

STARBASE NEWSLETTER



September - December 2021 - Issue 1

Gov. Gianforte Visits STARBASE Fort Harrison



The Adjutant General of Montana, Major General Pete Hronek, Governor Greg Gianforte visited STARBASE Fort Harrison this past June to see what STARBASE was about firsthand.

Greg Gianforte was elected the 25th Governor of Montana on November 3rd, 2020 and assumed office January 4th, 2021. He tapped Major General (MG) Pete Hronek to lead the Department of Military Affairs as the new Adjutant General (TAG). MG Hronek assumed command as the TAG in January of this year and has provided integral leadership and support to both Montana STARBASE programs.

This past summer, MG Hronek invited Gov. Gianforte to visit each Montana STARBASE site to experience firsthand what our programs are all about. The students were delighted when Gov. Gianforte stopped by. Gov. Gianforte spoke with the students about his role in our state's government, the importance of STEM and Montana's National Guard, and gave the students opportunities to ask him questions.

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MG Hronek accompanied the Governor on his visits and stated, "I was pleased that Governor Gianforte accepted my invitation to visit our STARBASE sites. We are proud of our STARBASE program and believe strongly in its mission to engage and inspire young Montanans in STEM. Governor Gianforte is a strong supporter of education and enjoyed meeting the STARBASE staff and interacting with the students. We hope to expand our STARBASE program here in Montana so we can continue to positively impact young students, inspire, and invest in their future."

The staff members of both STARBASE Fort Harrison and STARBASE Great Falls appreciated Gov. Gianforte and MG Hronek stopping by this past summer. They are grateful to be back to normal operations this school year as the country and state continue to navigate the pandemic.

We are proud of our STARBASE program and believe strongly in its mission to engage and inspire young Montanans in STEM.
-Major General Pete Hronek-

Within the STARBASE building:

Two
Classrooms

Two 80"
interactive
displays

30 swivel
desks

40
student
iPads

30 student
laptops

Learn about the STARBASE Program and Staff

STARBASE Fort Harrison was founded in 2007 and has hosted more than 10,000 students since. The national STARBASE program was founded in 1993. There are approximately 80 STARBASE locations throughout the U.S. including Puerto Rico and Guam. Montana has two STARBASE locations: Helena (Fort Harrison) and Great Falls. STARBASE is funded by the Department of Defense (DoD) and is administered by the Department of Military Affairs of the State of Montana. STARBASE is the premiere DoD STEM (Science, Technology, Engineering, and Math) education program. The STARBASE mission is to expose our nation's youth to the technological environments and positive civilian and military role models found on Active, Guard, and Reserve military bases and installations, nurture a winning network of collaborators, and build mutual loyalty within our communities by providing 25 hours of exemplary hands-on instruction and activities that meet or exceed the National Standards.



From left to right: Falcon, Hollywood, Newton, and Doc.

Director:

Dr. Michael "Doc" Vannatta

BA - Carroll College - 2002

MS/PhD - University of Washington - 2007/2009

Deputy Director/Instructor:

Mrs. Kaylee "Hollywood" Nathe

BS - Montana State University Northern - 2013

State of Montana Certified Educator

Lead Instructor:

Mr. Devon "Falcon" Lawson

BS - Montana State University - 2009

State of Montana Certified Educator

2.0 Coordinator/Instructor:

Ms. Kinsey "Newton" Vavruska

BS - Montana State University - 2018

State of Montana Certified Educator

Students attending Warren, Central, Four Georgians, Jim Darcy, and Broadwater Elementary Schools Visit STARBASE

The STARBASE staff was thrilled to have students once again experience the full 5-day STARBASE program this school year. Last year, because of the pandemic, things obviously looked a bit different and consequently students were only able to visit for two days instead of five. We were blessed to have a functioning program, albeit limited, as some STARBASE locations around the country were unable to host students at all.

