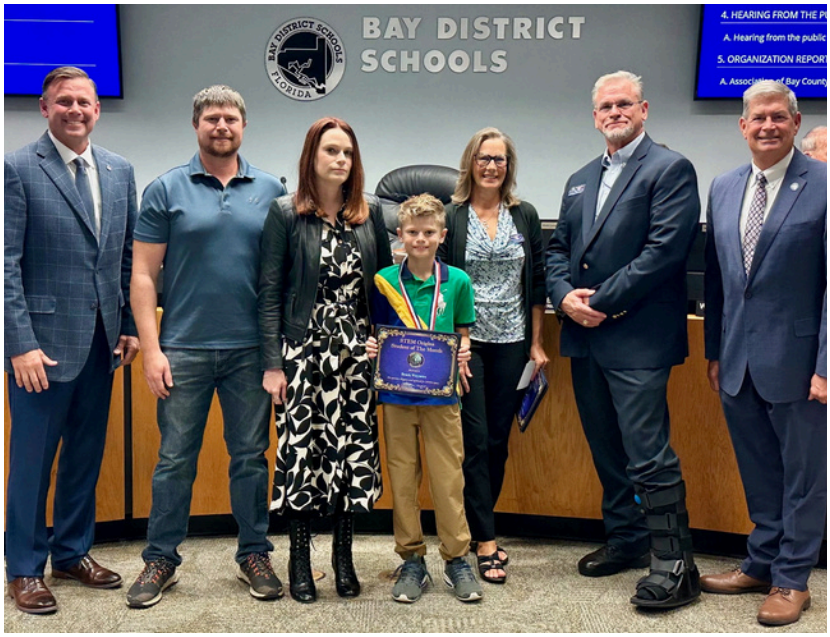
ISSUE #8

ORIGINS

STEM Origins Foundation

December 2025



Brock Waymire: Student of the Month

Congratulations to Brock Waymire, our November STEM Origins Foundation Student of the Month. Brock, a 5th grade student from Patronis Elementary, was chosen from many out-standing candidates. At the November 18 school board meeting, Brock received a STEM Origins medal, an award certificate, and a gift card for Texas Roadhouse. He was nominated by his STEM teacher, Ms. Kelly Hodges, as well as his classroom teacher, Ms. Tina Fisher. They were presented with a copy of Brock's award and also received Texas Roadhouse gift cards to acknowledge their dedication and enthusiasm for teaching.

Here are excerpts from Brock's nomination which highlight the ways in which he exemplifies our core values:

Passion: His curiosity comes through in the questions he asks and the ambitious projects he undertakes. In class and outside of it, he always wants to learn how things work and uses that curiosity to solve real problems.

Diligence: Brock tackles every challenge with determination and always gives his best effort. Even when things get tough, he stays focused and keeps looking for new ways to solve problems. He demonstrates self motivation and a desire to learn and grow and develop essential skills needed for future success.

Aptitude: Brock has a real talent for STEM. He picks up new ideas quickly and knows how to

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Brock Waymire (continued)

use them in practical ways. He often goes beyond what we cover in class, exploring harder topics and making smart connections that show how well he understands the material.

Collaboration: What really makes Brock stand out is how well he works with others. He does his best in group settings, always listening, sharing ideas, and helping his classmates. He creates a positive, welcoming environment and encourages everyone to join in and learn together.

Brock is a shining example of the next generation of STEM leaders! STEM Origins selects one student from all grades across the Bay County School District for each month of the school year in recognition of those who most reflect our core values: Passion, Diligence, Aptitude for STEM, Collaboration and Cooperation.

Meet a Volunteer: Dean Solvason, Electrical Engineer

After graduating high school, Dean joined the Marine Corps and began working on F-4 Phantoms. Upon separation from the service, he attended Fresno State University graduating with a BS in Electrical Engineering. Soon thereafter, Dean married his wife of 40 years, Natalie.

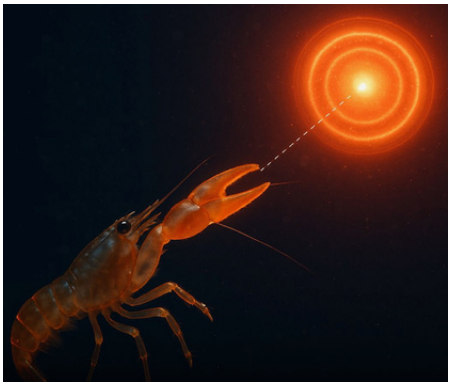
He signed on with Hughes Aircraft in Los Angeles, where he designed Automated Special Test Equipment for RADAR programs for the Air Force, Navy and Marine Corps. Dean moved to Aurora, Colorado in 1994, where he designed satellite ground stations for the Department of Defense, NASA's Earth Science Missions, and Direct TV ground stations as a contractor with Raytheon.

