

CIVIL AIR PATROL

Spring 2019



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**Legislative Day
Delegations Gather
on Capitol Hill**



**Cadet Wings' First Grad
Leads the Way**

**Small UAS Program
Takes Flight**

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At the Aerospace Connections in Education (ACE) Lift-off 2018-2019 in Hillsboro, Virginia, the joined hands of Bob Corsi (left) and Jim Hannam serve to symbolize the strong relationship between Civil Air Patrol and the Air Force Association. Corsi is the vice chair of CAP's Board of Governors while Hannam is vice chair, aerospace education, of the AFA board. The AFA has been a major partner in the development and growth of ACE. Go to page 28 to learn more about ACE and its 10th anniversary. Photo by Susan Mallett, CAP National Headquarters

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ON OUR COVER

Connecticut Wing cadets participating in CAP's Legislative Day walk through the 90-foot-high central atrium in the Hart Senate Office Building on Capitol Hill, on the way to their next scheduled meeting with one of their federal lawmakers. The cadets (from left) are Cadet Chief Master Sgt. Brion Henry, Cadet Capt. Liam Waldron, Cadet Tech. Sgt. Angelina Scrivines, Cadet 1st Lt. Johnathan Bell and Cadet Chief Master Sgt. Daniel Kim. Henry and Scrivines belong to the Stratford Eagles Composite Squadron, Waldron to the 399th Composite Squadron, Bell to the Royal Charter Composite Squadron and Kim to the Connecticut Minuteman Composite Squadron. See page 41 for full Legislative Day coverage. Photo by Susan Schneider, CAP National Headquarters

Civil Air Patrol Volunteer is oriented toward both internal (CAP) and external audiences. For that reason, it uses the Associated Press style for such things as military abbreviations. Official internal CAP communications should continue to use the U.S. Air Force rank abbreviations found in CAPR 35-5.



ACE Turns **70** Gets Top Marks

By Jennifer S. Kornegay

Seeing children come alive when a topic or concept finally makes sense is one of teaching's greatest rewards. It's something that those involved in Civil Air Patrol's aerospace education mission relish, and the Aerospace Connections in Education (ACE) program provides continual opportunities to savor the sensation.

Designed for educators of students in grades K-6, ACE provides cross-curricular aerospace lessons that support STEM (science, technology, engineering and math) initiatives. It launched in 2007 in Boaz, Alabama, as the Junior Cadet Program. For the next school year (2008-2009), the program's name was changed to ACE, and in the decade since it has grown greatly in depth and breadth.

"That first year, we had 4,500 students involved in ACE," said Susan Mallett, who founded the program and is the educational outreach coordinator at CAP National Headquarters. "This year, we'll hit 50,000 students in 340 schools, with over 900 teachers implementing ACE lessons across 47 states."

Over its 10 years in existence, ACE has reached approximately 227,000 students.

2018-2019 Lift-Off (the annual kick-off event for the program across the country) after being named 2018 National CAP ACE School of the Year. She's witnessed scores of inquisitive expressions on the faces of both students and teachers while watching ACE at work, first in her classroom in Florida, next in a school she helped start in California, and today in Virginia.

"I'm so passionate about ACE and what it offers students," Tucker said. "It opens up many, many aerospace career options beyond being a pilot, like robotics, engineering and more. And not all students even want to go into aerospace, but so much of what ACE teaches is needed across the board. Thanks to ACE's hands-on, engaging lessons, they're all having so much fun learning that they're internalizing the information and retaining it so much better."

Every ACE teacher at each grade level gets a class set of manipulative materials as part of the program. In first grade, students learn about the parts of airplanes, so their ACE lessons include balsa wood planes that they assemble. By fifth grade, they're learning the basic principles of flight, so they have propeller planes to illustrate

the concepts of lift, force and drag.

ACE program manager Sue Mercer is also a former teacher, and ACE's interactive aspects instantly appealed to her. "It's something different," Mercer said. "That's what really sparked my interest, watching the kids get so involved. They are not passive but are

By the Numbers

Now in its 11th year, the Aerospace Connections in Education program currently involves:

51,170 students and

920 teachers at

344 schools in

46 states, and

1 school on a U.S. Department of Defense base in Japan.

About **227,000 students** have been impacted by the ACE program in the past **10 years**.



ACE students study clouds and learn about weather with their teacher, Rosanna Chiarella, at Palm Springs North Academy in Hialeah, Florida.

◀ This ACE student is helped inside a CAP plane by a cadet from the Auburn Composite Squadron in Auburn, Alabama. Photo by Susan Mallett, CAP National Headquarters

ACE has racked up some impressive figures for its 10th anniversary, but the program is about so much more than numbers, as Megan Tucker stressed. Tucker is the STEAM (STEM plus art) specialist at Hillsboro Charter Academy in Hillsboro, Virginia, the school that hosted ACE's



ACE students like these at Hillsboro Charter Academy in Hillsboro, Virginia, often get the opportunity to operate a CAP STEM Kit flight simulator. Photo by Susan Mallett, CAP National Headquarters

willing participants in the lessons. It's amazing to see the lights turn on in their eyes."

