

Air Force Association



Aerospace Education Newsletter

Chapter, State, and National Aerospace Education Activities

From Dick Bundy - Vice Chairman for Aerospace Education

This has been a fast and busy year for our Aerospace Education Council. We are blessed with an engaged and enthusiastic team on the AEC that is displaying a strong tie between our Air Force and Aerospace Education. The following are a few highlights. Our Teacher of the Year Program continues to be a powerful program across our nation. Our chapter, state and national winners indicate the importance of aerospace education in our school systems. We have numerous examples of chapter interaction with educators and that our AFA emphasis on STEM education is bringing teachers into our organization. You will see in this newsletter the incredible quality of our top three national competitors. A big high note for the year is Rolls Royce’s sponsoring our National Teacher of the Year program. We had a very active Mike and Gail Donley Spouse Scholarship competition this year with approximately 100 packages submitted. The 12 recipients have been selected and on this date the winners’ announcement has just been made and congratulatory letters are being prepared.

CyberPatriot continues to expand its influence both nationally and internationally. Participation in this next cycle is expected to quickly surpass Season VIII’s 3,300 plus competing teams. StellarXplorers also had a very successful second season. The program is getting strong support from SECAF and we expect the number of competitive teams to more than double this cycle.

We continue to have a strong relationship with AFJROTC, AFROTC, Arnold Air Society and Silver Wings. We are seeing alumni of these programs focused on developing future leaders join our organization. These people are the future of AFA and worth the time and investment so many of you are sharing with them.

Lastly, a special thanks to our phenomenal AFA chapters. Without your involvement, none of these programs would be effective. Our Aerospace Education programs are the key factors in getting the Air Force story told to the American public and underscoring how important our “Educate” mission is to our future. My compliments to all of you.

Dick Bundy
Vice Chairman, Aerospace Education

FY 2016 AEC Members

Dick Bundy	Jim Hannam	Lee Barnby	Sharon Branch
Buck Buckwalter	Bill Croom	Chet Curtis	Bob Elder
Stephen Gourley	Susan Mallet	Shannon Mulkern	Mike Peters
Rick (Rags) Ragaller	Larry Sagstetter	Joan Sell	Noah Sherman
Emilie Stewart	Mary Anne Thompson	David Warner	Mark Westlake
Dan Whalen	Tylor Worley	Nia Reeves	



National Teacher of the Year

Greg Ennis is a 12-year veteran teacher, teaching 9-12th grade engineering for the last 4 years at James Clemens High School in Madison, AL. Nominated by the TN Valley Chapter, Mr. Ennis is a stellar “alternative educator” who is a prime example of “industry experience as a platform for academic careers.” Working in the engineering industry for nine years brought Greg Ennis great appreciation of, and advocacy for, exemplary workforce development educational programs. Starting as a substitute teacher, Mr. Ennis quickly found that being an educator fulfilled his goal of giving back to the community by influencing young people in ways that will impact them and society far into the future. Mr. Ennis said, “A lot of people can’t understand why I gave up a much higher paying career to become a teacher, but the rewards that come from being able to shape lives are far greater than the material rewards that come with a larger paycheck.”

And shape lives, Mr. Ennis is certainly doing! As a member of the AFA, CAP, Christian Educators Association International (CEAI) and International Technology and Engineering Educators Association (ITEEA), Greg uses his collaborative skills to utilize available resources to secure mentors, grants, and experiential opportunities for his students--- and, for peer educators.

At school, he is the founder and/or sponsor and mentor for the: AFA StellarXplorers team, which made it to the 2016 national finals; FIRST and MATE Robotics clubs; Society of Women Engineers (SWENext) chapter, where his “Girls in STEM” club mentors female elementary and middle school students; Engineering club; InSPIRESS (Innovative System Project for the Increased Recruitment of Emerging STEM Students) program, where students work with local university professors on projects to develop scientific missions to destinations within the Solar System; and Project Lead the Way (PLTW) aerospace engineering program, where he secured funding for a Jet Stream 500 wind tunnel. He has secured internships for his students at NASA’s Marshall Space Flight Center and was awarded Alabama Department of Education business/industry certification for his engineering courses.

