Volume 16 Issue 1: January 2017

STARBASE

A Department of Defense Youth Program

LOUISIANA

Sponsored by the 307th Bomb Wing
Air Force Reserve

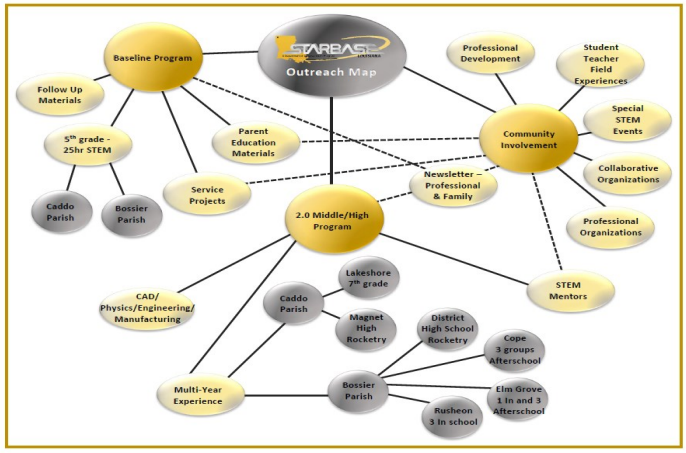
Louisiana Lagniappe

In This Issue:

Kathy "Alpha" Brandon

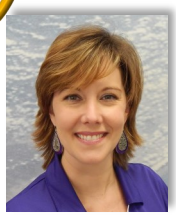
"BEYOND" BELIEF

The poet Ralph Waldo Emerson said, "Unless you try to do something beyond what you have already mastered, you will never grow." STARBASE Louisiana has a long-standing reputation as an organization providing quality STEM experiences in our community. With our service numbers closing in on 30,000 students, educators, and community members over the course of 18 years, we are in the unique position of having "mastered" our craft. However, it is the tradition of STARBASE to embrace Emerson's philosophy "to do something beyond." This "beyond" thinking has been the catalyst for the many layers of our outreach.



In creating the Outreach Map (above), I reflected on our history and our growth. With phenomenal support from the 307th and 2nd Bomb Wing Commands' staffs here at Barksdale, along with a shared vision with our local school districts, and an extremely talented and dedicated staff of STARBASE educators, our program has far surpassed its original mission. But there is always room for growth! We know that our mission must be multi-tiered for maximum impact.

In this newsletter, you will learn about the many branches of our outreach—providing critical information to parents and other educators, collaborations with community partners to help meet the needs in our community, and the great work our staff is doing every day to help prepare our students for the 21st century. "Beyond" is not an option but will always be our belief and driving force!



Laurie "Deuce" Ilgenfritz

MINDSET MATTERS

'Mindset' - a mental attitude or inclination; a particular way of thinking; a person's attitude or set of opinions. Whether or not you have consciously selected a mindset toward learning, you undoubtedly have one. Identifying both your own and your students' mindset is important. If most of the class holds a mindset that discourages mistakes, failure, or even effort, this must be addressed in order achieve the desired academic results.

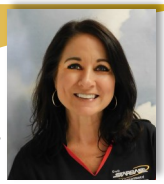
Researcher Carol Dweck pioneered work with mindsets and identified two categories: ***fixed mindset*** and ***growth mindset***. Someone with a fixed mindset generally believes that intelligence, creativity, and character are fixed traits that cannot be changed. A person with a growth mindset believes you can grow your intelligence through practice and effort and that temporary failure is a necessary part of the learning process. This is a very basic explanation of a vast body of research. For more information about fixed vs. growth mindset, read Dr. Dweck's book ***Mindset: The New Psychology of Success*** or visit the ***Mindset Works***[1] website.

In order to help students begin to develop a growth mindset, one can use several approaches. There are many things that parents and teachers can do stealthily which positively reinforce growth mindset. However, it is best to begin by openly discussing the characteristics of the two mindsets, allowing them to understand why growth mindset is more beneficial. Amazon's ***With Math I Can***[2] website is a gold mine of resources for explaining this concept to children. The site applies the concept particularly for math education, however many resources deal with mindset in general. ***Youcubed***[3]***,*** developed by Jo Boaler at Stanford University, is another great resource with a six session course on how to learn math delves into mindset and effective thinking strategies. There is also a course for parents and one which can be used as staff development for teachers.

It is a powerful thing to understand that individuals , not genetics, personality types, or even teachers, have control over their own learning. There is so much great information out there. We encourage you to investigate mindset research for yourself and your children. In matters of the brain, intelligence, and learning, *your* mindset matters the most!