Our year started off with Warren Elementary students from Mrs. McNay and Mrs. Klemp's classes visiting and learning with us. Thing 2, a Warren student, said "STARBASE is a place to expand your creativity, for me STARBASE made me want to look into STEM jobs for the future. When we got to make landers, make elephant toothpaste, and many other various activities I think everyone enjoyed (it). I enjoyed STARBASE very much, I wouldn't mind going to STARBASE again!"

"STARBASE is a place to expand your creativity, for me STARBASE made me want to look into STEM jobs for the future" - Thing 2, Warren Elementary School

Mrs. McNay, a veteran of many visits to STARBASE over the years stated, "STARBASE is an amazing program that my students and I look forward to every year. Each year the students love the teachers and are excited to go each day. Each day, the students enjoy all the experiments and activities that they get to do, from shooting off rockets to programming robots. It is all amazing. This program is irreplaceable, and as a teacher I couldn't ask for a better way to start off the year."

Mr. Napoletano's class from Central Elementary School visited STARBASE earlier this fall as well. Chelsea Segrest, a Central Elementary School parent, stated, "Our son had a great time at STARBASE. Each night at dinner he had so much to share about the hands on activities that he was learning. This led our family to further discussions about science, technology, engineering and math." The STARBASE curriculum is designed to engage students in hands-on, inquiry-based lessons, and it is wonderful to hear that students continue their learning at home by sharing their experiences with their families.

October was Four Georgians Elementary month at STARBASE as the students from Ms. Heaton's, Mrs. Hoovestall's, and Ms. Skinner's classes joined us. Ms. Skinner's class got to enjoy a guest speaker from ExplorationWorks who talked science and performed some cool demonstrations for the students.

Jim Darcy and Broadwater Elementary school students joined us at STARBASE during the months of November and December. In addition to the core curriculum of science, technology, engineering, and math, some of the classes enjoyed presentations from guest speakers with ExplorationWorks, The Montana Historical Society, Montana Drone Company, and Anderson Zurmuehlen, an accounting and IT services firm.

STARBASE Classes

by the Numbers

Warren: 41 students

Central: 22 students

Four Georgians: 83
students

Jim Darcy: 80 students

Broadwater: 58
students



Jim Darcy
students
Megapenguin,
Wolf, Fox, and
Luna complete a
lesson centered
around measuring
liquid volumes at
STARBASE in
November, 2021.

LEGO Education's Latest Robotics Product, Spike Prime Robots, Now Being Utilized by STARBASE Students

Robotics has been part of the core STARBASE curriculum for years now. A variety of robots are used at STARBASE, but LEGO robotics are probably the most popular among the students. LEGO Education released their NXT robots in 2006, and STARBASE locations throughout the country started implementing them immediately. The NXT robots were upgraded in 2013 when the EV3 product line was released. STARBASE Fort Harrison (SBFH) has used both the NXT and EV3 models throughout the years. The latest generation, the Spike Prime, was introduced in 2020. SBFH is one of the first STARBASE locations in the country to integrate them into their curriculum. The Spike Prime offers a number of advantages over the EV3 generation. The hub, or brain, of the robot is improved by being more powerful, smaller, lighter, and utilizes a larger display screen. The motors and sensors are also improved over the EV3 counterparts. The programming app more closely resembles industry programming languages. The Spike Prime is also more functional as far as input/output ports and offers numerous customizable options for builds.



Two of the many possible builds of Lego Education's newest generation robot, the Spike Prime.



A complete build kit for a Spike Prime Lego robot

Kinsey Vavruska, a STARBASE instructor, states, "The motors are much smaller without decreasing the power and stability of the robot and its movement capabilities. From a building perspective, the attachment points are endless. The new Technic and classic brick connections are something of awe." The SBFH staff has submitted novel Spike Prime robotics lessons to the Department of Defense in hopes they are approved. They are designed to increase student engagement with the robotics lesson while improving learning outcomes.