As the 2016 ambassador for the Air Force Association and the first Rolls Royce-sponsored AFA National Teacher of the Year, Mr. Ennis states that his message is: “As classroom teachers, we are leaders, mentors, counselors, role models, and, of course, educators; but we should be, first and foremost, servants. Having a servant’s attitude allows us to empower our students to think and achieve for themselves. We should be “in the field” learning about and understanding our students’ long-term needs to succeed and finding how to best meet those needs through collaboration and ‘outside the classroom walls’ programs.”



Mr. Ennis’s robotics team preparing their underwater ROV for regional competition.



**2016 National AFA Aerospace Teacher
of the Year, Greg Ennis
Tennessee Valley Chapter 335, AL**



**Mr. Ennis (right) and fellow
colleagues at US Space and
Rocket Center Aviation
Challenge.**

There were 10 AFA State TOYs who were nominated for the National AFA TOY award. All submissions included quality educational programs implemented by exemplary educators. All educators were ranked using a scoring rubric, with the top three educators named in order as unanimously agreed upon by the AFA National TOY selection committee.



**2016 National AFA Aerospace Teacher of the
Year- First Runner Up:
Meredith Swartzendruber, BG Bill Spruance
Chapter 282, Delaware**



**2016 National AFA Aerospace Teacher of the
Year- Second Runner Up: Cecelia Ann Carroll,
BG Harrison R Thyng, Chapter 249, N**

**CONGRATULATIONS TO OUR NATIONAL TEACHER OF THE YEAR
AND RUNNERS UP!**



Teacher of the Year, Continued

2016 National AFA Aerospace Teacher of the Year- First Runner Up: Meredith Swartzendruber, BG Bill Spruance Chapter 282, Delaware

Meredith Swartzendruber is currently teaching 8th grade Earth and Space Science at Everett Meredith Middle School in Middletown, Delaware. She has been teaching for 9 years. Just two years into her teaching career, in 2009, Ms Swartzendruber was selected to attend NASA's Space Academy for Educators and her interest in aerospace education was ignited. Then, attending the Advanced Space Academy in 2014, she learned more about strategic instructional methods and STEM organizations that would help boost her aerospace/STEM education program. She became a Civil Air Patrol Aerospace Education Member; worked with her local AFA chapter to implement the Visions of Education program; and joined the National Science Teachers Association, Delaware Aerospace Education Foundation, Delaware Geographic Alliance, and American Institute of Aeronautics and Astronautics.

Her passion and knowledge has allowed her to lead both her students and other educators on a path that focuses on aerospace education. She leads educator workshops for the Delaware Aerospace Education Foundation, conducts seminars at Texas Johnson Space Center's Space Educators Exploration Conference (SEEC) as well as the Delaware Civil Air Patrol conference, and provides school-wide STEM events that have expanded to a Community Space Night.

At her schools, she has stepped "outside the classroom walls" to provide enrichment programs that stimulate the students and the community. She has been the Science Olympiad team coach; organized the school STEM Fair, and founded the school's Space Club. The Space Club organized a space night for the community in which they partnered with ILC Dover engineering company and the Delaware Aerospace Education Foundation to provide activities for community members.

Meredith feels her biggest accomplishment to date has been the implementation of the Student Spaceflight Experiment Program (SSEP) during the 2014-2015 and 2015-16 school years. As the community program director at Caravel Academy, she was able to raise \$21,500 through grants and donations in order to become one of the first schools in the state to participate in SSEP. This program actively engaged over 350 students in real-life experimental design and proposal writing. The winning research proposal came from a team of five students who want to see the effects of microgravity on fruit flies. Her students' experiment has been selected to launch for the International Space Station on a SpaceX resupply mission this summer.

Ms. Swartzendruber captures her philosophy by stating, "By creating an open and inviting atmosphere, I hope to encourage learning. By getting students involved in the process, I build on that atmosphere. Students want to be excited to learn. They want to be challenged. By being the best teacher I can be and offering every student the same opportunities, I am providing the best gift anyone could possibly receive - the gift of an education. The sky is the limit!"



Teacher of the Year, Continued

2016 National AFA Aerospace Teacher of the Year- Second Runner Up: Cecelia Ann Carroll, BG Harrison R Thyng, Chapter 249, New Hampshire

Cecilia Ann Carroll has spent the last 25 years at Hampstead Academy in Hampstead, New Hampshire, teaching middle school mathematics. Currently she teaches Math to grades 5 – 8, including Algebra I and Geometry I. She is the school's Math Chairperson and curriculum development team member.

