



PUBLISHED BY AND FOR THE MEMBERS OF THE AIAA DELAWARE SECTION
November/December 2016

Delaware Section Members,

The council and I would like to wish you and your loves ones Happy Holidays! 2016 was another busy year for the section and I would like to thank you all for your volunteerism, participation, or even just for reading our newsletter.

I would also like to take this time to offer a very heartfelt thank you to our longtime treasurer, Erika Conly. Erika has been a member of the Delaware section for 16 years and on the council for almost as long. She has been our secretary, vice chair, and most recently our treasurer. We even created a special position of "Advisor to the Chair" for two years for her. She has attended CVD, run STEM events and planned distinguished lecturer dinners. Her dedication to the section went as far as actually counting out individual Nerds candies for our Eweek Candy guessing competition, and then vowing Never Again! Erika, we wish you the best of luck on your new adventure, and promise to still keep all the receipts in honor of you.

Thank you all for a wonderful 2016 and here's to an even better 2017. Happy Holidays!

Breanne Sutton
Chair
AIAA Delaware Section

**HAPPY
HOLIDAYS!!**



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Around AIAA, Industry, and Our Section

AIAA Fellow and Delaware Section member presents at ASM/ASME/AIAA joint meeting

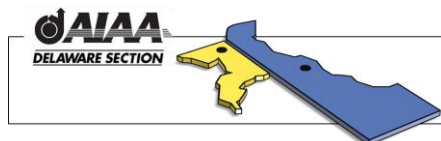
On November 15, 2016 AIAA Fellow and Delaware Section member Dave McGrath was the guest speaker at a joint meeting between the Delaware chapters of ASM, ASME and AIAA at the Mendenhall Inn in Mendenhall, PA. Dave had a diverse audience listening to his talk, titled “**Materials and Mechanical Advances in Solid Propulsion: Orion Launch Abort Attitude Control Motor and Abort Motor**”. There were 36 members of the audience from high school students to retirees with backgrounds in materials, mechanical engineering and aerospace engineering as well as students from the University of Delaware in both mechanical engineering and materials science. Dave’s talk was well-received and many of the audience members stayed after the presentation to have the opportunity to discuss the content further.



L-R: Lisa Drinnan (ASME Delaware Chair), Adam Blackford (ASM Delaware Chair), Dave McGrath, Breanne Sutton (AIAA Delaware Chair)

Engineers Week returns in February!

The end of the year is quickly approaching, which mean’s E-week is nearing. AIAA DE is excitedly planning this year’s events for the work week of February 20. To go along this year’s theme, “Dream Big”, we decided to dream up a few different activities for the week. Each event in which you participate earns you points towards the final day’s game set to test your knowledge. In the final game, you will be able to team up (max 3 per team) where you will compete to get the most correct answers. Each correct answer



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will earn you points and each event you participate earns you points towards your team's score. Start recruiting now!

That Thursday also marks Introduce a Girl to Engineering Day (IGED), where our section will be hosting local students at Orbital ATK's facility in Elkton, MD for a great day of activities, including a tour of the rocket motor factory.

In addition to the daily activities, we will also be providing the daily factoids and sci-fi thoughts. We will continue to provide more details as we near and look forward seeing you!

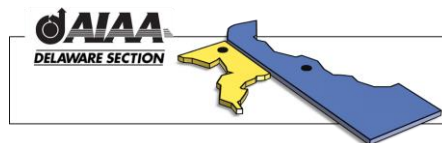


This Month in Aerospace History – December

In 1903, Wilbur Wright makes the first and unsuccessful attempt at powered flight at Kill Devil Hills, North Carolina. His aircraft stalls after 3½ seconds in the air and crash—lands 105 feet away.

In 1934, the first airway traffic control center is opened in Newark, New Jersey, operated by the staff of Eastern Air Lines, United Air Lines, American Airlines and TWA.

In 1953, Mach 2.5 is achieved for the first time by Major Charles “Chuck” Yeager in the Bell X—1A. The rocket—propelled experimental aircraft reaches 1,650 mph at 70,000 feet.



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In 1964, a United Air Lines "Caravelle" makes the first landing in the United States completely controlled by a computer (automatic touchdown).

In 1968, the crew of Apollo 8 enters into orbit around the Moon, becoming the first humans to do so.

In 2003, Burt Rutan's "SpaceShipOne" becomes the first privately designed and manufactured manned aircraft to exceed the speed of sound.

