



Aerospace Education

Presented by

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National AE Staff

and

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and

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How To Do Teacher Workshops

- A model approach
- Why do a teacher workshop?
- How do you start one?
- What resources do you need?

MISSION



Mission

- To educate both CAP members and the general public on the important role aviation and space has played and will continue to play in America's future.
- To encourage our nation's youth to consider aerospace careers and to promote civil aviation to local communities.

External AE Mission

- To educate the public about aerospace education
- To educate students about aerospace education
- To reach out to the teachers to enlist their help in educating youth about aerospace education

Why Teacher Workshops?

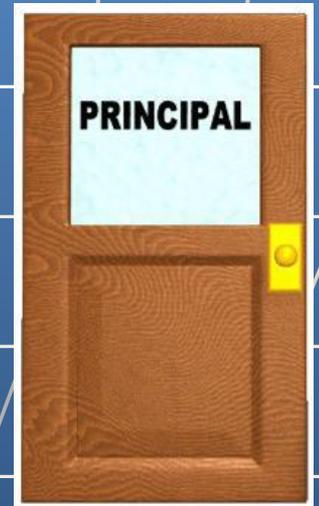
- Teacher workshops represent the best way to reach teachers
- Teachers must attend a number of teacher workshops each year
- Professional Teacher Development courses are a must for re-certification
- This is the KEY to reach teachers for CAP

A How To:

- Teacher workshops may be as short as an hour or two, or as long as a two to three week graduate level course
- They must award either professional teacher development hours or graduate credit
- Must be approved by the school system or a college or university

Contact Key Decision Maker

- For a local school system you must have help from a key decision maker
- It may be the superintendent, professional development head, or other
- For a local school it may be the principal or instructional head



Why would they approve CAP to present?

- We have **free** educational resources for teachers.
- We have curriculum at all grade levels that is professional and meets current educational standards
- We have **STEM!**



STEM



Science • Technology • Engineering • Math

- Science, Technology, Engineering, and Math (STEM)

STEM is big in education! There is a major push in education at all levels to improve in science, technology, engineering, and math education

CAP STEM Kits

- CAP currently has STEM kits:
- Robotics
- Astronomy
- Rocketry
- Flight Simulator
- Model and remote-control Aircraft
- Weather station
- Quad copter
- Drone



AEMs are eligible for free STEM Kits

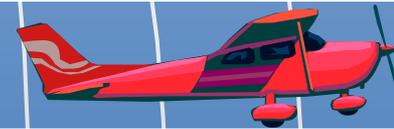
- Teachers may join as an AEM, (Aerospace Education Member) and order these free STEM kits.
- Once an AEM, they can receive educational resources worth thousands of dollars.
- More information go to capmember.com/stem-ed

Why would a school or school system let you in?

- Because we come bearing free STEM resources and kits
- Because we come bearing curriculum material that meets national standards, FREE
- Because students have an interest in aviation and space exploration.
- Because teachers need STEM!

AE Resources for AEMs

- STEM Kits
- AEX Program
- Teacher flight Program
- AEM Program
- ACE Program
- Model Rocket Program
- Educational Grants, AFA
- AE Teacher Workshops—University of Tennessee, July 5-23, 2017 Knoxville, TN



What to cover in your AE workshop

- What is Aerospace Education and why it is important
- Aviation and space exploration/astronomy focus
- Hands on activities, AEX and other
- Resources to teach AE, CAP and others
- Grants available, CAP, AFA, others
- CAP teacher flights and field-trips

National AE Teacher of Year Award

- Suzanne Costner, wins 2017 National AE Teacher of Year and her school Fairview Elementary, ACE School of the Year.



University of Tennessee Aerospace Workshop for Teachers July 2017



University of Tennessee Aerospace Workshop for Teachers



- The Tennessee Wing of CAP has staffed and presented a two week aerospace workshop for teachers at the University of Tennessee for the past 22 years. In the past 22 years we have trained over 500 teachers in AE.
- Teachers attending the workshop receive 3 hours of graduate credit at little or no cost. The course also counts for re-certification in Tennessee.

Our AE workshop at UT Knoxville

- The State of Tennessee Aeronautics Department funds the workshop. The mission is to teach teachers what aerospace education is and why is it important; and how to teach it. The purpose is to give them the knowledge and resources to go back to their classrooms and teach aerospace.

