

Spring South Central/North Central Section Meeting

Aerospace Education Report

March 23, 2018

What we do in Aerospace Education and, in particular, our outreach to bring women and girls into aviation and aerospace is critically important! If your Chapter is not doing at least one Aerospace Activity every year then it is time to wake up and answer the call of the future! **Share your passion for flight!**

Pilot Job Demand: Here's what Boeing foresees in the next 10 years: From 2018-2027 an estimated new pilot demand is 790,000 worldwide. Category Breakdown: Commercial: 635,000; Business: 96,000; and Helicopter: 59,000. They also estimate the global fleet to nearly double in that time. In addition, the need for crew members and technicians will increase proportionately.

What might these pilots be flying? For those of us who've enjoyed the building process, this is especially fun, but a jaw-dropper for all. Now they put 3 pilots into it at the last moment. If this is a "Baby" as its name states, isn't it appropriate for a woman to fly it? www.youtube.com/watch?v=DfOFq3fCVdw
CHECK IT OUT!

Airbus Establishes Pilot Training Program (Kate O'Connor) Airbus announced the launch of its ab initio Pilot Cadet Training Program last week. The company says the program is designed to "help meet global demand for pilots over the next 20 years." Airbus' partner for the program is Escuela de Aviacion Mexico (EAM), which is located close to the Airbus Mexico Training Center in Mexico City.
www.airbus.com/newsroom/press-releases/en/2018/07/airbus-launches-ab-initio-pilot-cadet-training-programme-.html

Don't have a clue where to start or what to offer?

The easiest starting place, if you have children or grandchildren, is to **offer to give a presentation** at their school. Long ago we used to the Air Bear program for Kindergarten and First Grade. It was a program to introduce them to the mysteries of the airport and the work people do there. Now a lot of children have more airline miles than I do. And yet there are some, especially disadvantaged youth who have never been to an airport.

Find the local Girl Scout Troop or State organization and offer a **Girl Scout Aviation Day**. It's fun and the scouts can earn an aviation interest badge. There are resources on the SCS website or contact me.

Check out resources on the [South Central Section website](#) and [The Ninety-Nines International Website](#) for Aerospace Education ideas.

I am a big proponent of networking rather than re-inventing the wheel. Here are some ideas of where you can go for help and ideas.

The **American Institute of Aeronautics and Astronautics** (AIAA) continues to offer their **Micro Lessons** (www.aiaa.org/MicroLessons). AIAA is still cranking out excellent lessons with suggested activities and lessons on the topic for Grades K-2, Grades 3-5, Grades 6-8 and Grades 9-12. Something for everyone!

They now have 81 lessons out there for **free**, structured for all ages. I hope maybe some of you went out to look at these outstanding standalone lessons or joined AIAA for FREE as an educator member (use Ctrl+click to follow the links to website, pdf Version takes you to a simple printable version).

- Lesson 72: [Fire in Space](#) » [pdf Version](#)
- Lesson 73: [Simple Machines in Aerospace Engineering](#) » [pdf Version](#)
- Lesson 74: [Prime Numbers](#) » [pdf Version](#)
- Lesson 75: [Space Weather](#) » [pdf Version](#)
- Lesson 76: [Apollo 8](#) » [pdf Version](#)
- Lesson 77: [Exoplanets](#) » [pdf Version](#)
- Lesson 78: [Hovercraft, Hydrofoils, and Ornithopters](#) » [pdf Version](#)
- Lesson 79: [Riding a Space Shuttle Solid Rocket Booster](#) » [pdf Version](#)
- Lesson 80: [The Periodic Table of the Chemical Elements](#) » [pdf Version](#)
- Lesson 81: [Pluto](#) » [pdf Version](#)



Events	Public
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American Institute of Aeronautics and Astronautics

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Inside This Section

- Aerospace Micro-Lessons
- FIRST LEGO League Grant Program
- Distinguished Mentorship (DM) Program
- DM Program - Speaker Request
- AIAA Foundation Classroom Grant
- AIAA Foundation Educator Achievement Award
- Careers in Aerospace
- Educator Academy
- Educational Resources
- Generation STEM
- STEM K-12 Poster

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AIAA also sponsors a number of other programs / opportunities. Check out the side bar above and visit www.aiaa.org/EducationalResources.

