DoD STARBASE
A Department of Defense Youth Program

CIRCUIT

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News from the field of the premiere DoD Youth STEM education program.

STARBASE Peterson Welcomes Special Visitors

STARBASE Peterson was thrilled to welcome Mrs. Christine Grady to their STARBASE program on October 17, 2022. Mrs. Grady was accompanying her spouse, Admiral Christopher Grady, Vice Chairman of the Joint Chiefs of Staff, while visiting Peterson Space Force Base for a day of briefings with Space Operations Command (SpOC) and US Space Command, both headquartered at PSFB. During her visit, Mrs. Grady was able to sit in on classes from Colorado Springs Christian Schools for Onshape and Buoyancy activities. This was her first visit to any DoD STARBASE and during a meeting with STARBASE Peterson director Mrs. Sarah Knox, she stated she was eager to learn more about both the local and National program.

Accompanying Mrs. Grady, were Mrs. Julee Cheever, spouse of Chief of Staff NORAD/USNORTHCOM, Rear Admiral Cheever; Mrs. Marilyn VanHerck, spouse of Commander NORAD/USNORTHCOM, General VanHerck; Mrs. Mary Hanson, spouse of Commander SBD1, Colonel Hanson; Mrs. Angie Dickinson, spouse Commander USSPACECOM, General Dickinson; Mrs. Kristi Pennington, spouse Chief of Staff USSPACECOM, Rear Admiral Pennington; and, Ms. Lisa Arfaa, Senior Advisor to the Vice Chairman.

"It's important that we approach STEM not just as a subject, but as a mindset."
-- Camsie McAdams, Director of STEM Curriculum, Discovery Education

2022 STARBASE Advanced Success

A STARBASE 3.0 Collaborative Effort Between STARBASE Sites: 5 Kansas Sites (Kansas City, Manhattan, Salina, Topeka, & Wichita), Los Alamitos, CA; Martinsburg, WV; & Winchester, VA STARBASE Programs

DoD STARBASE staff from Kansas, West Virginia, Virginia, and California successfully planned, organized, and executed the second annual STARBASE 3.0 robotics program. This STARBASE Advanced 3.0 program continues to be held in conjunction with the Marine Corp JROTC summer camps organized by Paul Jornet USMC 1st Sgt (ret). Thanks to the vision of Mike O'Toole, Director of Civil Military Programs, Office of the Assistant Secretary of Defense for Manpower & Reserve Affairs, many high school age students now have the opportunity to expand their knowledge of the Engineering Design Process, robotics, electronics, micro processing board schematics, and C++ programming language through this STARBASE 3.0 opportunity. The STARBASE 3.0 model provides a pathway to fully extend the Title 10 authority of the DoD STARBASE program to encompass high school age students.

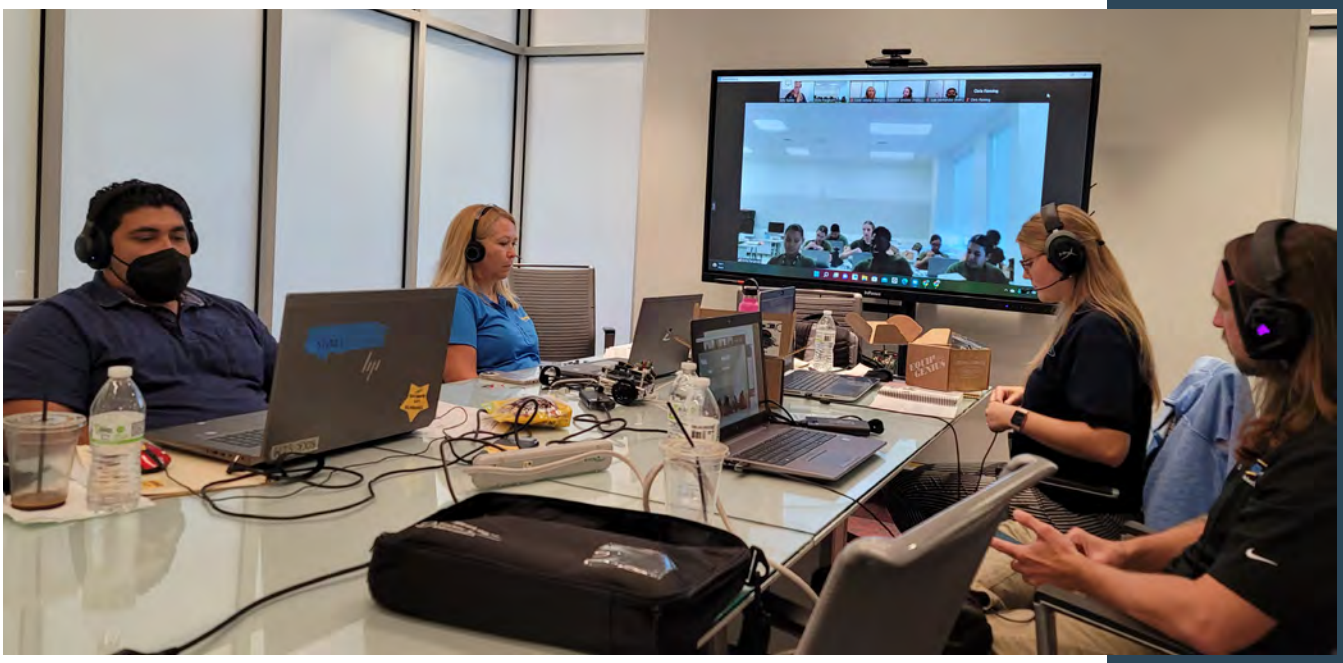
Establishing a collaborative relationship between the STARBASE sites was essential for the success of the 3.0 program. A "Development Team" was created with representation from participating STARBASE programs. This year they used the Parallax BOE Shield-Bot. This new robot included a breadboard, which allowed students to modify the robot's circuitry and sensors. This team created and provided resources to the sites in order for each instructor to become proficient in building and coding the Shield-Bot robot. These resources included an introduction to the micro processing board, instructions in robotics, circuit board schematics, building tips, and C++ coding instructions.

