

New Student Section at Youngstown State University

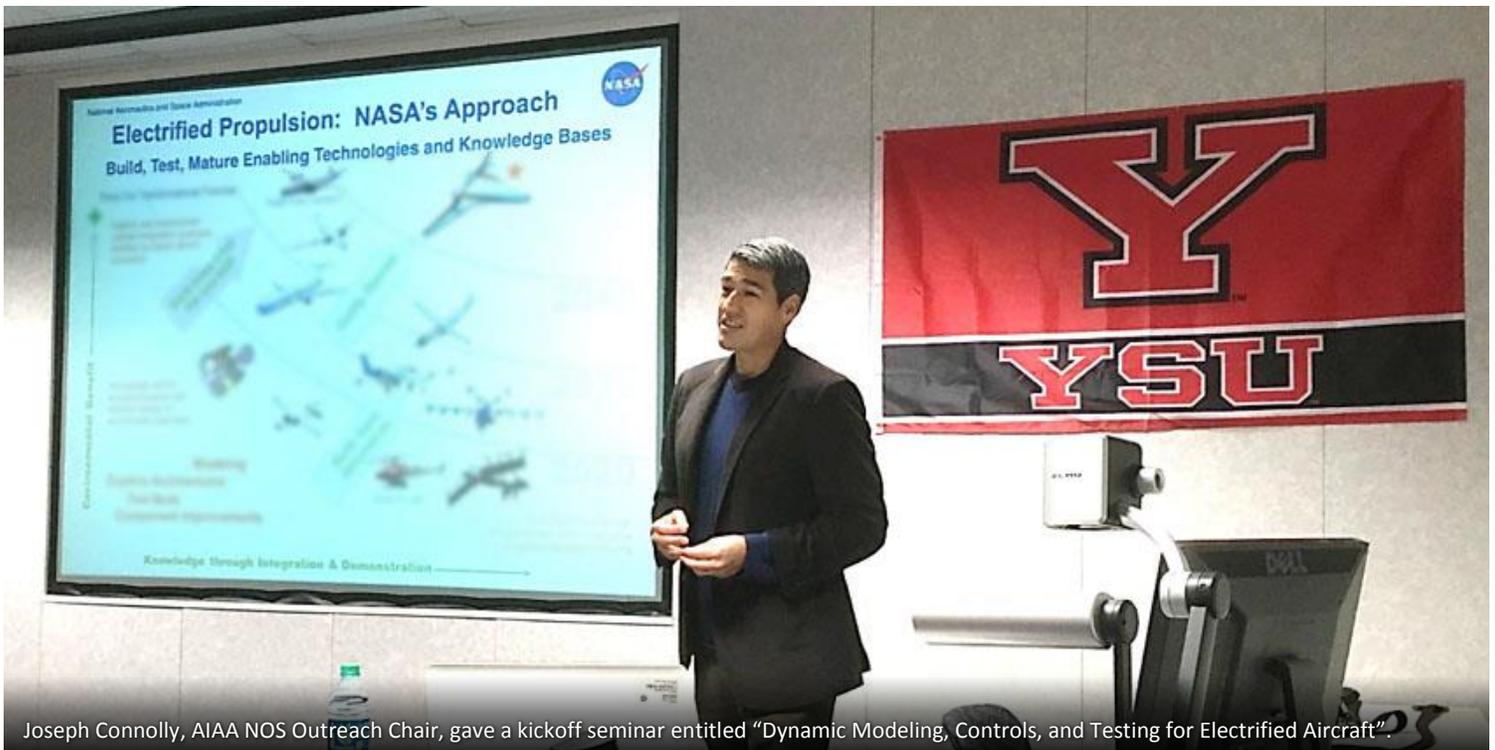
In September, students at Youngstown State University (YSU) voted to elect an inaugural executive committee to lead their effort to establish a new AIAA student branch on campus, with official recognition by the University achieved shortly afterwards. With the advisement of Dr. Kevin Disotell, assistant professor of mechanical engineering and a member of AIAA, the YSU chapter has begun the work of building their organization with enthusiasm. Dr. Disotell joined YSU in August 2017, after serving as a postdoctoral fellow at the NASA Langley Research Center, and soon introduced students to the benefits of participating in AIAA for career development and information exchange.

The chapter is open to any undergraduate or graduate student on campus with career interests in the aerospace field. In building its membership, the group has attracted the interest of nearly 40 students, with 23 having joined as national student members of AIAA. The majority of the student membership is associated with ABET-accredited programs in mechanical and electrical engineering, but there are also students majoring in physics and astronomy. "With

existing institutional strengths in additive manufacturing and materials science and engineering at YSU being of direct consequence to the aerospace industry, we are opening a new gateway to students for career exploration through participation in AIAA on campus," said Dr. Disotell.

