

Wright-Patt Flyer

Winter at STARBASE Wright-Patt

What could be more exciting than a day of Rocket Launching at STARBASE Wright-Patt? What if we throw in a temperature of 29°F with a wind chill of 25°F and a previous night's 4 inches of fresh snow? Still interested?

This scenario became reality this winter. With two hour delays and snow closures, it seemed that rocket launches might be delayed until Spring. But, we plowed on (pun intended!), and were able to have all of our Session 3 students complete successful launches.

Could the weather affect anything else? How about a water pipe bursting in our Computer Lab due to fluctuating freezing temperatures. No worries. Luckily, this occurred after students had left and we were back up and running the next day.

No matter what the situation may bring. Snow, sleet, freezing rain, hail, we at STARBASE Wright-Patt stand ready to educate our students with high energy and purposeful STEM activities.

~ Anchorman



Students from Spinning Hills Middle School get ready to launch their rockets.

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Meet Our Staff: Kim "EmeraldSky" Egbert

Kim "EmeraldSky" Egbert joined STARBASE Wright-Patt in August of 2010 as an instructor and the STARBASE 2.0 Mentor Coordinator. She is originally from Galion, Ohio and graduated from Galion Senior High School. EmeraldSky received her Bachelor in Elementary Education (1990) and Master in Middle Childhood (2001) degrees from The Ohio State University. During her time in college, she was a member of the Ohio Air National Guard with the 179th Airlift Wing in Mansfield, Ohio. Kim spent 15 of her 20 years teach-

ing 6th and 7th grade science in Galion City Schools. Part of the summer, Kim and her husband, Dan, teach at the Keystone Science School in Colorado. In her spare time, Kim likes to be outside and to spend time with family and friends.



EmeraldSky talks to students during a graduation ceremony.

Executive Director

Dann "Goose" Andrews

Site Director

Connie "SkySailor" Jensen

Instructors

Angela "DayDreamer" Riethman

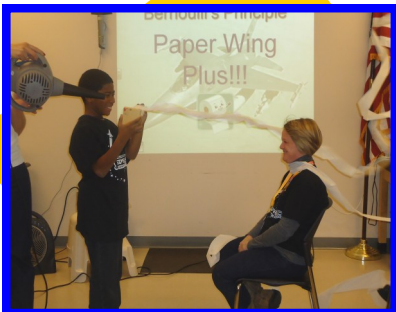
Jason "Anchorman" Streiff

Sue "Wildcat" Brown

Linda "Trekker" Hupman

STARBASE 2.0 Mentor Coordinator

Kim "EmeraldSky" Egbert



"Coffee Gal" learns about the effects of Bernoulli's Principle when applied to tissue paper.

STEM Connections: Bridging STARBASE Activities to the Classroom

Up and Coming Workshops for your CEU Enjoyment!

Hard to believe that the school year is already three-quarters of the year over! As a new calendar year begins, thoughts turn to continuing education credits! Here are some up and coming STEM workshops for teachers to help easily achieve your relicensing goals.

First, is the ever inspiring weekend of fun at the 9th Annual Dayton/Miami Valley TechFest 2011 held at Sinclair Community College. The event will be held the weekend of February 19-20, 2011 and includes STEM activities for students and adults, with speakers ranging from F-16 Fighter Pilots to an Astronaut Teacher. STARBASE

Wright-Patt will be leading SMART Board activities in geometry and physics, along with teaching people how to fly. Come check out our booth, Saturday from 10-6. Teacher Workshop Registration ends February 11th at 5:00pm. To register visit: <http://www.ascd Dayton.org/TechFest/workshops.html>.

Next we have the Air Force Association (AFA) Workshop scheduled for April 16, 2011. STARBASE Wright-Patt will be conducting classes on SMART Board usage in elementary, middle school and high school classrooms. Look for information from AFA coming soon.