Our AE Workshop

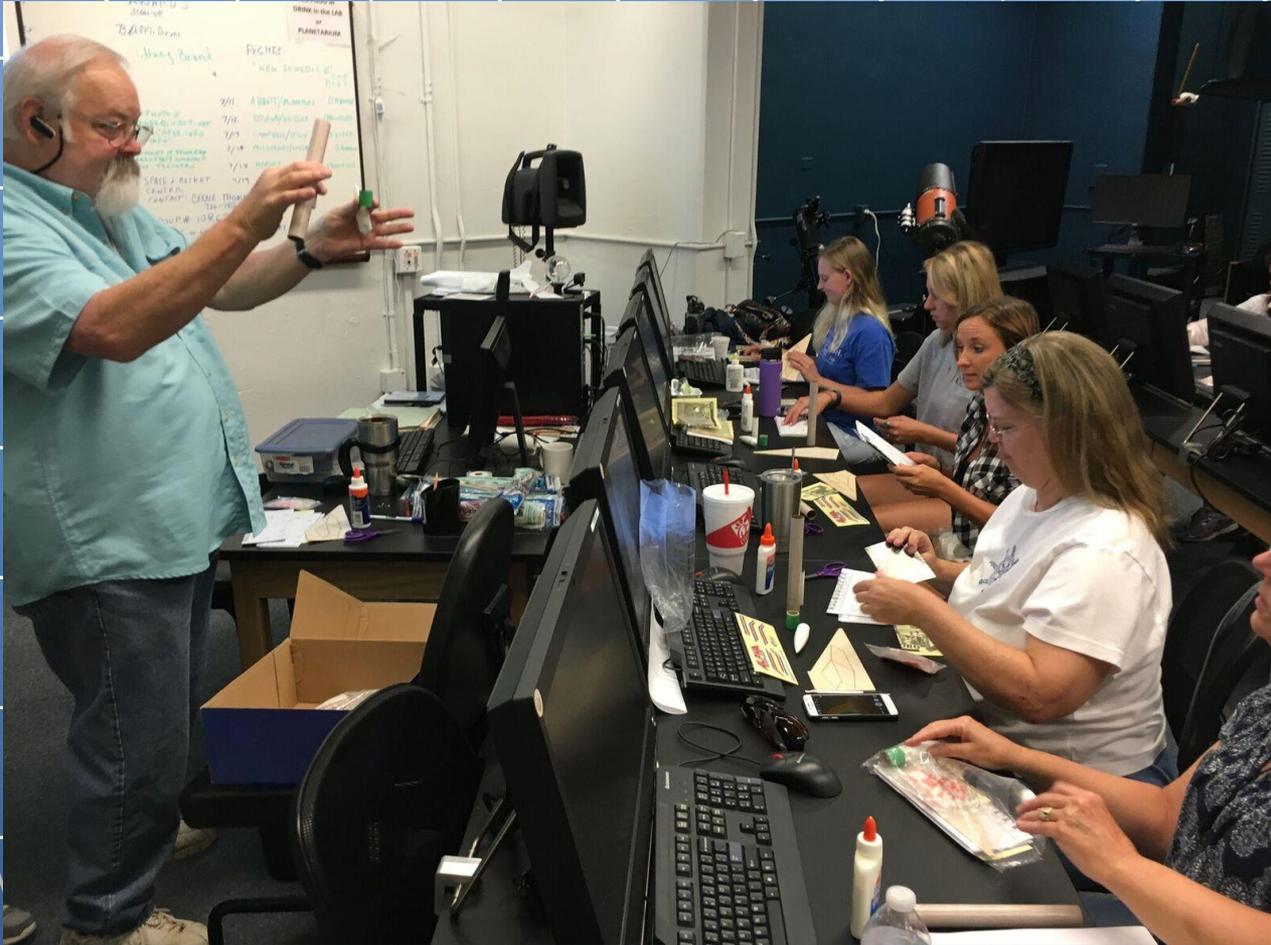
- We use a combination of field-trips to airports, aviation museum, Space and Rocket Center in Huntsville Alabama
- Flights with CAP and the USAF 134th Air Refueling Wing in Knoxville
- Heavy emphasis on STEM and teaching methods (hands-on)