On November 13, the YSU section hosted Mr. Joseph Connolly of the NASA Glenn Research Center's Intelligent Control and Autonomy Branch to present a kickoff seminar. As University Chair for the AIAA Northern Ohio Section, Mr. Connolly's visit was meaningful to the YSU start-up effort. Mr. Connolly's talk, titled "Dynamic Modeling, Controls, and Testing for Electrified Aircraft," was attended by over 25 students and faculty. Following the event, many students brought forward a range of questions sparked by the presentation, including the NASA Electric Aircraft Testbed (NEAT) and single-aisle turboelectric aircraft concept. Mr. Connolly also imparted words of experience regarding the important ability to work effectively with other disciplines outside of the specific backgrounds that students are studying.

Subsequently, the YSU section start-up effort applied for and received an official AIAA student branch charter from the Student Activities Committee and Board of Directors.



Joseph Connolly, AIAA NOS Outreach Chair, gave a kickoff seminar entitled "Dynamic Modeling, Controls, and Testing for Electrified Aircraft".

Distinguished Lecture: Dr. Peggy Chabrian

On November 14th, The President and founder of Women in Aviation, International (WAI), Dr. Peggy Chabrian, gave a lecture entitled “Aeronautical Decision Making” at the Ohio Aerospace Institute (OAI). Members from WAI-Cleveland Chapter, AIAA NOS, OAI, and NASA Glenn Research Center were in attendance and gathered beforehand for a social hour to enjoy light snacks and beverages with Dr. Chabrian. WAI-CLE President Leah Hetzel opened the lecture with a brief history of WAI including the mission of the organization as well as its current initiatives and highlights. Hetzel then introduced Dr. Chabrian and talked about her background in the aviation industry. Dr. Chabrian then came to the podium to begin her lecture. She discussed the Poor Judgement Chain and how it is related to aviation accidents. The lecture then dove into how to take the right steps when making aeronautical decisions. Dr. Chabrian concluded the talk with five hazardous attitudes common within the industry and offered up some suggestions on how to overcome them.



Dr. Peggy Chabrian captivated attendees in the OAI auditorium.



From left to right: Women in Aviation Cleveland Chapter Officers - Secretary Jessica Dufner, Editor Carlos Gomez, Dr. Peggy Chabrian (Women in Aviation, International founder and president), President Leah Hetzel, Vice President April Allen and Outreach Chair Lori Manthey.