STEM Corner

(Science, Technology, Engineering, and Mathematics)

If you have participated in recent STEM activities, let us know as we would love hear about them and recognize your efforts.

Volunteers needed for Mission Space night at Bunker Hill Elementary

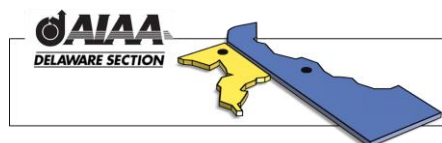
AIAA Delaware will be hosting an activity at Bunker Hill Elementary School's **Mission Space** night on January 24th. The event is open to 4th-6th graders in Appoquinimink School district in Middletown, DE. The organizers are anticipating around 1000 students to participate this year, making it the largest Mission Space to date! The Delaware section is looking for volunteers to help man the activity booth. Please contact Breanne Sutton (Breanne.sutton@orbitalatk.com) if interested in volunteering.

Public Policy In Action

As the world's largest aerospace professional society, AIAA plays a key role in the national public policy debate. This section highlights current policy issues of importance to the Aerospace community.

Senate Committee Passes NASA Authorization Bill

The Senate Committee on Commerce, Science, and Transportation passed the NASA Transition Authorization Act ([S. 3346](#)) on 21 September. The bill authorizes \$19.5 billion for NASA in Fiscal Year 2017, the same amount approved by the House Appropriations Committee in its version of the Commerce-Justice-Science appropriations bill. Among many policy provisions governing NASA programs, S. 3346 extends utilization of the International Space Station through at least 2024 and requires an evaluation of the feasibility of operations through at least 2028; directs NASA to continue the Space Launch System and Orion programs with the first uncrewed mission in 2018 and the first crewed mission by 2021; adds human exploration of Mars as an explicit goal and objective for NASA and requires the agency to submit a strategic framework and critical decision plan on how to achieve it; allows NASA to indemnify companies providing launch or reentry services for the agency for third-party damages or injuries above a level the companies must insure against; and requires NASA to study alternatives to its controversial Asteroid Redirect Mission that could also demonstrate key technologies for Mars exploration. Also included in the authorization package is a section on "Medical Monitoring and Research Relating to Human Space Flight," which allows NASA to provide medical monitoring, diagnosis, and treatment for current and former U.S. astronauts and payload specialists. The legislation must now be considered by the House of Representatives, which passed their own NASA authorization bill ([H.R. 810](#)) in 2015.



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Commercial Space and Astronaut Health Bills Advance in House

On 21 September, the House of Representatives passed a bill ([H.R. 6007](#)) that gives the FAA authority to examine whether structures being built near spaceports will obstruct spaceflight. The FAA currently has that authority for conventional aircraft. H.R. 6007 was introduced by Rep. Kevin McCarthy (R-CA) and must now be considered by the Senate. The same day, the House Committee on Science, Space, and Technology considered and passed the Research, Evaluate, Assess and Treat (TREAT) Astronauts Act ([H.R. 6076](#)). Sponsored by Rep. Brian Babin (R-TX), the legislation would authorize NASA to provide medical monitoring of former astronauts to better understand the long-term health effects of human spaceflight. H.R. 6076 must now be considered by the full House. Companion legislation has not been introduced in the Senate.

President Signs Space Weather Executive Order

On 13 October, President Obama signed a [directive](#) that instructs executive branch agencies on their responsibilities in preparing and responding to space weather events. The White House Office of Science and Technology Policy will coordinate the efforts of agencies across the government, which will work together to improve their ability to forecast space weather events and protect critical infrastructure from their effects. The executive order also calls for the release of federal data on previous space weather events.

Mark Your Calendars: CVD 2017 Scheduled for 29 March

The 20th annual [Congressional Visits Day \(CVD\) Program](#) will take place Wednesday, 29 March 2017, on Capitol Hill. AIAA will once again offer limited subsidies to assist members in their efforts to attend CVD. Registration will open in late November.

Join the Institute's Public Policy Activities

From Key Issue development to our annual Congressional Visits Day (CVD) program to fostering forum topics, advocating at the state level, and selecting deserving recipients of our honors and awards, the Public Policy Committee has a place for you. AIAA members interested in supporting our public policy objectives by serving on one or more of our [six working groups](#) should contact Steve Sidorek at steves@aiaa.org

Submit Your Key Issue Suggestions Online

The Public Policy Committee is looking for input on key issues to support the Institute's congressional advocacy, forum content, state activities, and member engagement. Members with policy issue ideas should submit them via the [key issue webpage](#). Please be sure that your suggestions are timely and pertinent to the entire aerospace community. Alternatively, key issues suggestions can also be emailed to Tim Dominick, the Region I Deputy Director for Public Policy, at timothy.dominick@orbitalatk.com.