STARBASE Graduate's Path to a STEM Dream Job

As told by Jonathan Garber

For as long as I can remember, I've had a fascination and a love for aviation. I was fortunate to have grown up in a household that was rooted in aviation. I went to STARBASE with my fifth-grade class at the beginning of 2009. Thinking back, I have fond memories of loading onto the bus with my classmates and heading to Fort Harrison for our first day at STARBASE. I didn't know at that moment the impact my time there would have on my life.

During our time there, we learned about a broad array of STEM-related topics. Most notably for me, we covered multiple aerospace topics, from the principles of flight to rocketry and space flight. In our final days at STARBASE, we built model rockets to help demonstrate some of the concepts we'd been taught throughout the week. This fed into my pre-existing fascination with aviation and nurtured a new interest in rocketry and spaceflight. Following our model rocket launches at the end of our week at STARBASE, I went home and began designing and building my own model rockets. Building model rockets and eventually model airplanes became an obsession. It became an outlet for me to try to design and build anything and everything I could imagine.

Upon graduating from high school in 2016, I accepted my first job as a Systems Test Engineer Intern with Northrop Grumman on an aerospace program. As an Intern, I would help integrate, test, and evaluate new systems on the air vehicle our program worked on. Two years later, in 2018, I accepted my second job in the aerospace field as an Unmanned Aerial Vehicle (UAV) Operator for Northrop Grumman.

Thinking back, I have fond memories of loading onto the bus with my classmates and heading to Fort Harrison for our first day at STARBASE. I didn't know at that moment the impact my time there would have on my life.

- Jonathan Garber -



Jonathan Garber at STARBASE in March, 2009, preparing to launch a rocket he worked on that week.

A 2019 picture shows Jonathan Garber with one of the Unmanned Aerial Vehicles (UAV) he piloted for Northrop Grumman in support of the U.S. Army during operations in Afghanistan.



During my time as a UAV Operator for Northrop, I deployed to Afghanistan in support of the US Army; I supported this role until our contract expired in May of 2020. Following the end of my adventure to fly UAVs overseas, I accepted what can only be described as my dream job as a Satellite Operations Engineer for Maxar Technologies. It is a joy to work in a place where we day in and day out take orbital imagery and endeavor to positively impact our world.

I often think back to my time at STARBASE and to me watching in awe as my fifth-grade class launched our rockets and wonder where I would be had it not happened. It's not very often in life that you can look back and see one singular event that shaped your life trajectory. I can without a doubt say that my time at STARBASE was that event, and I would not be where I am today had I not had the incredible opportunity to attend this fantastic program.

VOLUNTEERS NEEDED

**STARBASE 2.0 (AFTER
SCHOOL STEM PROGRAM)**

PLEASE CONTACT KINSEY VAVRUSKA AT
KVAVRUSKA@HELENASCHOOLS.ORG OR (406) 459-4720

Festival of Trees: STARBASE Style

The staff of STARBASE Fort Harrison participated in the Festival of Trees fundraising event for the Intermountain organization. Intermountain is a nationally recognized non-profit providing hope and healing to children, youth, and families in need of improved mental and behavioral health.

The staff donated their own time and money to design a STEM themed Christmas tree. The tree came with a mini Sphero robot, chemistry kit, snap circuit, stomp rocket, and STEM activity kit. In addition, there was some STARBASE gear included in the package. The tree ended up selling for \$300 in support of the important work Intermountain does in our community. The STARBASE staff plans to make participating in the Festival of Trees event an annual tradition.



The STARBASE staff designed this STEM themed tree package for the Festival of Trees fundraiser this past December.

The STARBASE staff plans to design, construct, and donate a new STEM based tree each year for the Festival of Trees event



New STARBASE Logo - Website Under Construction

STARBASE recently completed a rebranding and now has a new logo. A new website is under construction and will be functional soon.