An Evening with the Stars

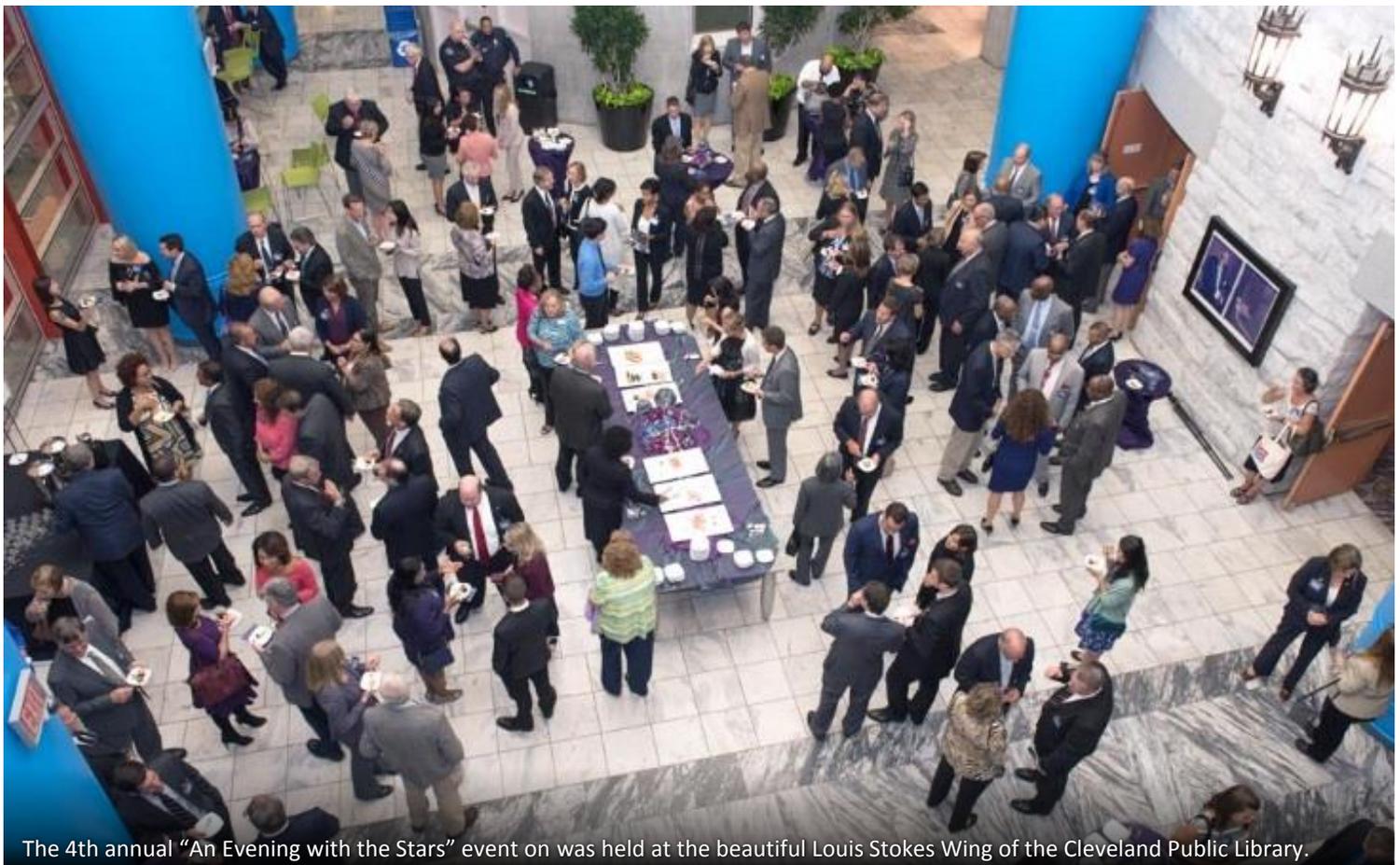
NASA Glenn Research Center (GRC) hosted the 4th annual “An Evening with the Stars” event on Sept. 12th at the Louis Stokes Wing of the Cleveland Public Library. Over 300 guests were in attendance and more than 25 companies, universities and organizations participated as sponsors. Kevin Eliason attended the event on behalf of the AIAA Northern Ohio Section. The night began with Center Director Dr. Janet Kavandi opening the event with a discussion of NASA Glenn’s legacy of outstanding research and innovation in the Aerospace industry. Following the opening remarks, the main talks of the evening commenced, each one presented by one of Glenn’s “rising stars.” The first presentation came from Mary Lobo, the chief of Glenn’s Test Facility Management Branch. Lobo gave an overview of the testing capabilities of the facilities at Glenn that allow scientists and engineers to replicate the harsh environments of flight and space. Then, Glenn’s contracting officer’s representative for NASA’s Space Launch System Universal Stage Adapter, Dr. Aaron Weaver, discussed Glenn’s efforts for testing the Orion spacecraft and Space Launch System rocket and how that will help improve its capabilities. Dr. Janette Briones, a computer engineer and technical lead for NASA Glenn’s Cognitive Communications



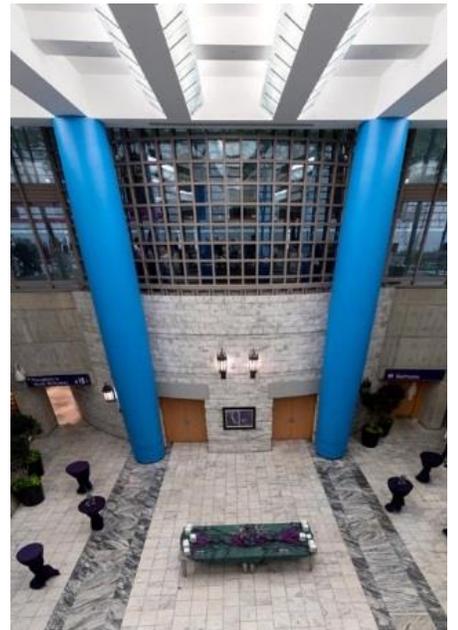
Dr. Janet Kavandi, NASA GRC Director, providing opening remarks.

Project for artificial intelligence and machine learning algorithm development, concluded the presentations with a talk on the next generation of communication systems that will improve the ability for NASA centers and other government agencies to collaborate on land or in space.