Drones continue to be in the news these days. Recent natural disasters have been reported upon by news organizations using drone imagery. I bet many of the youngsters you know already have a drone – or want one. Hopefully they know the safety regulations regarding drones. If not – here is a great topic for an Aerospace Education session, made all the more exciting if you have a drone for them to see and maybe fly. A resource for you can be found with your local **Academy of Model Aircraft** (AMA) chapter at www.modelaircraft.org. Find the nearest club by looking in www.modelaircraft.org/club-finder. No doubt there is an RC enthusiast nearby to help you.

Still a personal favorite of mine, and one that grabs youngsters attention very quickly is “**Sector 33**”. This is an Air Traffic Control Simulation based on real ATC routes for the approach to San Francisco. The “newly updated Sector 33 ATC Simulator” even has ATC Audio!

Visit www.atcsim.nasa.gov to learn more or download “Sector 33” for your iPad or Apple phone at www.nasa.gov/centers/ames/Sector33/iOS/index.html. You can download a demo version to a laptop or computer for use in a group or school setting. I have demonstrated it while youngsters are waiting for their **Young Eagles Flight** at an EAA event. While you are out there, check out all the other fantastic resources on the **NASA website**. www.nasa.gov/offices/education/about/index.html

International Aviation Art Contest: Since 1989 the Fédération Aéronautique Internationale (FAI) has sponsored the International Aviation Art Contest to challenge young people to illustrate the importance of aviation through art. Demonstrating the impact of aeronautics through an interactive, fun medium such as art motivates youth of all ages (nasao.org/page/international-aviation-art-contest). Look at some of the past winners artwork (cdn.ymaws.com/nasao.org/resource/resmgr/pdf/2018-art-contest.pdf)!

While the deadline for 2019 has passed, consider encouraging your local school art teachers to look at the materials so their students – or your children or grandchildren - can enter next year.

Contact your local State Aviation Department and find out if they are sponsoring an Aviation Art Contest. Print some brochures and spread the word to youngsters ages 8-16. Here is this year’s brochure with the rules: cdn.ymaws.com/nasao.org/resource/resmgr/pdf/2019_international_aviation_.pdf

Civil Air Patrol has an **Aerospace Education Membership** category. Join as an Aerospace Education Member (AEM) of Civil Air Patrol (CAP) and enjoy many free aerospace/STEM educational opportunities ranging from receipt of a variety of curriculum materials and STEM Kits to participating in a teacher orientation flight aboard one of our Cessna aircraft at your local airport. This unique membership category is designed for formal or informal educators involved in promoting aerospace/STEM education in classrooms, homeschools, museums, libraries, or other youth organizations: www.gocivilairpatrol.com/programs/aerospace-education/join-as-an-aem

The Real World Design Challenge (RWDC) is an annual competition that provides high school students, grades 9-12, the opportunity to work on real world engineering challenges in a team environment. Each year, student teams will be asked to address a challenge that confronts our nation’s leading industries. Students will utilize professional engineering software to develop their solutions and will also generate presentations that convincingly demonstrate the value of their solutions. The RWDC provides students with opportunities to apply the lessons of the classroom to the technical problems that are being faced in the workplace: www.realworlddesignchallenge.org/pdf/RWDC_brochure_High_res_final_2013.pdf

Black female pilot pushes girls to reach for their dream in aviation: Beth Powell, an American Airlines pilot, was inspired by one of her teachers at a young age to become a pilot. Today, Powell works with students, bringing awareness to the many opportunities for women in aviation and has set up a scholarship fund for more diverse pilots. "Set your goals. That passion will propel you through, and you will truly feel that you never worked a day in your life because you absolutely love what you do," Powell said: www.today.com/video/meet-the-african-american-pilot-helping-young-girls-reach-new-heights-1444280899779

Spring South Central/North Central Section Meeting Aerospace Education Report March 23, 2018

Honeywell Sponsoring Space Camp Students: Honeywell will be sponsoring 292 high school students to attend its annual Leadership Challenge Academy at the U.S. Space & Rocket Center (USSRC) in Huntsville, Alabama. The Honeywell Leadership Challenge Academy is a series of two one-week-long space camps run for children of the company's employees. As shown in the video below, the program is designed to "encourage students to pursue science, technology, engineering and math (STEM) careers" by setting real-world, hands-on challenges in areas such as coding, computer sciences and astronautics.

USI Partners with Drone Nerds to Offer Drone Education to Prepare Students for Industry-Specific Sectors: The Unmanned Safety Institute (USI) has partnered with Drone Nerds to provide cost-effective solutions for drone technology and fleet management for USI's STEAM education programs and collegiate workforce development programs nationwide.