She began her career working in a cancer clinic, but then she travelled to Australia and West Africa to teach math. Her newfound interest in aerospace education emerged and led her to network with like-minded educators. A couple of years ago, she attended NASA's Space Academy for Educators in Huntsville, Alabama, and propelled her math classroom into an exciting and engaging STEAM (Science, Technology, Engineering, Art, and Math) learning environment. Always looking for ways to broaden her and her students' horizons, she joined Civil Air Patrol and began using their STEM curriculum and STEM Kits; connected with the Navy to learn about their Sea Perch Program, and coordinated with the Chase Engineering School at the University of New Hampshire to use their pool so her students could see their underwater vehicles perform. Involved in the community, she led her school and community toward raising \$32,000 for St. Jude's Children's Hospital through the Math-a-thon program.

She and her students have had a high level of success in math contests and the stock market program. She coordinates Fall Overnight Outdoor Education, the 8th grade graduation trip to Quebec City, Canada, and a student trip to Space Camp in Huntsville, Alabama.

According to Stacy Kutzelman, Upper School Coordinator and Member of the Leadership Team at Hampstead Academy, "Cecelia involves the kids in a variety of STEM programming from MathLeague, AMC- 8, Math Counts, Stock Market Game, and SeaPerch competitions, to Math Club, and after-school tutoring. She lights up watching the kids learn the Rubik's Cube or create bridge structures in her classroom. Cecelia also takes our students for week-long overnight nature camps that involve problem solving, science and engineering. Last summer, she took a group of students with her to Space Camp!"

Ms Carroll has the support of her school administration and coworkers to dedicate the next school year to Space and Flight and have a Family Space Night in the fall. The PTA has agreed to fund a visit from astronaut Dr. Don Thomas to inspire the students to reach for the stars in life.

"Outside the classroom walls" activities include the Math Club, the Rocket Building Club, and the SeaPerch Program. Kevin Grady, New England Region AFA President, is quite impressed with Ms. Carroll, and noted, "Cecelia has found unique ways to take learning from the classroom to the real world outside the classroom. Her efforts caught the eye of the New Hampshire Society of Professional Engineers, who named her their 2015 STEM Teacher of the Year. Clearly Cecelia Carroll is an extraordinary teacher who finds innovative ways to motivate and educate her students about aerospace, science, and technology."

Ms, Carroll has been recognized with numerous awards, grants, and scholarships, all of which have been a direct result of her passion to teach. Ms. Carroll is, truly, an exemplary educator who represents the power of dedication to remain in the classroom as long as there is something new to learn and teach!



CyberPatriot Coach & Mentor of the Year (excerpt from August CyberSentinel)

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SPOTLIGHT: CYBERPATRIOT VIII COACH AND MENTOR OF THE YEAR

CDR Allen Stubblefield, Coach of the Year

Through the undying and ever persistent leadership of Commander Allen Stubblefield, Troy High School in Fullerton, Calif., has soared to new heights within the CyberPatriot program. In only a few short years, the small California school has grown from only a few All-Service teams to five All-Service, four Open Division teams, and is rapidly expanding their efforts into their feeder middle school which they expect to expand from five to twenty-five members total. The success of Troy High School is due in no small part to CDR Stubblefield's dedication to the program. Under the direction of CDR Stubblefield, five All-Service teams successfully reached the Platinum Tier at Regionals, two teams competed at the national finals, and one placed second overall in the competition!



CDR Stubblefield (left) and his two Troy High School NJROTC finalist teams.



CDR Stubblefield not only engaged his students in traditional lectures but also encouraged senior team members to mentor the younger students, thus teaching the value of peer mentorship while instilling a sense of responsibility for their own success. This allowed team members to develop various leadership and followership skills along the way. CDR Stubblefield was also well known for utilizing instruction from a wide variety of sources. Enlisting the help of the Cal-Poly Pomona CCDC team and the rest of the All-Service teams he diversified the lessons taught to younger students, effectively preparing them not only for the current competition but for future competitions as well.

