

Published by and for the members of the
AIAA Delaware Section

May 2020

Delaware Section

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Message from the Chair:

Delaware Section Members –

As May is ending, the weather is warming up and so are our section activities. We continue to bring you additional activities, videos, and readings in this month's newsletter. Don't forget to submit your highlights of activities for a chance to win a prize. Earlier this month we also restarted our lunch lecture series with a Virtual "Stargazing" lecture with Dan Dunlap, Northrop Grumman Chief Engineer, amateur photographer, and space enthusiast. Thank you to Dan for an excellent discussion of his evolution of love for the night skies and what we can see in our region. With one successful virtual activity under our belts, we have lined up 3 upcoming activities for you to check out in the next two months. Lastly, I write this after the scrubbed attempt and prior the second attempt of the first human launch on American soil since the Shuttle retirement. Make sure you tune into see this momentous event for NASA, commercial aerospace, SpaceX and America targeted for 3:22pm EST Saturday. God speed NASA astronauts Douglas Hurley and Robert Behnken!

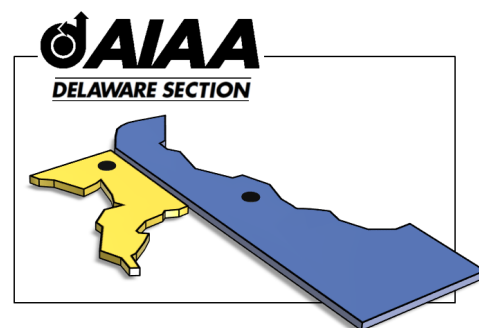
Thank you for being a member,

Dan Nice

Delaware Section Chair

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AIAA DE Section 2020-2021 Election Results!

The results of AIAA Delaware's 2020-2021 election are in, and the next term's officers have been decided! Mr. Daniel Nice will be serving his second term as section chair. **Mr. Noah Gold will be serving his first term as vice-chair. Mrs. Breanne Sutton will be serving as section treasurer.** Mrs. Elishabet Lato will be serving as section secretary. Please join us in congratulating the elected officers for 2020-2021! Thank you for everyone's participation.

Around AIAA, Industry, and Our Section

Virtual Happy Hour — Join us June 5th!

Please join us for our first virtual happy hour on June 5th at 8pm EST. Dave Fox will be presenting an OpenRocket tutorial while we sip our favorite beverages (or whatever is left in our cabinets)! We hope you will join us!

[Zoom Meeting Link](#)

Meeting ID: 844 2825 5525

Password: 437049



Stargazing Lunch Lecture Recap

Our first virtual lunch lecture was a success with a fantastic speaker and over 30 guests in attendance! We want to extend Dan Dunlap a great, big thank you for presenting and thank you for attending! We look forward to seeing you in June!

Technical Activities Division (TAD) News

We are beginning a new AIAA governance year and the Technical Activities Division (TAD) of AIAA has a new Chief – Jeff Hamstra of Lockheed Martin. Jeff was previously the Director of the Propulsion and Energy (P&E) Group for 6 years and in the last year, a Deputy for the group for the P&E and other Forums. I will be taking on that position from Jeff in this critical time for transitioning from the Propulsion and Energy Forum to having that content at the other Forums and Wayne Hurwitz of NG will be taking over my Deputy Director role for the At-Large and other Initiatives activities for the group. I am also still supporting the Council of Directors Innovations and Initiatives Committee (CIIC). Please let me know if you have any questions regarding the make-up of TAD, any of the Technical Committees (TC's) or the workings of the Technical side of AIAA.

Show us your STEM Adventures!!!

Are you having fun while learning at home? We'd love to see it! Submit pictures of your STEM adventures to aiaa.de@gmail.com by 6/22 for display in next months' newsletter and a chance to win a prize!

***Disclaimer:** By submitting a photo to AIAA DE Section you are providing permission for said picture to be published in the next months' newsletter. We will not use your photo anywhere else.