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PPC Vacancies: Seek New Co-Chairs

The Public Policy Committee has three vacant positions that it hopes to fill immediately:

- Two (2) Co-chairs, Honors and Awards Working Group
- One (1) Co-chair, Engagement Activities Working Group

The selected co-chairs would be appointed to a one-year term by the Vice President of Public Policy and must remain objective and serve the interests of the aerospace community as a whole. AIAA members interested in the three vacancies should contact Steve Sidorek steves@aiaa.org

Career and Workforce Development

As part of our career and workforce development lunch lecture series, AIAA Delaware hosted David B. Rich, chapter president of the Greater Newark Area Toastmasters club. Toastmasters is an international organization designed to improve communication and public speaking. Dave spent a lunch hour discussing ways to improve our presentation skills and leading by example. His presentation style was engaging and entertaining and his topic informative. As many of our members were not able to attend the lunch, we are providing some of Dave's advice in this newsletter.

Beginning your speech

On average, you have about 15 seconds to make an impression on your audience. Ensure that your opening is a strong one. Find ways to connect immediately with your audience – whether they are students at a STEM event or a panel at a design review. Be mindful of your energy. If you are speaking to students, be enthusiastic, be excited, be energetic! If you are speaking at a technical review, be confident, be positive. The audience will take its cue from your energy.

Know your audience

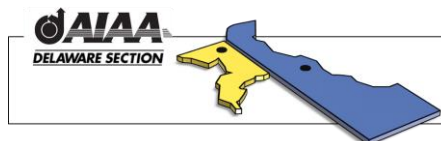
Do your research beforehand! For presentations at work, are you speaking to a marketing group, management or are you presenting to the engineers in the trenches? Each has its own knowledge and experience level that need to be catered too.

During your presentation

Learn how to control your fear. One of the best ways to do this is to PRACTICE. Practice in front of coworkers, practice by yourself, practice in front of your cat. Do not memorize your speech – know your material. Remember to breathe and take your time. If you feel as though you are speaking too slowly, you are likely going at a pace that gives your audience time to digest what you are saying. Remember that your body speaks louder than your words. Do not hide behind a podium or read words off the screen or a page the entire time.

Concluding your speech

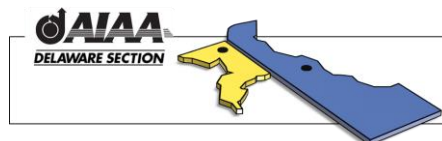
Just as with the beginning of your speech, you want to end your speech strongly and definitively. Do not leave your audience hanging and wondering “Is she/he done? Is there more?” Some recommendations from Dave on ending your speech include: use of a quotation, telling a short story or



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anecdote, leaving them inspired or having a call to action. Now, typically in technical reviews we'd rather NOT have a call to action (no action items please!) but you can leave your audience inspired and confident that the work you have done meets their needs.

AIAA and Toastmasters are happy to help you practice for your next technical review. The Delaware section is always looking for presenters at our lunch lecture series, an excellent opportunity to get on stage and in front of an audience. Toastmasters International has many clubs in the area and would be another great means to gain some experience before your next presentation to future generations of engineers or past.



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For your reference, the officers and council members for the 2016-2017 terms are listed below:

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Breanne Sutton, Orbital ATK; 410-392-1661

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Treasurer

Vacant

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RAC Representatives

Breanne Sutton and David Fox

THE DELAWARE SECTION

The Delaware Section is part of the American Institute of Aeronautics and Astronautics, the world's largest technical society dedicated to the global aerospace profession. The AIAA primary purpose is to advance the state of the art, sciences and technology of aeronautics and astronautics and to promote the professionalism of those engaged in these pursuits. The institute serves as the vehicle for focusing the energies and interests of its members in their own technical and professional development and service to society.

AIAA WEB SITE

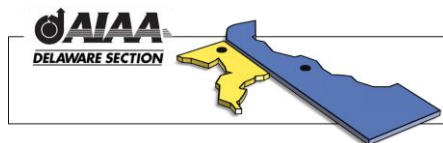
The AIAA Web site (www.aiaa.org) continues to receive over 45,000 visits per month and serves as a point-of-purchase for memberships, meeting registrations and subscriptions. It also provides access to bibliographic data of AIAA meeting papers for the past five years as well as connections to web sites of individual AIAA section chapters.