Lastly, we have the Inaugural Air Force Research Laboratory STEM-ulate Your Mind Workshop. This will have hands-on lessons on History of Flight, Air Vehicles, Thermal Insulators, Lab TV, AFRL tours, and more. Participants will come to STARBASE for experiences in nanotechnology, rocketry, and GPS! There will be two identical sessions, June 20-24 and August 8-12. Be on the lookout for sign-up information by checking our Educational Outreach Website, http://edoutreach.wpafb.af.mil/ed_outreach/pages/events.html

~ Anchorman

What Students, Teachers, and Administrators are Saying About STARBASE Wright-Patt

When asked, "Why do you like STARBASE?" They said....

"You just don't read about it, you do it!" - Nati'Fan, Spinning Hills Middle School student

*"I like the hands-on experience of science learning and the excitement of the instructors for science!"
-Corgi Mom, Spinning Hills Middle School teacher*

"It's exciting and you get to learn about new stuff."- Honolulu, Spinning Hills Middle School student

"It's fun, exciting and you get to learn new things." - Black Hawk, Spinning Hills Middle School student

"I've got too many things!"- Just N Case, Spinning Hills Middle School student

3rd and 4th Session Attendees

Session 3 - Kitty Hawk Elementary School and Spinning Hills Middle School

Session 4 - Spinning Hills Middle School and Monticello Elementary School

Students from Kitty Hawk Elementary School brave the Ohio weather to launch their bottle rockets.





The Wright-Patt STARBASE 2.0 after-school mentoring program has now reached the halfway point in the school year.

STARBASE 2.0 teams have spent the last eight meetings developing as units. Each group of 9 to 10 students and three mentors have used Team Exploration activities, goal setting exercises, and Science, Technology, Engineering, and Math (STEM) explorations to achieve this.

In December, teams were involved in a STEM Career Exploration meeting. Rotating around various locations within Spinning Hills Middle School, students participated in exercises of structural engi-

neering, physic phenomenon, and STEM career web quests. Speaking to the teams about STEM opportunities was Colonel Ronald Stauffer, an Aerospace Engineer from Wright-Patterson Air Force Base.

Students are currently working on their LEGO robotics project. After visiting the FIRST LEGO League (FLL) robotics regional tournament at Wright State University, students and mentors were prepared to begin their own journey. In small sub-groups, teams built EduBots and added touch and ultra sonic sensors.

During the second session in January, teams were fortunate to receive training from the Brickheads, a FIRST LEGO

League Ambassador Team. The Brickheads are comprised of 9 to 14 year old members, who have won numerous awards and are experienced in teaching others about the logistics of LEGO robots.

Meetings will continue twice a month through May. Events will include an in-house robotics competition, a derby car race, and an end of year celebration.

Questions & Comments: Kim Egbert- Mentor Coordinator
kimstarbase@gmail.com



The Purple Pizza Eaters are amazed by the mystery of the Helium Hoop.



The Little Green People learn about LEGO Robotics

Volunteer Spotlight: : Colonel Arthur F. Huber, ASC/CV



"STARBASE is a wonderful program put on by wonderful folks. It's great seeing the kids exposed to technical areas in a manner that breaks down the 'intimidation factor' such that they can get excited about STEM activities. They see, touch, do and learn things that enable them to appreciate the power and beauty of the aerospace field. I feel privileged to be able to support this program in a small way and to help it achieve its goals."

-- Colonel Arthur Huber

Colonel Arthur F. Huber II is the Vice Commander, Aeronautical Systems Center. He assists the ASC Commander and Program Executive Officer for aircraft procurement and modernization in leading the Air Force's center of excellence for the acquisition of aeronautical systems. Colonel Huber was commissioned in 1983 as a distinguished graduate of the Air Force Reserve Officer Training Corps program after completing studies at the University of Notre Dame.

Colonel Huber came to Wright-Patterson Air Force Base when he was assigned as the Commander of the 312th Aeronautical Systems Wing (312 AESW) in the summer of 2009. In March 2010, he was reassigned as the Vice Com-

mander, ASC, the parent organization to the 312th. His inspiration for his career came from his father, who was a private pilot, flew for the Civil Air Patrol and developed in him a great appreciation of all things aerospace. In addition, he grew up in South Florida and watched the launch of the final Apollo moonshot and was active in model rocketry and model airplanes.