May's STEM Adventurer Winner

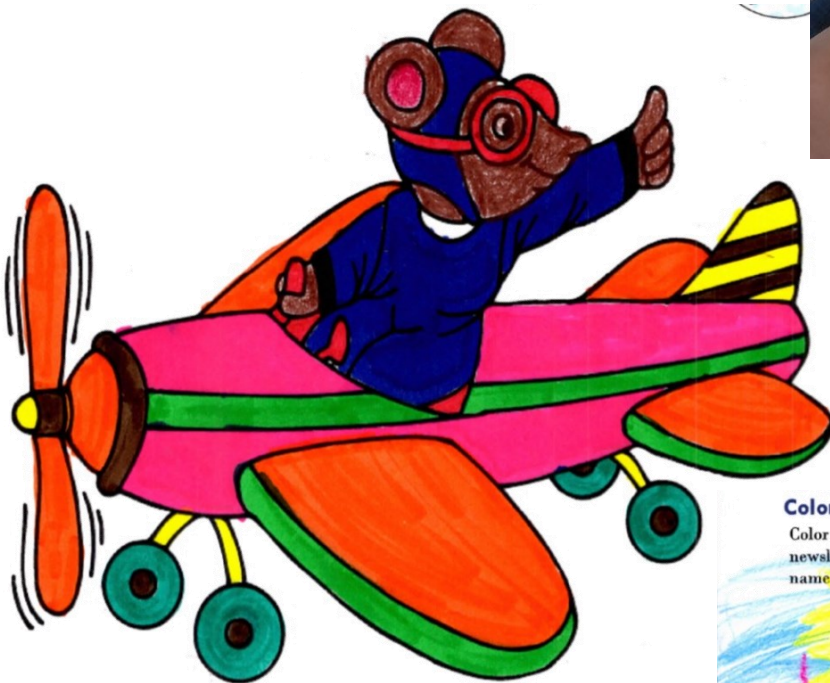
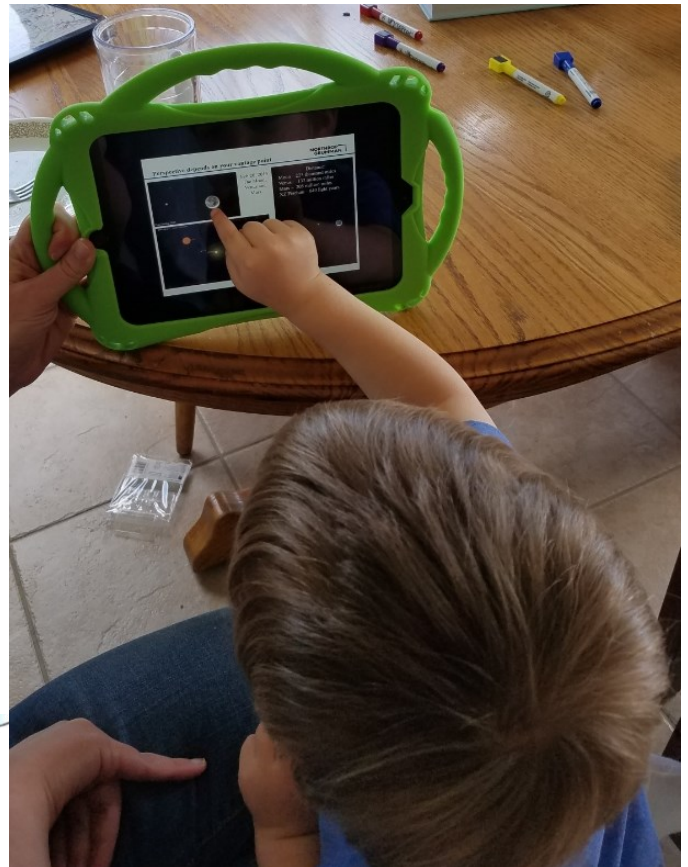
This month we received submission from Rory Sutton, Sabrina and Naomi Dominick. The wheel of chance chose Sabrina Dominick as May's STEM Adventurer winner! Congratulations, Sabrina!