This year's 3.0 effort was not without challenges. While the STARBASE 3.0 team originally planned for in-person robotics sessions at various Marine Corp JROTC camps around the country, due to circumstances outside of our control, it was determined that the camps would be conducted virtually again this year. The curriculum and manning model were adjusted accordingly. Four-person teaching teams were established for each of the three virtual classrooms. This manning model allowed instructors that

had virtual classroom experience from the previous year to take the lead in the classroom while providing an opportunity for new 3.0 instructors to experience teaching robotics to high school students in a virtual environment. The STARBASE 3.0 team met in Stafford, VA during the last week of July to facilitate the virtual classrooms from a central location. They worked with over 90 students from around the world.

When presented with an additional opportunity to conduct a "hybrid" classroom, the 3.0 team stepped up to the task. Cadets attending MCJROTC camp in Norwich University in Vermont, were given the opportunity to also work with the Shield-Bot robot. This unique environment allowed students to be assisted virtually by the STARBASE teaching staff, while at the same time collaborating with each other and the onsite professors at the university. The "hybrid" classroom turned out to be a very successful endeavor. When asked what they enjoyed the most about the course, student Aidan Fogg Anderson responded, "Getting to actually write code for the robots and figuring out how to make it do what I want it to do." Additionally, student Ryan Fenton stated, "It was hard, but the hardest things in life mold you."

A huge thank you goes to retired USMC 1st Sgt Paul Jornet for once again organizing and setting up a successful JROTC camp. The program directors of the STARBASE 3.0 team are extremely proud of the hard work, collaboration, and positive interactions along with the willingness to go above and beyond to make this year's virtual 3.0 program a success. The team looks forward to expanding this program as they prepare to meet in person at various JROTC camps across the United States next summer.



2023 Teacher Survey

The 2023 Teacher Survey is available now in STARBASE-U in the *SB Program Directors* Course under the Academy Management section. Please contact email@dodstarbase.org with questions.

STARBASE Academy Partnership Unlocks STEM for English Language Learners

STARBASE Academy officials at Hanscom Air Force Base are collaborating with professors and students from Bridgewater State University (BSU) to advance science, technology, engineering, and mathematics education for English-learning elementary students across the region.

This partnership is part of a National Science Foundation grant that enables BSU students studying elementary and early childhood education to develop their teaching skills for fifth-grade STEM classrooms and in some cases, overcome language barriers over a three-year program.

According to BSU professors participating in the program, the student teachers must first reevaluate their own understanding of a scientific concept before presenting it to elementary students.

"A high school or college-level physics class will have a lot of equations and math to back up the information, but that won't be the case for a fifth-grade classroom," said Dr. Nicole Glen, a BSU professor of Elementary and Early Childhood Education. "As teachers, it's important that we have a more conceptual understanding of the topics so we can use words or pictures to convey the science that's happening."

According to the professor, modifying the concepts includes more than just simplifying them, especially in the case of English-language learners.

"These teachers have to be able to demonstrate the concept, set up activities, and get their students to participate without the language piece, and without pantomiming everything," said Dr. Peter Holden, Hanscom's STARBASE Academy director. "It's a skill that takes a lot of time to develop."

Glen explained that students learning English as their second language often miss out on advancing in STEM courses, as their curriculum focuses on language skills.

"Fifth grade is where students realize their love for the subjects, and then they go on to middle school and start choosing their courses and clubs based on what they like," said Glen. "It's our job as educators to instill that love of STEM early on, which makes what these student teachers are learning so influential."

Hanscom STARBASE is one of more than 80 Department of Defense Youth Program academies across the nation, focuses on increasing confidence and STEM learning for elementary students.

[*Source: https://tinyurl.com/9y28td3e*]

A Call for Participation

Throughout the year, this newsletter will continue to spotlight the achievements, partnerships, and tips of the participants of the DoD STARBASE program. Please share your achievements, success stories, and helpful tips with us at email@dodstarbase.org.

STARBASE Guam STEM Day

STARBASE Guam hosted STEM Day on October 8, 2022 at the Agana Shopping Center. The event featured a variety of organizations who brought STEM into the hands of the community, offering interactive activities for participants to enjoy in the real-world setting. Individuals of all ages became immersed in the world of Science, Technology, Engineering, and Mathematics, engaging in kinesthetic and tactile experiences such as an aviation simulation with the Andersen Civil Air Patrol, designing a dream car with Atkins Kroll, gaming with the University of Guam E-Tritons, drone and aviation workshops with Bella Wings, and so much more!

The event was conducted not only to foster new partnerships with organizations, but to bring a greater awareness of STARBASE Guam for all to get to know its position in the education frameworks, and its greater purpose of providing STEM-focused opportunities to underrepresented students across the island. At the event, many students from cohorts we serviced paid a visit to the STARBASE booth to demonstrate their proficiency in coding with Lego Spikes, develop a bowling contraption, play a friendly game of Sphero soccer, and observe a 3D printer in action.

STARBASE Curriculum Announcements

» If your curriculum schedules have been approved, curriculum verification sheets have been uploaded into your google shared folder. Please have this sheet available for your SPECTRUM evaluator at the time of their visit if you are on the list for an operational review this year. If your site doesn't have a verification sheet, TSG will be in touch with additional questions for clarification.

» Reminder that an updated version of the SOA has been published on STARBASE U (as of October 2022). Be sure to take a look at the changes and how they may impact your program.