Date	MORNING	AFTERNOON
July 7, 2014 Monday	0900-1200 Registration at UT Physics Building, room 108 (note new room from past workshops). Welcome and registration	Each teacher gets two hours of general aviation flight orientation provided by the Civil Air Patrol. Two teachers per plane.
July 8 Tuesday	0900-1030 CAP orientation Major General Richard Bowling, Retired National Commander CAP Colonel Bill Lane, TN State Commander 1100-1130 Egg-drop contest info	Orientation flights at Knox Air Aviation-McGee Tyson Provided by Civil Air Patrol; Coordination: LTC Gary Lynn Group and Committee Work
July 09 Wednesday	0900-1130 Fundamentals of Flight. Genie Rae O'Kelly	Continue orientation flights Group and Committee Work
July 10 Thursday UT Physics Building room 507	0900- 12:00 Women in Aviation Day in memory of "Mama Bird" Ms. Evelyn Johnson Speaker: Genie Rae O'Kelly	Continue orientation flights Group and Committee Work
July 11 Friday ----- Saturday & Sunday Flights	0900 to 12:00 Hanger Talk, Discussion between US military pilots WWII, Korean, Vietnam; of their flying experiences.	Continue orientation flights Saturday and Sunday Flights to be scheduled, if needed
July 14 Monday	0900—0900-12:00 Field trip to McGhee Tyson Airport. Tour and commercial aviation briefing. Park in short time park	Continue orientation flights Group and Committee Work
July 15 Tuesday	0900: Astronomy in your classroom Model Rocket Construction—Paul Lewis—UT Astronomy	Continue Flight Orientations Group and Committee Work
July 16 Wednesday	AE and STEM resources; Staff	Continue orientation flights and Group and committee Work
July 17 Thursday	Travel day to Huntsville, Alabama	
July 18 Friday	Visit NASA Teacher Resource Center Alabama Space and Rocket Center	Visit Alabama Space and Rocket Center Return to Knoxville
July 21 Monday	0900—11:30 Ralph Pubillones, AFA STEM/AE lab resources	Continue Flight Orientations Group and Committee Work
July 22 Tuesday	09:00 Arrive at McGhee Tyson Air National Guard Base 134th Air Refueling Wing Orientation Flight. McGhee Tyson Air National Guard Base,	Continue Flight Orientations Group and Committee Work
July 23 Wednesday	10:00-12:00 Field-Trip to TN Aviation Museum, Sevierville, TN	Group and Individual Work Makeup for Flight Cancellations
July 24 Thursday	0900 – 12:00 900 Egg Drop and Model Airplane 1100-1200 Model Rocket Launch	Finish makeup flights Group and Committee Work
July 25, Friday	0900-9:30 AE in your classroom Col Garner and Col Lynn, Final briefing: Lynn and Garner. 9:45-12 Group Presentations End of Workshop	Happy Flights

University of Tennessee AE Class of 2017



Astronomy Prof Paul Lewis directs rocket building



Fly our airplanes and launch our rockets





**Marshall Institute
Educator Resource Center**



**U.S. Space &
Rocket Center.**

**Education
Programs**



At NASA Huntsville





"LOCAL ARTISTS"
DESIGNER
GIFT
COLLECTION

CLAYTON C. ANDERSON
**THE ORDINARY
SPACEMAN**
From Boyhood Dreams to Astronaut
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We fly with USAF









DAVE GARNER



Teacher Workshops are the KEY!

- We need to increase our AE Workshops Teachers. Teachers have to re-certify and this opens the door for CAP AE Teacher Workshops
- I propose that each state conduct one or more teacher workshops starting in 2018-19
- I propose that we train our DAE's and AEO staff on organizing and presenting AE Teacher Workshops.
- I propose this training starts at the National AEO School



Teachers need to re-certify

- States require certified teachers to recertify every 10 years or sooner.
- Usually a combination of graduate education courses and/or in-service credit will count toward recertification.
- This need will bring the teachers to our AE workshop. It is up to us to teach them about AE and the resources that CAP offers them to teach it. This also gives us the opening to bring them in as new members of our AEM program.





Positive Results!



- With the first year that we offer AE Workshops for Teachers, we will more than double our AEM ranks!
- If we turn the teachers on to Aerospace Education and CAP, they in turn will help turn on the students to AE and lead to possible new CAP Cadets!
- Within a few years this approach can lead to tremendous growth of our AE program and our cadet and senior level membership!

Our AE Website

- www.capae.info