Some of his proudest career accomplishments include earning an Air Force Reserve Officers Training Corps Scholarship to Notre Dame to study aerospace engineering, attending the Air Force's Test Pilot School, traveling to Iraq to solve warfighter problems with some of our weapon systems, and helping other

people realize their own career goals.

When Colonel Huber comes to visit, he brings videos to help catch and enhance the students attention to STEM. From a video on the development of the "Sidewinder" Missile to his own personal experiences, students get a good sense of Science in Action. We at STARBASE Wright-Patt are very proud to have Colonel Huber come and share his experiences with our students.

- Colonel Huber and Anchorman

Students from Spinning Hills Middle School learn which commendation beads they have earned.

A STARBASE Tradition



A popular tradition at STARBASE Wright-Patt has become our graduation ceremony. Upon completion of each session, our staff visits each school and conducts a graduation ceremony to honor the students and their successes at STARBASE. Parents, teachers, and administration are invited to celebrate the accomplishments of their students and to get a glimpse at the life of a STARBASE student.

Each ceremony begins with a slideshow documenting the activities each class took part in at STARBASE. This allows them to reflect on the time they spent at STARBASE, and also gives parents and administration a chance to see what they are learning each day. After the slideshow, students are called one by one to be awarded both a certificate of completion and the ID lanyard they wore during their time at STARBASE. On these lanyards have been placed commendation beads to show the various successes each student had during his or her time at STARBASE. Commendation beads can be earned for the following activities ...

- **Red** for successfully landing the Flight Simulator X
- **Orange** for hitting the straw rocket target
- **Yellow** for lighting the light in geometry

- **Green** for a successful landing for Eggbert
- **Blue** for a safe rocket launch
- **Indigo** for creating a mission patch
- **Violet** for perfect attendance
- **Silver** for community service.

In addition to these commendation beads, the STARBASE staff awards a white star, high flyer bead to students we notice going above and beyond during their time with us. The students are unaware of the high flyer bead and learn who has earned it during the graduation ceremony. There is always excitement in the air when a student learns they have earned the high flyer award.

For some schools, the graduation ceremony takes place during the school day. For others, graduation is a night ceremony. At the night ceremonies, our staff arrives early to set up stations displaying the various activities students complete at STARBASE. After the ceremony is completed, students are given the opportunity to take their parents on a journey through the activities and share the knowledge they have gained.

After the students have shared their experience with their parents, we take a few minutes to talk to everyone about STARBASE and thank them for their dedication and participation in the

program. We have developed many positive relationships with our local school districts and enjoy taking the time to honor the students for their accomplishments. This is a tradition that is here to stay at STARBASE Wright-Patt and one that everyone enjoys.

~DayDreamer



Colonel Ron Stauffer addresses the crowd at the Parkwood Elementary Graduation. During his comments, Colonel Stauffer emphasized the importance of STEM education.



Students from Parkwood Elementary demonstrate the various tasks completed during their time at STARBASE..

FIRST LEGO League Robotics

Students from all over Ohio have been given the opportunity to compete in FIRST LEGO League Robotics competitions. Through this program, student teams are challenged to create robots from LEGO's and program them to complete given tasks on a competition table. Teams are also challenged to complete a research project that correlates to the year's theme. Once the competition begins, teams are judged on teamwork, the design and programming of their robot, their research project, and also how well they were able to complete the table tasks. This year's theme is *Body Forward* and has its participants building robots to complete medical tasks on the competition table. They were also challenged to research a topic in the Biomedical Engineering field and present their solution to a team of judges. Once each competition is completed, awards are given in numerous categories to honor the students' hard work.