Since retiring in 2015 and moving to Inlet Beach in 2020, Dean has undertaken a few volunteer roles. He has enjoyed working with Alaqua's Wildlife Rehab program, and has been recently working with the Emerald and Forgotten Coast Adventures nonprofit organization, teaching marine science to kids ranging from 2nd grade through high school. He is enthusiastic to make contributions to the STEM Origins effort as well.

In his spare time, Dean likes to surf fish and provide outreach with his 8" Dobsonian telescope. He has held neighborhood star watch events and participates in activities with the Astronomical Society of Bay County when he gets the chance.

The Tiny but Mighty Pistol Shrimp

The pistol shrimp may be tiny, but it has one of the strongest claws in the ocean. When it snaps its claw shut, it shoots a fast jet of water that forms a bubble. When the bubble collapses, it releases a burst of energy that can be as hot as the surface of the Sun. The snap creates a flash of light and a shockwave strong enough to stun prey.



This happens because of a process called cavitation, not heat from the shrimp itself. Scientists study this shrimp to design better underwater tools and medical technology.

Attribution: The Mechanical Mind

Ivan Getting: Helping Us Find our Way

Long before your phone could tell you where the nearest pizza place was, one scientist was imagining a way to know your exact location anywhere on Earth. His name was Ivan Getting, and his ideas helped create the Global Positioning System (GPS) we use every day.

In the 1950s, Getting worked as a research leader at Raytheon, a technology company. At the time, cars did not have navigation screens, and satellites were still new ideas. Getting wondered if satellites in space could send signals down to Earth. By measuring those signals, a person or vehicle could figure out exactly where they were, even while moving fast. His idea became the foundation for GPS.

Turning this idea into reality took years and a lot of government support. But the effort paid off. Today, GPS helps airplanes land safely, guides ships across oceans, supports emergency responders, and helps families find their way on road trips. Farmers, scientists, and even weather forecasters use it too.

Getting did not stop there. He also helped improve radar systems and worked on early U.S. space programs, including Projects Mercury and Gemini, which sent astronauts into space. He even helped develop powerful laser technologies.

Ivan Getting was born in New York City in 1912. He studied at MIT and later earned a Ph.D. from Oxford University. For his many contributions to science and technology, he received top national honors. His curiosity and big ideas continue to guide the world—literally.

U.S. Patent No. 2,709,773
Inducted in 2004
Born Jan. 18, 1912 - Died Oct. 11, 2003

Attribution: https://www.invent.org/inductees

Stem Cells: Growing Hearts and Brains in Space

NASA's Expedition 73 crew on the ISS is culturing stem cells in microgravity this month to transform them into heart and brain tissue, revealing how weightlessness tweaks gene expression for better regeneration. Early results show faster differentiation without Earth's pull, hinting at space-optimized medicine.

This emerging technology could revolutionize drug testing and organ printing for astronauts, or Earthlings, tackling shortages in transplants. In zero-gravity, cells grow more uniformly, like bubbles in a cosmic soda; this mission might brew the first "space heart" for lab use.

Attribution: NASA

Activities and News

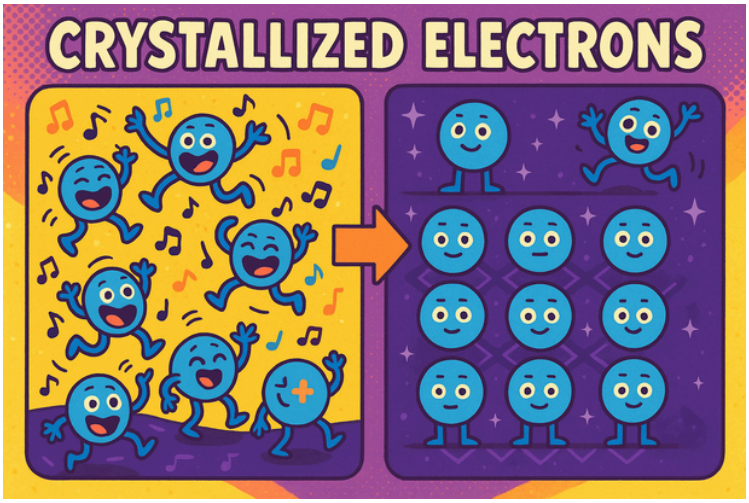
Rutherford High School hosted a **FIRST Tech Challenge** robotics competition on November 1st. The STEM Origins Foundation was impressed as 16 teams from Northwest Florida competed with custom-built robots designed to perform specific tasks, like picking up items and placing them into baskets for points within a 2.5 minute time limit.