May's STEM Adventures

Top Right: Rory Sutton enjoying this month's virtual lunch lecture

Middle Left: Coloring submission from Naomi Dominick

Bottom Right: Coloring submission from Sabrina Dominick



Coloring Fun — Submit your finished artwork!

Color in this fun mouse flying an airplane and we'll share it in next months' newsletter! No age limit, all submissions accepted! Submit artwork with name and age to aiaa.de@gmail.com by 5/22. One lucky submission will win



AMERICAN INSTITUTE OF AERONAUTICS & ASTRONAUTICS**AIAA DELAWARE SECTION PRESENTS****CAREER ENHANCEMENT/EDUCATION
LUNCH LECTURE SERIES PROGRAM****Star Trek: The Now Frontier****Date: Thursday, June 18th****Time: 12-1pm****Location: Virtual, Zoom**

The TV show Star Trek was created in the mid-1960s as escapist television. Even though the show and its successors were placed in the 23rd and 24th Centuries, the vision of the future four centuries from now can already be seen around us, with some things such as cell phones for communicators so commonplace today that we take them for granted. Hear more about what Star Trek predicted versus what is current 2020 technology from two local Trekkies
Anthony LoRusso and Matt Vinciguerra.

Join Zoom Meeting

<https://us02web.zoom.us/j/84336742955pwd=NERMVIFnazZiTIJDSU13SGgvUWVzUT09>

Meeting ID: 843 3674 2955

Password: 127120

One tap mobile

+13126266799,,84336742955#,,,,0#,,127120# US (Chicago)

+19292056099,,84336742955#,,,,0#,,127120# US (New York)

Dial by your location

- + +1 312 626 6799 US (Chicago)
- + +1 929 205 6099 US (New York)
- + +1 301 715 8592 US (Germantown)
- + +1 346 248 7799 US (Houston)
- + +1 669 900 6833 US (San Jose)
- + +1 253 215 8782 US (Tacoma)

Meeting ID: 843 3674 2955

Password: 127120

Find your local number: <https://us02web.zoom.us/j/84336742955pwd=NERMVIFnazZiTIJDSU13SGgvUWVzUT09>

STEM at Home (Science, Technology, Engineering, & Mathematics)

A NASA/DESIGN SQUAD CHALLENGE

TOUCHDOWN

Landing on the moon is tricky. First, since a spacecraft can go as fast as 18,000 miles per hour (29,000 km/hour) on its way to the moon, it needs to slow way down. Then it needs to land gently. That lander has astronauts inside, not crash-test dummies. Easy does it!



WE CHALLENGE YOU TO...

...design and build a shock-absorbing system that will protect two "astronauts" when they land.

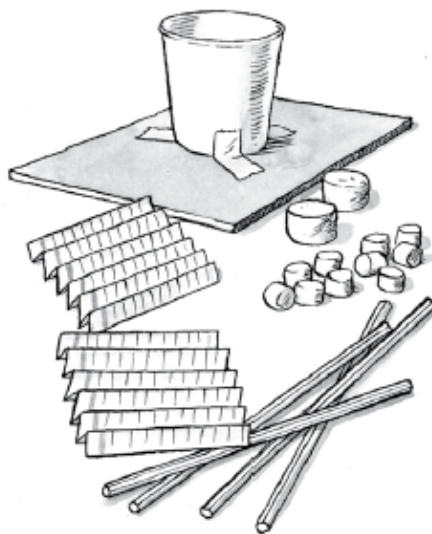
BRAINSTORM AND DESIGN

Think about how to build a spacecraft that can absorb the shock of a landing.

- What kind of shock absorber can you make from these materials that can help soften a landing?
- How will you make sure the lander doesn't tip over as it falls through the air?

BUILD

1. **First, design a shock-absorbing system.**
Think springs and cushions.
2. **Then, put your spacecraft together.**
Attach the shock absorbers to the cardboard platform.
3. **Finally, add a cabin for the astronauts.**
Tape the cup to the platform. Put two astronauts (the large marshmallows) in it.
(NOTE: The cup has to stay open—no lids!)