(Photos courtesy of NASA)



The 4th annual “An Evening with the Stars” event on was held at the beautiful Louis Stokes Wing of the Cleveland Public Library.



Young Astronaut Day Celebrates Its 25th Annual Event with the Most Student Participants in Its History

The Young Astronaut Day (YAD) outreach event celebrated its 25th occurrence at the NASA Glenn Research Center on October 28, 2017. The event was held in the MIC building where 400 students (grades 1st through 12th) competed in a variety of hands-on engineering challenges. To reach more students, YAD was expanded to include two full sessions in one day with 30 teams per session. YAD is a grass roots effort comprising nearly 100 volunteers across NASA GRC, AIAA, and local universities. This year's activities, which were all developed by volunteers, were: Planetary, Parachute Drop Challenge, Spudnaut, Lego Robotic Arm, SCA Communications Challenge, and Space Materials Challenge. In partnership with Herschman Architects, the students also participated in a community service activity called CANstruction® where they used \$2000 of canned food to construct a model of the Space Shuttle and its launch tower. Dr. Marla Perez-Davis, NASA GRC Deputy Director, extended a warm welcome to the students, chaperones, and Astronaut Sunita Williams. Astronaut Williams gave spectacular keynote addresses to both sessions relating the student's activities to her real experiences in space. Due to the popularity of the event, the teams were selected by lottery. Even with the



Amazing CANstruction® model of the Space Shuttle and launch tower.

expanded event size, registration still exceeded capacity by about 10 teams (70 students). This year's event was co-sponsored by the NASA Exploration Systems Project Office, the Northern Ohio Section of American Institute of Aeronautics and Astronautics (AIAA), and the TFOME Contractor Team of HX5-Sierra, Jacobs, and MSM Group.

(Photos courtesy of NASA)



Astronaut Sunita Williams gave spectacular keynote addresses to both sessions relating the student's activities to her real experiences.



Lunch Hour Lecture on Hyperloop Technology Draws Large Audience

A technical talk about a futuristic intercity transportation system was presented by Mr. Jeff Chin, a young Propulsion Systems Engineer at NASA GRC, on January 24th. The presentation drew a large audience, practically filling the Ohio Aerospace Institute (OAI) President's Room.

The title of the presentation was "Hyperloop – a Ground Based Air Transportation System," wherein Mr. Chin described a novel concept of an intercity mass transportation system, consisting of individual "passenger pods" being propelled and suspended electromagnetically (Maglifter/Maglev) through tubes evacuated to very low pressure of less than 0.03 psia. Compared to aircraft cruising at 35,000 ft altitude, the air pressure is over 100 times higher at ~3.5 psia.

Due to the highly reduced aerodynamic drag at the low ambient pressure and the Maglev suspension, the propulsive power required would be greatly reduced at cruise speeds between Mach 0.8 and the speed approaching sonic at near 700 mph. The required power could be supplied by battery stations spaced along the way or by electric power generating plants. Mr. Chin explained further that the "Hyperloop" system would be initially ideal for distances of 500 nautical miles, as for example a Los Angeles to San Francisco, or a Cheyenne, Wyoming to Pueblo, Colorado line. The Hyperloop



tube-ways could be routed over land, suspended by pylons, which are spaced between 40 and 100 meters, depending on tube mass. They may also be routed underwater in coastal areas, or underground in areas where existing roads and rail lines would dictate that routing option.

The California DOT (Department of Transportation) estimates that over 18 million passengers per year would use the Los Angeles to San Francisco line at a ticket cost below \$40, which would be the target "break even" cost with only 10 million passengers. In the long term, a more ambitious cross continental Hyperloop route between Los Angeles and New York may be envisioned by the decade 2050/2060, when over 42% of all travel is projected to be in the high speed realm, offered either by Hyperloop or aircraft. It is understood that a tremendous amount of tunneling would be needed for a transcontinental Hyperloop route.

The AIAA NOS Council thanks our speaker, Mr. Jeff Chin, for preparing and giving this interesting and informative presentation. We also thank all attendees for coming to this event and participating in the Q&A period following the presentation. Finally, we thank OAI for making the President's Room lecture hall and projection facilities available for this event.



Panel Discussion on Attracting Young Professionals to Professional Societies

Cleveland Technical Societies Council (CTSC) and Akron Council of Engineering & Scientific Societies (ACCESS) held a panel discussion on how to better attract young professionals to their professional societies. The four panelists were Luke Anderson - Strategic Planning Analyst for FirstEnergy Corp, Sam Diaquila - Vice President Business Development for Formglas Products, Ian Schwarber - Chief Strategy Officer for DriveIT, and Roger Tokars - Young Professional Lead for AIAA NOS. The event was at the Educational Service Center of Cuyahoga County at 6393 Oak Tree Boulevard, Independence, OH 44131 at 5:30 pm. The audience was made up of a variety of leaders in their societies. About 30 people were in attendance.