The success of hands-on, inquiry-based teaching caught ACE program founder Mallett's attention quickly, too, when she was principal of a Montgomery, Alabama, school, near CAP National Headquarters. "In 1986, I started incorporating CAP aerospace lessons into my curriculum," she said. "CAP volunteers assisted at the school, which helped make our aerospace program a great success."

Mallett saw her school's overall test scores increase, placing second in the system behind the area's academic magnet school. "This was a lower socio-economic school," she said. "We could clearly see the evidence of the aerospace education working in the lives of our students."

CAP took note as well and asked Mallett to join its national team so she could create a similar educational program for use across the nation. She assembled a group of teachers, and together they built the ACE program.

The proof of ACE's effectiveness keeps coming. "Teachers tell us they have seen a 27 percent increase in science thinking skills on standardized tests due to ACE," Mallett said.

ACE makes abstract ideas more concrete and easier to absorb — obvious benefits for students. But ACE is also making things easier on teachers, particularly those without a STEM background.

Ensuring everyone would feel confident implementing the ACE program was a goal from the beginning, Mallett said. "We realized lots of teachers, especially in elementary school, were not comfortable with 'aerospace,'" she said. "So we made it easy for the teachers to learn as they go and not be intimidated by these topics."

Mercer echoed Mallett: "We've tried to make ACE very teacher-friendly."

The program also encourages teachers to seek outside assistance. "We want them to invite community leaders, parents and local CAP and Air Force Association volunteers into the classroom to help them teach the lessons and provide aviation-related career information," Mallett said.

Tucker has taken this advice to heart, arranging for a parachute team from an area military base to descend on her Florida elementary school as the finale of her school's end-of-year ACE celebration. "The kids were awestruck," she said. "It was really cool."

Mallett pointed to the value these experiences bring. "Having CAP, AFA and other volunteers in the schools conducting demonstrations and coordinating aviation-related field trips makes the students feel special," she said. "It gets them excited, and it builds confidence."

While these efforts add even more interest to the ACE program, they also form bonds with the community and with CAP. "It aids the teachers but also increases wider involvement and engagement in the schools, which is beneficial to all," Mallett said.

ACE is also strengthening CAP's relationship with the Air Force Association. "AFA is our strongest STEM partner, as it has a similar aerospace education mission, so we reached out to the association in the beginning," Mallett said. "ACE has enjoyed such strong support from the AFA; many AFA chapters and CAP squadrons are collaborating on engagement with the ACE program schools and teachers."

For example, local CAP squadron pilots come into Tucker's classroom to give flight lessons to her students using flight simulators obtained through a CAP STEM grant.

AFA has also provided grant money to CAP to use in the ACE program, including funds for the annual ACE awards, which recognize the work of standout ACE educators and students. AFA has provided funding for unique ACE shirts for the participants, too. “The ACE program has solidified the alliance between all of CAP and AFA, which is exciting,” Mallett said.

Maintaining a close-knit connection between ACE and local CAP units is particularly important, since another ACE purpose is to foster interest in CAP’s cadet program.

“ACE was designed to serve as a feeder program for the cadet program,” Mallett said. “Squadron adults and cadets are working with fifth- and sixth-grade ACE students to provide awareness of and interest in the cadet program. We have also had wing commanders, region leaders and other top-level CAP leaders engage with ACE schools.”

Building the cadet program was also the inspiration behind ACE’s architecture, which was modeled on the program’s focus on aerospace, physical fitness and character. Character education messages are embedded throughout the ACE lessons.

“Character education and physical



ACE students at Wetumpka Elementary in Wetumpka, Alabama, enjoy experimenting with parachutes. Photo by Susan Mallett,

CAP National Headquarters

fitness are both crucial in developing the next-generation STEM workforce,” Mallett said.

While ACE includes a pre- and post-test for each grade level that indicates exactly how well the program works, no hard numbers are available on how many students participating in ACE end up as CAP cadets. But Mallett sees a strong link.

“We haven’t been able to track this in cadet registrations, but anecdotally, we do know that there are ACE students becoming cadets,” she said. “There is a strong connection to CAP, and we know it’s working when it

comes to better outcomes for students.”

Mallett continually hears success stories that bear this out. Ninety-eight percent of ACE teachers say the ACE program skills fit well with the content skills they have to teach. “We know that ACE days are days that students are much less likely to miss school, and it’s also been shown to decrease behavior issues,” Mallett said.

And the future of ACE is moving beyond the school walls and school hours. After-school, summer, church and museum ACE programs are now offered.

“It’s really exciting to see ACE expanding and impacting students academically, morally and physically,” Mallett said. “If our program continues to help introduce young students to potential aviation and/or other STEM-related careers, we will view our efforts as successful.” ▲

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