USI and Drone Nerds will offer Career Cluster Kits that are designed to provide the technology hardware, sensor, and software being utilized in specific industries so that Career and Technical Education Programs across the country can offer drone education that prepares students for industry-specific sectors.

Read more: [State Aviation Journal: www.stateaviationjournal.com/index.php/unmanned-systems/usipartners-with-drone-nerds-to-offer-drone-education-to-prepare-students-for-industry-specific-sectors](http://www.stateaviationjournal.com/index.php/unmanned-systems/usipartners-with-drone-nerds-to-offer-drone-education-to-prepare-students-for-industry-specific-sectors)

Virtual reality could speed up pilot training for Army

The Army is exploring the potential of virtual reality technology to help speed up the training of helicopter pilots as the service adds more pilot trainees to its ranks. By 2021, the Army plans to turn out 1,300 new pilots annually. [Aviation Week & Space Technology \(2/11\) www.aviationweek.com/vertical-flight/us-army-embracing-virtual-reality-helicopter-training](http://www.aviationweek.com/vertical-flight/us-army-embracing-virtual-reality-helicopter-training)

Girl Scout flies from a cookie box to the cockpit

Katherine Kennedy was 13 years old when she climbed into a Beechcraft Baron 58 for a photo shoot that would land her picture on Girl Scout cookie boxes, but she never forgot how it felt to sit in the cockpit. Nineteen years later, she celebrated her successful private pilot checkride. Kennedy took the time to thank the "Charles B. Wheeler Airport team 'past and present'" who introduced her to aviation so long ago: "The time, effort and advocacy to expose young people to aviation makes such a huge impact -- I know that it did for me!" [AOPA Online \(1/25\) www.aopa.org/news-and-media/all-news/2019/january/25/how-sweet-it-is.](http://www.aopa.org/news-and-media/all-news/2019/january/25/how-sweet-it-is)

Engineering is Elementary (EiE), the school curriculum division of the Museum of Science of Boston, has expanded its award-winning engineering education program to children as young as three with the release of two new curricula: Wee Engineer, which is designed for use in preschool and pre-K programs, and EiE for Kindergarten, which is designed for use in kindergarten. The new curricula are the first of their kind to meet the specific learning needs of our youngest students. Check out some of the curriculum units available (has a cost). www.eie.org/engineering-everywhere/curriculum-units

DiscoverE (We are the E is STEM) We are DiscoverE (formerly the National Engineers Week Foundation): We help unite, mobilize, and support the engineering and technology volunteer communities. Why? They will increase their collaborative footprint in K-12 education and celebrate with the public as it discovers the value of engineering education and careers. An **activity** from discoverE: **Flight Test** - Planes are slowed by drag from air friction, which also reduces fuel efficiency. When it comes to planes, less drag means less fuel used. Design a plane that glides down a zipline the fastest. Students compete to design a "spoon plane" that glides down a zipline the fastest. www.discovere.org/our-activities/single-activity-detail/Flight%20Test

Code.org® is a nonprofit dedicated to expanding access to computer science in schools and increasing participation by women and underrepresented minorities. Our vision is that every student in every school has the opportunity to learn computer science, just like biology, chemistry or algebra. Code.org provides the leading curriculum for K-12 computer science in the largest school districts in the United States and Code.org also organizes the annual **Hour of Code** campaign which has engaged 15% of all students in the world. **TRY IT!** www.hourofcode.com/us.

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STEM Tidbits: On an erratic basis, I send out an email called **STEM Tidbits** with items I think would be of interest to educators, youth and aviation enthusiasts. The above paragraphs are samples of what STEM Tidbits might contain. If you want to be added to my email group, just contact me at akwoman86@yahoo.com. It is a blind cc group, so I do not share anyone's email address.

Since I became Commander of my local Civil Air Patrol Squadron, I find it is more time consuming than I expected. I apologize to South Central Section Ninety-Nines Aerospace Education Chairs that I have not more actively engaged with you all.

Looking at the SCS Website under Aerospace Education, it appears that no Chapters have submitted any activity updates since 2012! Surely you all have had activities! Don't be shy, tell us what you are doing or have done this year.

1. What activities are you undertaking in your Chapter?
2. Are you connecting with local Girl Scout groups to offer an Aviation Day?
3. How many events have you executed in the last quarter?
4. How can I support your efforts? Do you need activity ideas?
5. Don't forget to visit the Section website:
www.scs99s.org/advisors.htm#Aerospace%20Education and the Ninety-Nines International Website www.ninety-nines.org/aviation-and-space-education.htm for Aerospace Education ideas.

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