TEST, EVALUATE, AND REDESIGN

Ready to test? Drop your lander from a height of one foot (30 cm). If the "astronauts" bounce out, figure out ways to improve your design. Study any problems and redesign. For example, if your spacecraft:

- **tips over as it falls through the air**—Make sure it's level when you release it. Also check that the cup is centered on the cardboard. Finally, check that the weight is evenly distributed.
- **bounces the astronauts out of the cup**—Add soft pads or change the number or position of the shock absorbers. Also, make the springs less springy so they don't bounce the astronauts out.



MATERIALS (per lander)

- 1 piece of stiff paper or cardboard (approximately 4 x 5 in/10 x 13 cm)
- 1 small paper or plastic cup
- 3 index cards (3 x 5 in/8 x 13 cm)
- 2 regular marshmallows
- 10 miniature marshmallows
- 3 rubber bands
- 8 plastic straws
- scissors
- tape

Story Time — Book Recommendations for Everyone!

AIAA Delaware Section does not receive any compensation through these links!



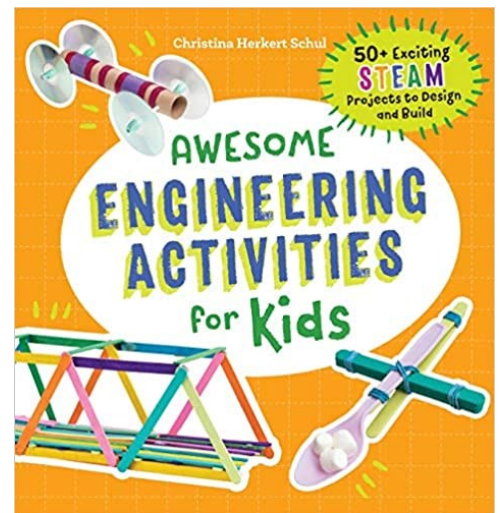
[Airplane Flight!: A Lift-the-Flap Adventure](#) by Susanna Leonard Hill Age Range: 0-5 years

Fasten your seatbelt and fly above the sky with this interactive book that's shaped like an airplane. This book includes rhythmic text and simple but enticing art.

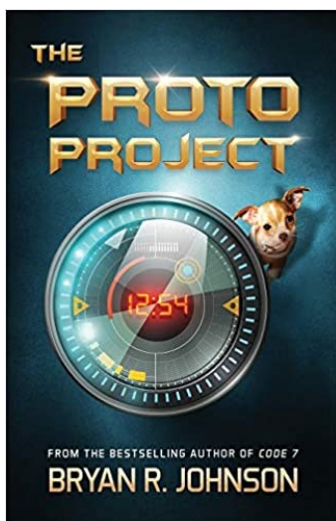
[Awesome Engineering Activities for Kids](#) by Christina Schul

Age Range: 5-10 years

Make engineering for kids easy and enjoyable with projects that use common, inexpensive household materials so they can play and learn anytime. From toothpick towers and marble runs to egg drops and water rockets, the activities in this book about engineering for kids will challenge and delight.



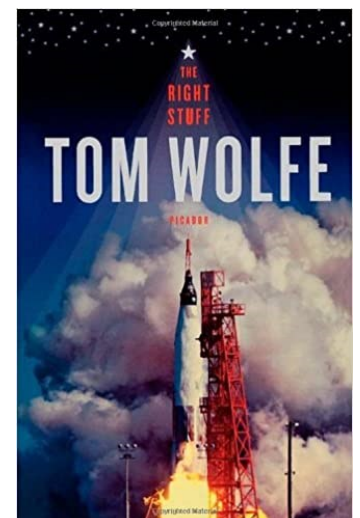
[The Proto Project](#) by Bryan R. Johnson
Age Range: 8-12 years



When Jason meets his mom's billion-dollar invention, an artificial intelligence device named Proto, he accidentally gets caught up in a mysterious adventure. Proto goes missing, and then people go missing.

[The Right Stuff](#) by Tom Wolfe
Age Range: Teen+

Millions of words have poured forth about man's trip to the moon, but until now few people have had a sense of the most engrossing side of the adventure; namely, what went on in the minds of the astronauts themselves - in space, on the moon, and even during certain odysseys on earth.