In support of the program, the staff of STARBASE Wright-Patt has generously volunteered their time to lend a hand in the local regional competition. We were given several duties at the competition, including set-up, referees, referee assistants, tear down, judge assistants and also registration. Our staff will also be volunteering at the State Competition which will take place February 12th and 13th at the Ervin J. Nutter Center in Dayton, OH. These fun filled days show us that STEM education is on the rise!

~DayDreamer



SkySailor meets with a team to review their scores during the table completion.



DayDreamer and SkySailor entertain the crowd during a break in the competition.



SkySailor watches as a team sends their robot to complete its medical tasks.

Additional information on Ohio's FIRST LEGO League program can be found at <http://edoutreach.wpafb.af.mil/Robotics/pages/fll.html>

Site Director's Corner

Technology: Friend NOT Foe!

As a leader in STEM education, STARBASE Wright-Patt strives to offer multiple opportunities for our students to experience a plethora of technology. We share lessons via a presentation system, computer, and Elmo. Our lessons are taught using Microsoft PowerPoint, YouTube, DVD's and Excel. Students interact with the lessons by using our Mimio (SMART Board...sort of), a Classroom Performance System (CPS)

from elnstruction, for daily quizzes, a wind tunnel, microscopes, a force plate, Global Positioning Systems (GPS), joysticks for Flight Sim X, and a personal computer for CAD – ProE, Excel, Flight Sim X, and Google Earth. Students visit our Flight Deck (also known as the Russo Lab – Fun is #1) each week of their STARBASE experience.

A quality STEM lesson may involve students with various technologies. A lesson on Newton's Laws en-

courages students to view a graph created by the force they apply to the force plate. They see real time data as they modify the acceleration to help solidify the force to acceleration correlation. ELMO displays our Newton Cradle giving everyone a great view of action/reaction. After launching their straw rockets and determining their accelerations (a), based on the force (F) applied and

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Wright-Patt

156 Spinning Rd.
Dayton, OH 45431

Phone: 937-255-1575
Fax: 937-255-1585
Email: conniestarbase@gmail.com



“STARBASE Command to STARBASE Orbiter”...Students from Kitty Hawk Elementary participate in a Coordinate Geometry scenario.



DayDreamer teaches a Spinning Hills Middle School student the Bernoulli Boogie.

We're on the Web!

<http://edoutreach.wpafb.af.mil/starbase/index.html>

Site Director's Corner Continued



The Mimio captures Eggbert's landing for the class to see!

the mass (m) of their rocket, students create Excel graphs which reinforce the correlation between F and a .

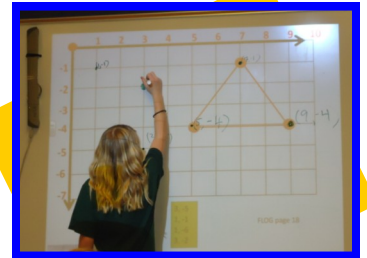
The Mimio, although temperamental, offers a cost effective way to have students interact with lessons. We incorporate this technology in our atmosphere and matter lesson by having students create molecules on the “board”. In Coordinate Geometry, students manipulate the shapes to complete the circuit as well as identify geometric shapes. In Nanotechnology, students manipulate the various items to place them in order according to size.

If money is a problem, and it often is, an ELMO is a great addition to your edu-

cational arsenal. The ELMO is used to display the landing site for Eggbert so everyone can see and learn from what happens! Students can be given an up close and personal view of documents for Nanotechnology, building procedures for Rocketry, crushed cans in Newton's Laws, and many more!

The T in STEM, like the S E and M should be present in as many lessons as possible during students STARBASE experience. Technology is often where we can provide cutting edge experiences for our students. If you are using a particular piece of technology you find exciting and effective, please pass it on!

~SkySailor



A student from Spinning Hills Middle School uses the Mimio board as a part of our Geometry lesson.



A Spinning Hills student jumps on the Force Plate as Anchorman views the data!



Spiderman, a volunteer from Wright Patterson Air Force Base, teaches a Spinning Hills Middle School student to use the wind tunnel.