1) www.mindsetworks.com/free-resources; 2) https://www.amazon.com/gp/withmathican; 3) https://www.youcubed.org

VOLUNTEER SPOTLIGHT: MAJ TIMOTHY TRYON

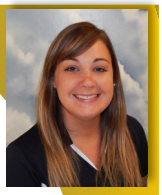


Cathryn "Rocky" Hendrix

STARBASE Louisiana would like to honor ***Major Timothy Tryon*** in our Volunteer Spotlight. Maj Tryon is a trusted and valued supporter of our mission at STARBASE. He currently serves as executive action officer to the commander of 8th Air Force, America's Bomber Command. With an undergraduate degree in physics and a graduate degree in nuclear engineering, Major Tryon has brought valuable knowledge and insight of STEM topics to countless students, parents, and educators on each of the many occasions he has spoken at a STARBASE graduation. Major Tryon feels that ours is a program that teaches students how to think - not what to think. He wholeheartedly endorses this approach, and believes that educating kids to become critical thinkers should be our nation's top priority and investment.

Committed to making a difference, Maj Tryon volunteers as a mentor to one of our newly formed 2.0 high school groups. He works alongside students at Caddo Magnet High School to facilitate collaboration, communication, creativity, and critical thinking while aiding the team as they design and build a rocket to exact specifications. His background in physics and navigation helps him make connections for the students between the academic elements of rocketry and real-world applications. It was, in fact, one of his own educators who had a great deal of influence on the leader and educator Major Tryon has become. His high school physics teacher shared his passion for teaching with his students, utilizing encouragement, creativity, and fun to impact every young person with whom he came in contact. "It was the challenges he put to us that made me keep challenging myself," he says of his former teacher. Major Tryon continues to pay it forward through his volunteer work with STARBASE and the inspiration, guidance, and wisdom he shares with students. Many thanks for being our "STAR" STARBASE volunteer!

WELCOME TO THE NEWEST STARBASIANS!



Cassy "Chia" Miller

STARBASE has always been comprised of an eclectic group of teachers. This year we welcome four new members to our already talented and diverse group, each with his or her own talents and unique contributions to making STARBASE an amazing place to learn and grow with STEM.

Jessica Foshee, "Flash," is our newest classroom assistant. A Bossier native with an affinity for reading, Jessica loves spending time with her family, especially while enjoying a good meal. She loves watching young minds grow and evolve and is currently pursuing her Master's in Teaching degree to further enhance her abilities. She looks forward to a long prosperous future in the education field.

Cathryn Hendrix, "Rocky," *(See photo, above, left,)* is a veteran teacher with more than 20 years" teaching in Caddo Parish. A native of Shreveport, Cathryn enjoys cooking and traveling whenever possible. From working with high-performing children, hearing impaired and special needs learners, to adult remedial students, Cathryn's vast experience is a valuable addition to the STARBASE instructional team.

Richard Scott, "Doc," fills a dual role working as a STARBASE instructor and as a 2.0 team member. (*See photo below, right.)* He is a technical wiz who brings a very diverse set of skills to the STARBASE team. Richard is a former math and science teacher with a strong interest in robotics and engineering. When he isn't building robots or working on program innovations, Richard enjoys spending time with his five children and his wife Terri, who is also a teacher.

Casey Hinton, ***"Coach,"*** brings both fun and enthusiasm to the STARBASE team. A singer from birth, she lights up any room she enters. Casey and her husband Cory enjoy traveling and love Mexican food! As the STARBASE 2.0 assistant, she ensures the 2.0 team has everything prepared and ready for each exciting session. As 2.0's "Coach," she cheers the students on, keeping them fully engaged in STEM!

Welcome aboard new STARBASIANS!

NOTEWORTHY ACHIEVEMENTS FOR STARBASE 2.0 IN 2016

Richard "Doc" Scott Instructor/2.0

Each year, the International STEM Education Association seeks out individuals who have developed and implemented quality STEM programs and have been instrumental in supporting integrated STEM education. This past October at the International STEM Education Association (ISEA) 2016 conference, STARBASE 2.0 Coordinator ***Benjamin Williamson*** joined an elite group of educators when he was honored with the ***Mike Neden STEM Champion Award*** for exemplifying a high standard of excellence in integrated science, technology, engineering and mathematics education. During the same event, STARBASE 2.0 instructor, ***Mary Beth Irvine***, received the ***Max E. Lundquest Rising Star STEM Educator Award*** recognizing enthusiastic young educators who model excellence and leadership in the field of STEM Education. This award recognizes initial contributions and future potential in young STEM Educators. We are proud of our STEM stars!