Coloring Fun — Submit your finished artwork!

Color in this fun mouse flying an airplane and we'll share it in next months' newsletter! No age limit, all submissions accepted! Submit artwork with name and age to aiaa.de@gmail.com by 6/22. One lucky submission will win prize!



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Experiment — Dancing Candy Hearts

This experiment will keep the kids intrigued over 2-3 weeks as they watch their stalactite grow.

Source: [What Scientist Joe with his Dancing Candy Hearts Experiment Here!](#)

Supplies Needed:

- 12 ounce drinking glass
- 8 oz of 7-up or Sprite
- 12 candy conversation hearts

Instructions:

Fill drinking glass with the soda

Drop all the conversation hearts into the soda

Observe the hearts dance up and down in the soda

How it Works:

The carbon dioxide picks the candy hearts up and throws them to the top of the glass. When they reach the top, the bubbles burst and the candy works its way down again.

Extra Experiments:

Try doing several glasses, but in each glass have only one color of conversation hearts inside. Does one color of conversation heart do better than others? If so, why could that be?

Try using several different types of soda (ex. Dr. Pepper, Pepsi, Coke, etc.). Which soda works the best?

Try using diet soda versus regular soda. Which soda works the best?



Working From Home Tips — Work and Home Distinctions

Starting the workday

- Do something to “Transition” – put on your shoes, get dressed (or at least put on your work pajamas)
- Plan the day, or review what the meeting schedule is

Ending the workday

- Break down work space if it's part of usual living space
 - ⇒ Can be as simple as putting something on top of the work laptop or blocking the work screen
 - ⇒ Or leave it behind if you have a space dedicated to work
- End by making a list of thoughts/things to do tomorrow

Protecting Personal Time

- Communicate your working hours – especially if they are off-nominal due to childcare or other personal commitments
- Temporarily put phone into “do-not-disturb” at the end of the day
- Consider taking personal breaks during the day

Best Practices for Giving a Technical Presentation at an AIAA Forum

Designing your Presentation

1. Design your presentation to encourage the audience to read your paper. You do not need to touch on every detail included in the paper.
 2. Identify three key points you want the audience to take away. Make sure those points are clear and repeated throughout your presentation.
 3. Keep your audience in mind. Provide enough context and background. Tell them why you studied this problem
 4. Lay out your presentation to tell a logical story that walks the audience through the problem (the why), approach (the how), results, and conclusions.
 5. The audience will pay the most attention at the beginning and the end. Summarize main points at both the beginning and end.
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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.

Senators Introduce Legislation Establishing a National Aviation Center

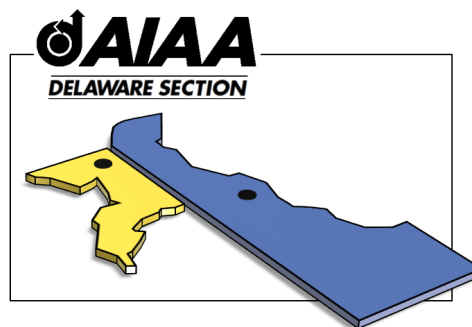
Senators Tammy Duckworth (D-IL) and James Inhofe (R-OK) recently introduced legislation ([S. 3360](#)) to help ensure the domestic aviation and aerospace industries remain competitive and are prepared to address the workforce challenges facing the entire industry. The National Center for the Advancement of Aviation would focus on four key initiatives: aviation workforce development, including the facilitation of STEM-based aviation curriculum for high school students; a repository for aviation research; safety and economic data analysis; and the fostering of needed collaboration among the entire aviation industry. S. 3360 awaits consideration before the Senate Committee on Finance. A companion bill has not yet been introduced in the House.