Connolly Lecture at CSU Student Section Meeting

On October 19th, NASA Aerospace Engineer and AIAA NOS University Chair, Joseph Connolly, engaged Cleveland State AIAA students in a technical, yet captivating, presentation on the real-life efforts, by NASA GRC, to reduce the emissions of commercial aircraft. Joe discussed the state-of-the-art electric aircraft technology for commercial aircraft application, and even remarked on the necessity of disciplined system integration. Joe encouraged the students to continue their efforts in school by describing the capability of modeling intelligent control systems in programs such as MATLAB and Simulink, which the students frequently use in their own studies.

With a full room of engaged and inquisitive AIAA members that share Joe's passion for aerospace, there was hardly enough time for all the questions at the end. Afterwards, some students stayed to inquire about how they can get involved in similar work themselves, and all the students left with a renewed excitement about NASA's work in the commercial aircraft industry. Since the presentation, Joe has continued engaging Cleveland State's AIAA students by encouraging the chapter's participation in several aerospace related design competitions, as well as by making efforts to expand the students' professional network to other University AIAA chapter.

Young Professionals Meetup to Celebrate Pi Day

Young Professionals from AIAA NOS met at "The Campus Grille" Restaurant on March 14th in celebration of Pi Day. Eight members attended the event at the restaurant, located near the Baldwin Wallace University campus, to mingle and enjoy Spanish empanadillas, compliments of AIAA NOS.



Donations Needed for CANstruction Charity Event

The Northern Ohio Section of the American Institute of Aeronautics and Astronautics has assembled a team of professional engineers and a future engineer high school student to participate in this year's CANstruction™ competition. This competition is a way to help make a difference for hungry families across Northeast Ohio. We are looking for sponsors to help our team.

What is CANstruction™? It is a competition between teams of architects, engineers, and other professionals to produce the most creative sculptures out of cans of food. Awards are given in various categories ("Best use of labels", "Best meal", etc.). After the competition, all the canned food is donated to the Cleveland and Akron food banks. This year's competition theme is "CAN Your Imagination Run Wild?"

CANstruction™ Cleveland 2018 will take on place April 12, 2018 at South Park Mall in Strongsville, Ohio. The sculptures will be on display through April 22nd. Our team is eager to build, but we need your support to purchase the cans and other materials. Any donation would be helpful and greatly appreciated. If your company is willing to donate, would you be able to support us with a donation of \$250? As a donor, your name will be displayed alongside our structure at South Park Mall. This is not only a great way to get your business' name in front of mall patrons, but also a way to make an impact on our community by helping feed the Cleveland/Akron area.

Corporate or individual donations of any amount can be easily made using PayPal. To learn more about the event and to make an online donation via PayPal, please visit:

<https://aianos.org/canstruction>

If you'd prefer, checks can be made out to "Northern Ohio AIAA." If you have any questions, please contact John Wolter at jwolter0@gmail.com.

Thank you for your consideration.

The AIAA-NOS CANstruction™ Team: John Wolter, Vic Canacci, Rula Coroneos, Stefanie Hirt, Ashlie Flegel, Linda Yoon, Lexi Lee, Julie Kleinhenz, Kevin Bowman.

Be a Part of AIAA Engage!

AIAA Engage is the American Institute of Aeronautics and Astronautics' new comprehensive online community platform. It allows you to connect to almost 30,000 of your AIAA colleagues by providing a "virtual" collaborative space for information sharing, idea exchange and discussion. AIAA Engage is a moderated, limited-access online community platform focused specifically on the global aerospace community, and provides exciting new functionalities.

- Share individual member profiles with information about you and your work.
- Browse dynamic discussion groups enabling you to communicate with like-minded people and to grow your network of peers.
- Enable connection between job seekers, mentors, and mentees.
- Stay abreast of breaking news items with links to photos, videos, and files.
- Host online Q/A sessions with forum speakers, notable authors, and other experts in the field.
- Host continuing education seminars and have follow-up discussions based on what members are learning.
- Host discussions of the latest research coming out of the forums.
- Allow collaboration on design competitions and sharing of those experiences.

If you have not already done so, join in the conversation and connect with your peers!

<https://engage.aiaa.org/home>



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