CDR Stubblefield exhibited many characteristics desirable in a CyberPatriot coach and his students took notice. His ethical leadership was at the forefront of his character and was highlighted through his lectures on cyber-ethics, a cornerstone of his lesson-plan. For these reasons CDR Stubblefield was nominated and selected as the CyberPatriot VIII Coach of the Year.

Christopher Walcutt, Mentor of the Year

"Chris should be the Mentor of the Year because I cannot imagine any other mentor supporting their team any better and contributing to the success of their team any more this past season" remarked Coach Kenneth Steffey of the Centurion Battalion Sea Cadets.



Christopher Walcutt, a principal consultant at Black & Veatch, certainly was the technical backbone of their team. Trained in all aspects relevant to the CyberPatriot competition — Windows Desktop and Server Administration and Security, Linux Desktops and Servers, and Cisco Networking and Digital Forensics — he helped lead their team to victory at the National Finals competition, earning the coveted champion title in the All Service Division.

Chris joined the team late during CyberPatriot VI season just when they needed the technical expertise that he was able to provide. Throughout the team's past three seasons he has been intimately involved in the program. As an invaluable asset to the team he has been able to familiarize the students with the equipment and software being utilized. Tailoring lesson content to their level of understanding has been crucial to their success. Having a great understanding of network security and impeccable interpersonal skills he is able to communicate the best practices in all the areas needed for the competition. Not only does Chris bring technical expertise to the team he brings a fun and engaging atmosphere as well. He consistently cites real world examples for the topics being discussed and is hands on with the students during white board work and system demos. His love and dedication for the students and this program is why Chris is the CyberPatriot VIII Mentor of the Year.



Christopher Walcutt (2nd from right) and the Centurion Battalion champion team

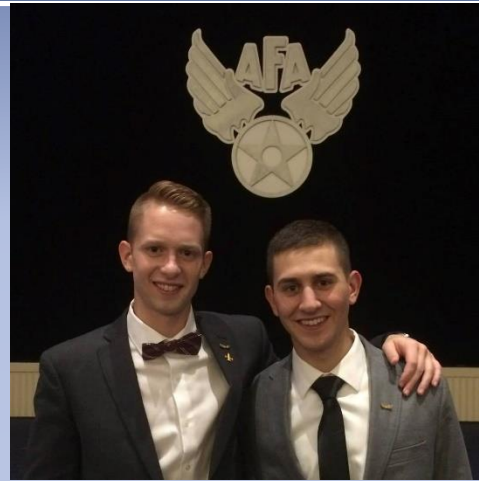


Arnold Air Society – Silver Wings

Outgoing Silver Wings National Commander, Joey Fitzpatrick, shares his perspective on having served as the National Commander (pictured below left with Peter Rudzynsik, outgoing National Vice Commander, right).



Silver Wings News



"If you don't get the chills when you set a goal, you're not setting big enough goals" - Bob Proctor. If you would have told me four years ago that I would have had the honor to serve as the president of a national organization, I just would not have believed you. I joined Silver Wings four years ago with a few friends looking to help others; and whether that meant building a home for those less fortunate or giving back to veterans at VA hospital it didn't matter, we just wanted to give back. Service is this amazing opportunity of helping others, and whether it's large or small is irrelevant; it's truly just getting out there and doing what you're passionate about.

For our Silver Wings Chapter at Rochester Institute of Technology, service was always about the quality over the quantity. We started only a few years ago and what we focused on were two things; providing value back to the members, and doing community service that would actually impact someone else's life directly. With these two goals in mind, everything else seemed to fall into place. My favorite part about being a part of the chapter was getting college students excited about national defense, professional development, and doing some wholesome work in the community that actually would make an impact. I think chapters really cut themselves short when they just fundraise and donate; there is nothing more meaningful than going to help a veteran or help out your community by assisting them in person.

Being able to then help other chapters at the national level was just a wonderful opportunity. Our National Staff and Region Presidents were truly superb, and to have such a dedicated team working tirelessly towards one effort was an amazing experience. Silver Wings and Arnold Air Society are improving each year with new opportunities forming and new leadership taking the helm. What differentiates ourselves from some of the other collegiate organizations is that we actually apply leadership on all levels of the organization. Whether it's leading a chapter, or an ARCON, or a NATCON, we're all pitching in to improve each other and the organization. I think a lot of organizations talk about that opportunity but it's just not there. Being a part of our organization is solely what you make of it, but if you view this organization as what can you put into it, rather than, what can I get out of it, you're going to see your whole perspective change.