Aviation Oversight Bill Introduced in Senate

On 25 February, Senators Richard Blumenthal (D-CT), Ed Markey (D-MA), and Tom Udall (D-NM) introduced legislation that would prevent the aviation industry from continuing to regulate many of its own certification processes. More specifically, the Restoring Aviation Accountability Act ([S. 3337](#)) would establish a commission to review the current FAA safety delegation program to determine if an alternative certification would provide more oversight, senators say in emailed statement. It would also increase whistleblower incentives and protections in the industry. S. 3337 awaits consideration before the Senate Committee on Commerce, Science, and Transportation. A companion bill has not yet been introduced in the House.

President Issues Executive Order Guarding Critical Infrastructure Relying on GPS

President Trump signed an [executive order](#) on 12 February that directs federal agencies to take steps to reduce the disruption of critical infrastructure that relies on positioning, navigation, and timing (PNT) services. More specifically, the order directs the Department of Commerce to develop "PNT profiles" enabling both the public and the private sector to identify risks to networks posed by PNT services and identify appropriate PNT services. The order also requires the Department of Homeland Security to develop a plan to test the vulnerabilities of critical infrastructure systems and networks to disruption or manipulation by PNT services. Additionally, the Office of Science and Technology Policy will coordinate a national plan that provides for research and development into secure PNT services that will not be dependent on global navigation satellite systems.



2019-2020 Council Members

Chair Daniel Nice, Northrop Grumman; (410) 392-1311 Daniel.Nice@ngc.com
Vice-Chair Breanne Sutton, Northrop Grumman; (410) 392-1661 Breanne.Sutton@ngc.com
Treasurer Noah Gold, Northrop Grumman; (410) 392-1771 Noah.Gold@ngc.com
Secretary Elishabet Lato, Northrop Grumman; Elishabet.Lato@ngc.com
College Liaison Kyle Panariello, Northrop Grumman; (410) 392-1451 Kyle.Panariello@ngc.com
Honors & Awards Tim Dominick, Northrop Grumman; Timothy.Dominick@ngc.com
Career Enhancement Tim McCardell, Northrop Grumman; (410) 392-1560 Timothy.McCardell@ngc.com
Young Professional Taylor Coleman, Northrop Grumman; (410) 392-1100 Taylor.Coleman@ngc.com
STEM/K-12 Outreach Elishabet Lato, Northrop Grumman; Elishabet.Lato@ngc.com Kelly Storrs, Northrop Grumman; (410) 392-1453 Kelly.Storrs@ngc.com
Public Policy Di Ena Davis, Northrop Grumman; (410) 392-1194 DiEna.Davis@ngc.com
Communications Chrissy Larson, Northrop Grumman; (410) 392-1138 Christina.M.Larson@ngc.com
Membership Zach Gent, Northrop Grumman; (410) 392-1869 Zachary.Gent@ngc.com
Technical Dave McGrath, Northrop Grumman; (410) 392-1716 david.k.mcgrath@ngc.com
RAC Representatives Dan Nice/Breanne Sutton

The AIAA 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 Website

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 Zach Gent, to obtain an application. Also, if you wish to be upgraded to Senior Member, Associate Fellow or Fellow, contact Dan Nice 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 Preswould Place, McLean, VA 22102.

Have You Checked out the AIAA Journal?

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

Category of Membership	2016–2017
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 year	\$30
3 rd year	\$60
4 th year - full member rate	\$90

AIAA DE Section Member Numbers

Professional Members	56
• Members	43
• Associate Fellows	11
• Fellows	2
Educator Associates	43
Student Members	9

Total Members: 108

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.

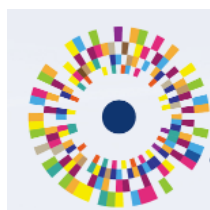
[Membership Upgrades](#) - To request membership upgrade information or nomination forms, contact Chrissy Larson or go to AIAA customer service at 800/639-AIAA (or 703/264-7500), or visit the AIAA Web site at: <http://www.aiaa.org>. See the following link for more information: <http://www.aiaa.org/content.cfm?pageid=183>

[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

AIAA Delaware Section Social Media

The AIAA Delaware Section web site is active. Please visit <https://engage.aiaa.org/delaware/home> 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:



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[@AIAA_DE on Twitter](#)



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