to know more and other interesting engineering news: <https://www.snexplores.org/>



STEM Scholarships/Internships

Students

[The Gates Scholarship](#)

[GE-Reagan Foundation Scholarship Program](#)

[Ron Brown Scholarship](#)

[Sierra Nevada Corporation Women in STEM Scholarship](#)

[Amazon Future Engineer Scholarship Program](#)

[Foot Locker Scholar Athletes Program](#)

[McDonald's Hacer National Scholarship](#)

[United States Senate Youth Program](#)

Teachers

[Albert Einstein Distinguished Educator Fellowship \(AEF\) Program](#)

[Fund for Teacher Fellowship Grant \(Opens Oct. 1\)](#)

[Connecting Mathematics to Other Subject Areas](#)

[Classroom Research Grant](#)

[National Science Teacher Award](#)

Classroom Activities

["3D Printed" Racers](#)

[Volleyball Engineering](#)

[Mix up some edible slime](#)

[Build your own Newton's Cradle](#)

[DIY Vacuum Chamber](#)