Rutherford's Catastrophic RAMifications team of 13 members wowed with creativity and collaboration, showing off skills in chassis construction and coding as their robots launched balls into baskets in a fast-paced test of skill and strategy. The event celebrated innovation, teamwork, and problem-solving, key values for the next generation of STEM leaders.

Electrons Playing Freeze-Dance?

Florida State University theorists, in tandem with experimentalists, unveiled a tunable quantum phase where electrons crystallize into geometric lattices before "melting" into fluid chaos—or a hybrid mode where some freeze while others bounce freely.

Picture kids in a game: music plays and everyone dances wildly; music stops and everyone freezes in perfect rows.Scientists found electrons inside super-thin layered materials doing just that. The electrons would switch instantly between a frozen crystal pattern and a flowing liquid, sometimes even doing both in the same material.



Why it matters: Precision control over these states could engineer "smart" materials for energy-efficient electronics, like batteries that self-regulate flow without wasting a watt.

Attribution: Nature

Fun(d)raising

A special thank you to **Lori Goetz**, whose recent donation was boosted by her employer, PulteGroup Inc., turning a $500 donation into a gift of $1,000! Every matching gift doubles the difference our supporters can make. Do you work for a company that matches donations? You can learn more and make your gift go even further at https://stemorigins.org/donation-for-stem-education/

So far we have **raised over $70k** to support STEM Education in Bay County, and it is with deep gratitude and joy that we want to celebrate that achievement with all our friends, volunteers, and donors who made it possible. We regret having to cancel our holiday gala this year, where we planned to recognize our donors, but hope to celebrate with you in the future!

Spring Top Golf Fundraiser - Mark your calendars now, and purchase your early bird tickets for just $65 now through Feb 14th! The 3 hr experience of unique golf games and fun with friends will include a food buffet, soft drinks, and tips. Regular rate tickets ($78) will be available Feb 16th-April 16th. This is a fantastic deal, because the retail rate for 3 hours at Top Golf on a Sunday afternoon is $156! Tickets can be purchased at our website: **https://www.zeffy.com/en-US/ticketing/spring-topgolf-event--2025**

Upcoming Events

27 January: *Gulf Coast State College Career Fair*

12 April: *Thunderbirds Air Show*
STEM Origins will host interactive demos.

26 April, 12-3 PM: *Top Golf Spring Fun(d)raiser*

Ongoing Weekly: *Bozeman STEM Club*
The Bozeman STEM club meets weekly with 3rd-5th graders on STEM topics.Our volunteers are currently acquiring the needed background clearance to be able to serve as mentors for this group.

STEM Excitement at Bozeman's First Family Reading Night

The STEM Origins Foundation brought an electrifying dose of science, technology, engineering, and mathematics (STEM) to the inaugural "Family Reading Night" at Deane Bozeman Elementary School on November 18, 2025. The event, which included interactive activities, guest readers, and even live animals from the school's FFA chapter, was a resounding success and well-attended by the school community.

Volunteers from STEM Origins hosted engaging stations, showcasing a variety of education STEM tools and resources that the foundation has generously donated to schools throughout Bay County. The hands-on displays perfectly complemented the evening's focus on literacy, demonstrating how reading and STEM education go hand-in-hand in fostering curious, lifelong learners.

About Us

Our mission is to support local education in science, technology, engineering, and mathematics (STEM) with projects that inspire students and teachers at every level of the academic ladder from kindergarten through college.

We seek to increase the quantity, quality, and diversity of high school and college STEM graduates. Our approach involves engaging students early (K-5) to foster interest in STEM subjects and maintaining engagement throughout middle school, high school, and college with progressively advanced activities.

Programs include providing hands-on experiences, classroom equipment, and access to STEM professionals through visits, virtual presentations, and coaching on innovation and long-term goals. We plan to offer scholarships for college STEM fields and STEM camps for all grade levels overtime. Additionally, we support STEM teachers through grants for career development, professional growth, and innovative classroom experiments to enhance student learning experiences.

The STEM Origins Foundation is a 501(c)(3) nonprofit organization in Bay County, Florida. IRS Certification, Articles of Incorporation, and By-Laws are available on our website. Also visit us on Facebook.

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