STARBASE is also pleased to work alongside companies such as Northrop Grumman and Lockheed Martin to support real-world applications and corporate collaboration. Northrop Grumman is a leading global security company providing innovative systems, products, and solutions to customers worldwide. Their extraordinary portfolio of capabilities and technology applications reach from undersea to outer space and into cyberspace. To help provide unique educational experiences related to STEM for students and teachers, the Northrop Grumman Foundation recognizes and supports programs that enhance the education experience for students and provide teachers with the training and tools they need to be successful in the classroom. STARBASE wasrecognized with a ***Northrup Grumman Community Foundation grant for the fourth year in a row,*** which will be used for supporting the expanding mission of STARBASE 2.0. Another community partner, Lockheed Martin, is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. Lockheed Martin is to advancing STEM education and developing programs that educate and inspire tomorrow's STEM leaders. To strengthen the workforce pipeline, Lockheed Martin provides generous funding to STEM education outreach activities. STARBASE was honored to receive a ***second-year grant from Lockheed Martin*** to continue the 2.0 outreach. Bravo-Zulu, STARBASE 2.0!

Eric "Iceman" Freeman

THE COLLABORATIVE STEM "VILLAGE"

There's an old proverb that says, "It takes a village to raise a child." In the education arena this means that every city member, school board member, business leader, school administrator, teacher, para-professional, parent, and student must come together and collaborate for the success of all students in the community. This phrase is especially true if we expect our boys and girls to be successful in today's STEM-centered and challenging society. Keeping that proverb in mind, it takes a collaborative effort in our community to help raise STEM awareness and opportunity for our area students. The Shreveport-Bossier community provides multiple opportunities to engage in quality STEM experiences. However, there is a need for even more community involvement and collaboration to expand our outreach and increase student academic performance in STEM.

STARBASE collaborates with many organizations to develop a stronger presence of STEM in our area. For the past two years, we have participated in the ***Shreveport Mini Maker Faire*** sponsored by ***Sci-Port Louisiana Science Center.*** During this Maker Faire, families across the Shreveport - Bossier area have an opportunity to engage in numerous STEM-related activities. We have also partnered with the ***Shreveport Regional Arts Council (SRAC)*** in providing activities during their Artbreak festival. These events are free and open to the public! STARBASE and ***SRAC*** are currently fleshing out the plans for an exciting summer STEAM camp!

Always moving forward, STARBASE has a new opportunity to partner with ***Northwest Louisiana Technical College (NWLTC).*** With CAD (computer-aided design) and prototype manufacturing using ***PTC Creo*** software as the cornerstone of the partnership, ***NWLTC*** will dedicate classroom space on their Shreveport campus to allow STARBASE 2.0 high school students to work alongside the STARBASE staff on more advanced engineering projects using STARBASE's manufacturing equipment. This collaboration has the potential to open the door to technical school students enrolled in certificate programs to be trained on Creo, helping prepare them to meet local industry needs.

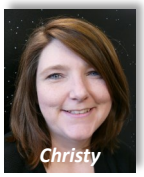
Northwest Louisiana STEM Alliance community of practice, a local expression of the national ***STEM Ecosystem Network***, is a newly formed organization designed to enhance learning opportunities and improve STEM outcomes through targeted projects preparing our students for careers in our local community. STARBASE Louisiana director, Kathy Brandon, is serving on the leadership team. In addition, STARBASE has joined the ***Louisiana STEM Girls Collaborative Project*** and the ***Louisiana STEM Equity Pipeline*** (now merging into one organization) helping impact communities across the state. Kathy, along with Deputy Director, Laurie Ilgenfritz, presented important information related to STEM and growth mindset to fellow educators at the state ***Louisiana Science Teachers Association/Louisiana Association of Teachers of Mathematics*** conference.

STARBASE truly believes that we must have a collaborating village to help expand STEM awareness and opportunity to many more boys and girls in the Shreveport-Bossier area. If your organization or business is interested in finding ways to help in this effort, contact STARBASE.

Pam "Roller" Thornell

FORMER STARBASE TEACHERS: THE STEM-PACT CONTINUES

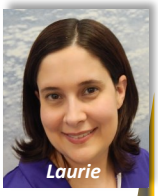
STARBASE strives to make an impact by helping improve education in our area. A number of former STARBASE team members have moved into new positions in the area, but each brings their knowledge and love for STEM with them into their new roles outside of STARBASE. I recently visited with three teachers who previously taught at STARBASE and have since moved on to other opportunities which further their careers.



Christy Bucker served at STARBASE from June 2005 to June 2013 and cites STARBASE as the catalyst that propelled her into the world of STEAM (Science, Technology Engineering ARTS, and Mathematics). She is the new Facilitator of STEAM of Bossier Parish. After leaving STARBASE, Christy taught Science at Stockwell Elementary in Bossier Parish for three years before being chosen as the STEAM Facilitator. ***Wendy Jordan*** served as a STARBASE Instructor from August of 2011 to May of 2013. She is now the instructional coach at Princeton Elementary and feels that STARBASE provided her valuable preparation for this new position. As Wendy assists her teachers in developing STEM lessons her previous experiences from her years at STARBASE helps her with that task. ***Laurie Salvail,*** STARBASE instructor from August 2014 through July 2016, is the new STEAM Coordinator at Kingston Elementary. She testifies that STARBASE was an amazing experience for her.