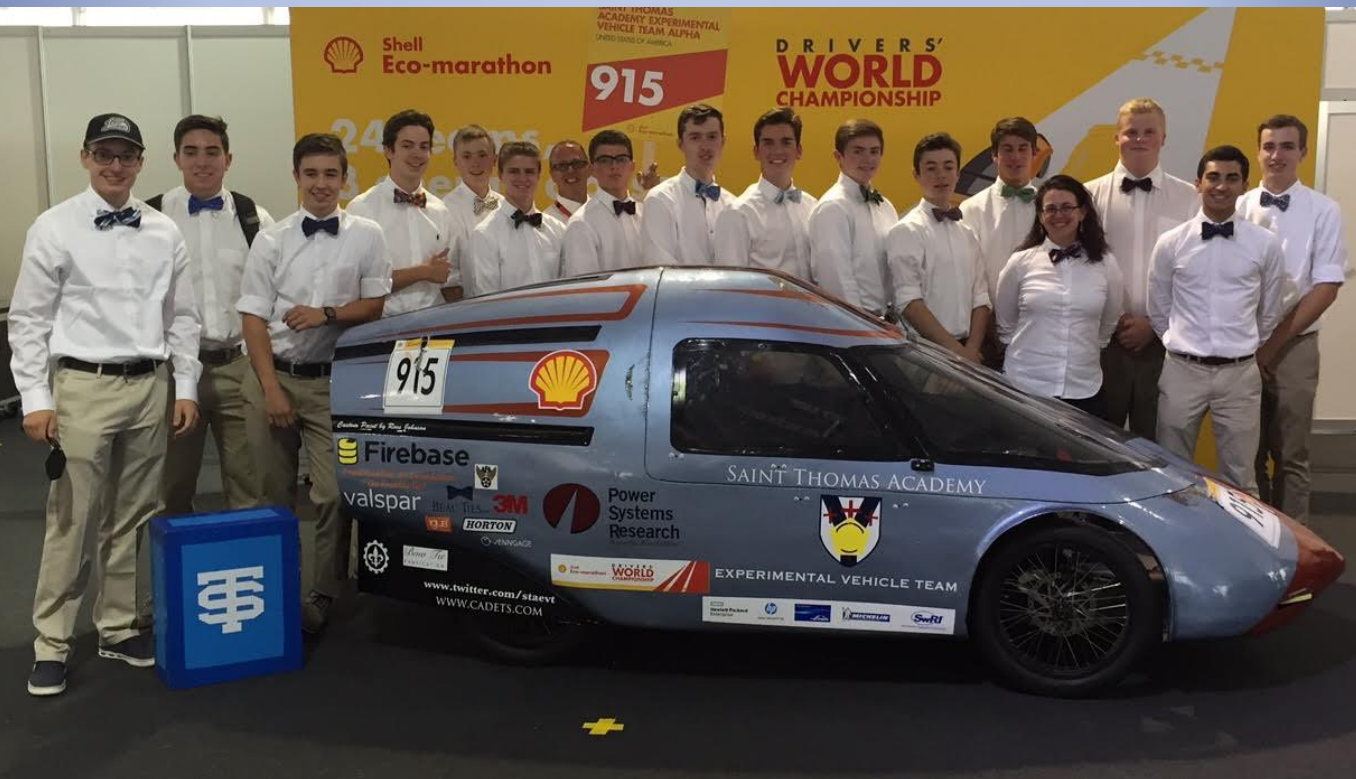
Being on National Staff has been the best experience that I have had in college without question. But, it has been all because of the amount of effort and grind that this organization has put in. Success does not happen by luck and it's surely not something that you just stumble into. Watching the amount of hours that our members put in is simply incredible. You will not find another collegiate organization out there that is more driven than the members in Silver Wings and Arnold Air Society. Your time in this organization is what you make of it, and whether you realize it or not, time is a finite resource; and knowing that, we need to take every opportunity ahead of us and capitalize on it. That's what we did this year with guest speakers like Gwynne Shotwell, and having a record number of service hours for Silver Wings. I'm a proud alumni of Silver Wings and I'm looking forward to serving Silver Wings and the AFA for the years to come.