MEMBERSHIP

We continue to be encouraged by the number of new or prospective members that have recently shown an interest in the Delaware AIAA. If you know of any prospective members, please have them call Breanne Sutton, to obtain an application. Also, if you wish to be upgraded to Senior Member, Associate Fellow or Fellow, contact Breanne for details and an upgrade application form.

ARE YOU HAVING A MEMBERSHIP OR SUBSCRIPTION PROBLEM?

If you are having a membership or subscription problem you can contact AIAA customer service at 1/800-639-2422 or via fax at 703/264-7657. If the AIAA staff is not responsive, let your AIAA Ombudsman, John Walsh, cut through the red tape for you. John can be reached at 703-893-3610 or by writing to him at: 8800 Preswold Place, McLean, VA 22102.



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AIAA INFORMATION AND MEMBERSHIP

As of September 22nd, 2016, there were about 30,000 individual AIAA members of whom over 22,000 are professional members. Your local Delaware AIAA Section currently has 56 professional members as well as 35 Educator Associates and 9 Student Members. The Delaware Section professional membership distribution includes: 17 Members, 27 Senior Members, 10 Associate Fellows, and 2 Fellows.

Current AIAA Dues structure

Category of Membership	2015–2016
Associate Member, Member, and Senior Member Retired/ Return to Full-Time Study / Spouse / Unemployed (50% of member dues)	\$120 \$60.00
Associate Fellow Retired / Return to Full-Time Study / Spouse /Unemployed (50% of Associate Fellow dues)	\$131 \$65.50
Fellow Retired / Return to Full-Time Study / Spouse / Unemployed (at 50% of Fellow dues)	\$153 \$76.50
Full Time Student	\$25.00
Student to Professional Transition*	
2 nd yr	\$30
3 rd yr	\$60
4 th yr full member rate	\$90

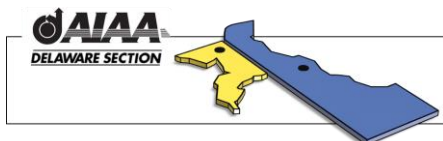
Retired, return-to-fulltime-study, spouse and unemployed rates are 50% of their regular member grade rate.

If you know a Young Aerospace Professional in the first five years of professional practice, AIAA will cut their first year's dues in half! After the first year, regular membership rate applies. They cannot have been a member or student member previously. To apply, they will need to call customer service at 800-639-2422 and talk to them directly – it cannot be done online.

AIAA also offers Free Educator Associate Memberships for educators in grades Kindergarten through 12 that are interested in the development and application of science, mathematics, and technology for their educational curriculum. To recommend a friend or colleague as an Educator Associate, contact Breanne Sutton for an application.

Membership Upgrades – To request membership upgrade information or nomination forms, contact Breanne Sutton or go to AIAA customer service at 800/639-AIAA (or 703/264-7500), or visit the AIAA Web site at: <http://www.aiaa.org>. See the following link for more information:
<http://www.aiaa.org/content.cfm?pageid=183>

Student Upgrades - Any student who is a member of AIAA in good standing at the time of graduation will automatically receive one free year of professional membership and the second year at half price.



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AIAA DELAWARE SECTION SOCIAL MEDIA

The AIAA Delaware Section web site is active. Please visit <https://info.aiaa.org/Regions/NE/Del/default.aspx> or navigate there via the AIAA National web site at: www.aiaa.org. We invite you to visit your Section's web site and provide any comments or suggestions.

Also, please visit any one of our many social media outlets:



[AIAA DE on the WWW](#)



[@AIAA_DE on Twitter](#)



[AIAA DE on LinkedIn](#)



[AIAA DE on Facebook](#)

Stay tuned to our twitter feed and Facebook page for the most up to date information.

HAVE YOU CHECKED OUT AN AIAA JOURNAL RECENTLY?

Whether you had no idea they existed or it has been some time since you have read one, AIAA's journals are the best resource for students and professionals who want to stay current on the latest aerospace research and development. Reporting on the most important aerospace advances, AIAA's seven active technical journals feature original research papers spanning the spectrum of aerospace science and technology. They include methods of analysis, technical knowledge, exploratory development, and new applications. There are over 50 years of archives stretching back to the times of the American Interplanetary Society, predecessor to the American Rocket Society. We have provided a link below and hope you take some time to browse all the great information available to you. Look for future issues of the newsletter to highlight excerpts that you may find interesting.

<http://www.aiaa.org/journals/>