Each of these teachers was happy to share with us the impact STARBASE has had on her as a STEM professional, and we invited them to share about their STARBASE experience.

Question: *"How did STARBASE prepare you to be a leader in the STEM field at your current job?"*
Christy: "STARBASE piqued my interest in the STEAM fields and made me want to learn more about how to keep the interest of my students."
Wendy: "STARBASE gave me an opportunity to teach in different types of settings and with a unique curriculum."
Laurie: "I learned many valuable techniques in classroom management and how to successfully lead students in team missions."



Question: *"How are you using what you learned from STARBASE to help make an impact in your current position?*
Christy: "As a teacher, I utilized the problem based learning scenarios that I learned while at STARBASE. Now in my new role as Bossier Parish STEAM Facilitator, I get to help other teachers learn how to best utilize STEM/STEAM in their classrooms."
Wendy: "I encourage teachers to incorporate STEM across the curriculum."
Laurie: "As I plan my STEAM lessons, I look for a balance between using demonstrations and letting students discover using hands-on, minds-on activities in their teams. It is important to have students search to discover as many outcomes as possible."

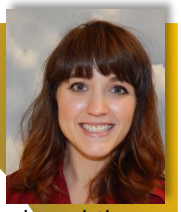
Question: *"How has STARBASE helped you improve educational experiences for the students with whom you are working?"*
Christy: "STARBASE made me a better teacher, and helped me to think outside of the box."
Wendy: I use the years of experience at STARBASE to help my teachers and my school make sure we are meeting the STEM needs of our students."
Laurie: I use skills learned at STARBASE in activities such as the EV3 Lego Robotic Program for 3rd – 5th graders, and I'm very proud that my younger students have a solid understanding of the engineering design process."

Each of these past STARBASE teachers stated her appreciation for the opportunities that the years at STARBASE afforded them. Each felt blessed to have had the time to be part of something that has such a long lasting impact on so many students and teachers in the Shreveport-Bossier area.

Benjamin "River" Williamson
2.0 Coordinator

CULTIVATING A "HOMEGROWN" WORKFORCE FOR SHREVEPORT-BOSSIER CITY

Mary Beth "Snow" Irvine
2.0 Instructor



The STEM education movement has been around for many years now, so it is likely that you have heard about the importance of STEM training for developing students' 21st century job readiness and how important it will be to have skilled workers in STEM fields in the future. Many elementary and secondary schools are developing STEM programs and opportunities for their students, but what else can be done to better prepare students for a future in our own community? With industries such as healthcare, cybersecurity, manufacturing, engineering, and business management growing in our community and contributing to a recent influx of jobs, we need to prepare students with the right skills to fill the need for local companies such as Benteler Steel, Willis Knighton Health system, Hyundai-Glovis, Ronpak, and CSRA Inc. *(See table.)*

A greater collaboration among secondary education, higher education, and industry would help STEM-preparedness. Shreveport-Bossier schools are offering new STEM-centered programs and accreditations, industry-based certificates and accrual of college credit during a student's educational experience, but as students approach graduation, they should be provided opportunities to engage at a higher level with local industry in meaningful ways. Greater connection to local industry will provide our students more meaningful educational experiences and provide local employers with a skilled, well-prepared, and homegrown workforce. Students can explore potential occupations through site visits, job shadowing or internships, or by enrolling in programs offered at local technical and community colleges or universities. Such connectivity among industry and education provides teachers with greater real-world applications for the content they teach, and the community with a greater pool of qualified workers. It's a win-win for everyone!

Education/industry collaborations help connect the dots between what we *need* and what we *have,* and helps education fill in the gaps. What do *YOU* see as the STEM needs in our area? Let us know on Twitter @StarbaseLA2pt0 or visit us on Facebook!

Louisiana's Future:
Top 10 Fastest Growing STEM Jobs

Career Path	2016 – 2025 Projected % of Change	2015 Avg. Hr. Earnings
Architectural and Engineering Manager	26%	$56.87
Civil Engineers	24%	$42.25
Cost Estimators	22%	$27.69
Chemists	22%	$35.50
Computer and Information Systems	21%	$40.98
Surveyors	21%	$24.56
Operations Research Analysts	21%	$25.14
Mechanical Engineers	19%	$46.64
Industrial Engineers	18%	$42.97
Electrical Engineers	18%	$46.98

***Alliance for Science & Technology Research in America.* 2016.**

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