2015 Teacher of the Year's Students Continue to Excel

In Detroit in April, AFA 2015 Teacher of the Year Mark Westlake's Experimental Vehicle Team won first place in Urban Concept Battery Electric Car category at Shell's Eco-Marathon America 2016. The car is sponsored by Rawlings Chapter of AFA, MN. Subsequently, St. Thomas Academy students travelled with the car to London to compete in Shell's Driver's World Championship. While leading the race they rolled the car in a tricky hair pin turn. The good news is that all safety systems worked great and the driver is fine.

The tenth Shell Eco-marathon Americas drew a record 124 teams from seven countries to Detroit, USA, as well as 20,000 visitors, for the ultra-energy-efficiency driving challenge.



The Saint Thomas Academy Experimental Vehicle Team

StellarXplorers & U.S. Space & Rocket Center

Space Camp at the U.S. Space and Rocket Center in Huntsville is a dream destination for many young people around the world. Wilcox Central High School Cadets Chassity Atwood and Shondranika Young attended the first ever JROTC Space Camp hosted by the Space and Rocket Center. The Aviation Challenge Space Camp experience took place June 9 – 12. Cadets Atwood and Young joined over 120 other high school cadets from all branches of the service and were challenged in the fields of aerodynamics, aeronautics and jet propulsion when they experienced U.S. Space and Rocket Center's most advanced aviation program. This military-style program used simulated, realistic combat scenarios and hands-on activities to give the cadets an understanding of the basics of flight physiology, aerodynamics and rocketry.

Cadets from Alabama, Tennessee, and Mississippi attended the event. Lt Col David Murphy, AFJROTC Senior Aerospace Science Instructor, Huntsville High School, "gave the cadets a "taste" of space and StellarXplorers. He gave them a crash course on orbital mechanics, STK, and the exercise scenario. The cadets had 30-40 minutes to work on the scenario. It was a fire house approach; but, again, the goal was to give them a feel for the program," said Tim Brock, AFA National Secretary. Mr. Brock helped answer cadet questions and scored the team responses. He further reported, "Lt Col Murphy gave t-shirts and coins to the 6 cadet teams that had the best scores. All students were exposed to StellarXplorers and some may choose to enter the upcoming competition. The event was highly successful!"

Wilcox Central's
Chassity Atwood &
Shondranika Young
with family and
friends at the
conclusion of JROTC
Space Camp.



Photo and first paragraph used with permission from *The Wilcox Progressive*. See the You Tube video that shows first-hand the excitement, positive support, and testimonials from high school students and team directors who participated in the STLX II finals at <https://www.youtube.com/watch?v=w1oktTFx3k>.





The 3rd Annual Texas Woman's University (TWU)/AFA CyberCamp 2016 was held on June 20 – June 24, 2016 at the Texas Woman's University Denton Campus. The success of this year's program relied on the generous support from the TWU Office of Technology and the partnership between TWU and the Air Force Association (AFA). We accepted 42 applicants into the program: 25 boys and 17 girls and the participants were grades 9 through 12 from local area schools including Denton, Argyle, Carrollton, Coppell Flower Mound, Frisco, and Little Elm. Also, one middle school student (7th grade) was admitted and completed the program successfully.

Two AFA instructors (Emily Rauer and Frank Zaborowski) visited TWU campus to deliver the CyberCamp curriculum during the CyberCamp week. Only two CyberCamp sites in the nation, Facebook's national headquarters in California and TWU, received AFA's direct instruction this year.

During the five days on TWU campus, students learned cybersecurity principles, online safety, cyber threats, virtual machines, Windows security policies, Windows account management, Windows file protection, Windows Auditing and Monitoring, Ubuntu terminology and concepts, basic Linux GUI security, and command line security. At the end of the program, the students applied their knowledge in a simulated competition which is similar to the annual AFA CyberPatriot national youth cyber defense competition.

CyberCamp students also attended a tour of TWU networking and security facilities including server room and the Service Desk.

Submitted by Dr. Jian Zhang, Associate Professor Math and Computer Science, TWU

