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Chair Chat

St. Louis Section Chair – Dr. Sanjay Jayaram



The section is off to a wonderful start in year 2022. The section had multiple dinner meetings and technical presentations. One of the highlights was the technical presentation from Dr. John Mather, the Senior Project Scientist on the James Webb Space Telescope (JWST) and the 2006 Nobel Prize in Physics on April 5th, 2022. Dr. Mather discussed the JWST and its current status. The section is also looking forward to the upcoming elections. A committee has been created and several nominees have shown interest in getting involved with the section.

As always, the section continues to have many opportunities to contribute as a volunteer or becoming part of the council. If you are interested, please reach out to the section chair or communications committee chair.

Thank you.

Sanjay Jayaram, Ph.D.

2022 AIAA National Awards & National Elections

Jackie Blumer Wins AIAA Trailblazing STEM Educator Award!

The St. Louis Section's own Jackie Blumer has been named one of the inaugural recipients of the AIAA Trailblazing STEM Educator Award. Jackie, who has served as the section's enthusiastic STEM Chair for the last three years, is one of five educators so honored. Each teacher, and their respective schools, will be awarded \$5,000. In addition, each teacher will receive free access to Challenger Center STEM programming. One of the five educators will be named the grand prize winner and be invited to join Club for the Future, Blue Origin's nonprofit, at a future New Shepard launch. The five winners will be recognized, and the grand prize winner will be announced, at the 2022 AIAA Awards Gala. The Gala is scheduled for April 27 at the Ronald Reagan Building and International Trade Center, Washington, DC.



Way to go, Jackie, and we're rooting for you for that grand prize!

<https://www.aiaa.org/news/news/2022/03/15/challenger-center-and-aiaa-announce-inaugural-winners-of-trailblazing-stem-educator-award>.

Jim Guglielmo Elected Director of Region V!



Former Section Chair Jim Guglielmo has been elected Director of AIAA Region V. Jim, who has served on the section council for the past four years, will assume leadership of Region V on April 28. Within AIAA, the 56 sections throughout the United States and overseas are organized into seven AIAA Regions. Region V is comprised of five sections which cover the north-central US and central Canada: Iowa, Rocky Mountain, Twin Cities, Wichita and our own St. Louis section. In addition to Chair, Jim has served as Vice-Chair, Region V Representative, Advisor, and editor of this newsletter. Good luck, Jim!

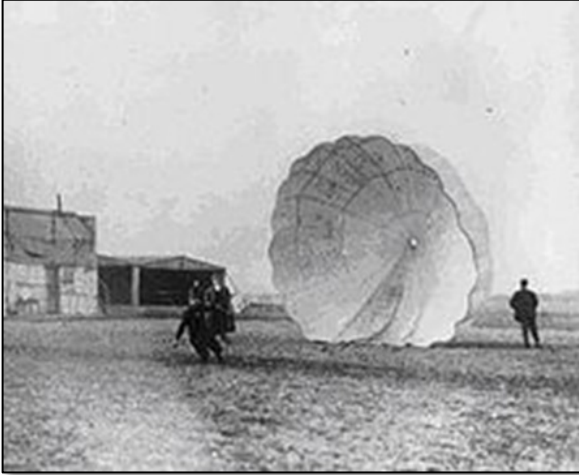


<https://www.aiaa.org/news/news/2022/03/07/aiaa-announces-2022-election-results>

History in Aviation: March & April

Historian - Colin Thiele

1 March 1912 – US Army Capt. Albert Berry successfully completes the first parachute jump in the United States from 1,500 ft. over Jefferson Barracks in St. Louis.



2 March 1969 – Concorde prototype 001 takes its first flight, with pilot André Turcat at the helm.



March 1956 – Minoru Yamakasi's Arched Terminal 1 is dedicated and opened. The original opened with 3 arches, with today's current 4th dome in 1965. Both JFK and Paris DeGaulle airports have shared similar designs.

6 April 1967 – Trans World Airlines (TWA), STL's Favorite Airline, is the first US airline to operate an all jet fleet, retiring its last Lockheed Constellation.



10 April 1926 – Charles Lindbergh is assigned the Chief Pilot role of the St. Louis – Chicago air mail route for Robertson Aircraft Corporation.



Congressional Visits Week – March 14-18, 2022

Frank Youkhana – Public Policy Chair



[https://en.wikipedia.org/wiki/United_States_Capitol#/media/File:US Capitol west side.JPG](https://en.wikipedia.org/wiki/United_States_Capitol#/media/File:US_Capitol_west_side.JPG)

Every March, AIAA representatives from all over the United States travel to Washington, D.C. to participate in Congressional Visits Day (CVD). Having set-up appointments months in advance with their senators and local representatives, AIAA members go from office to office conveying both AIAA public policy recommendations as well as stressing the utility of AIAA as a resource for technical expertise.

As was the case in 2021, CVD 2022 was conducted virtually and expanded to a week to allow for more scheduling flexibility and access to the Congressional offices. Colin Campbell (Region V Public Policy Deputy Director), Brendan Marks, Joseph Ayd, and I held very productive meetings with members of Senator Josh Hawley's and Representative Ann Wagner's offices. After giving some background on AIAA's mission and composition, we discussed in detail the four "Policy Pillars" that AIAA desired its membership to impress upon Congress.

- 1) Providing guidance and direction to the nascent space industry to incentivize and sustain economic growth and promote U.S. leadership and national security
- 2) Supporting development of a diverse aerospace workforce for all skill types and stages of career to advance learning commensurate with technology and product advancement
- 3) Supporting robust, long-term funding for federal research and technology initiatives in aeronautics and space, including necessary infrastructure, to ensure U.S. leadership in critical areas such as artificial intelligence, advanced air mobility, cybersecurity, hypersonics, and robotics.
- 4) Creating initiatives and provide funding for the recovery and advancement of the Aerospace & Defense industry – including workforce, infrastructure, and technology advancements.

We also provided a number of resources to the Senator's office in the event they needed further information regarding AIAA's policy positions, answers to technical questions, or even expert testimony.

Plans for CVD 2023 are to hopefully meet in person with more members of Missouri's Congressional representatives and continue to spread the word about the value and technical expertise that AIAA can offer our nations policymakers.

Young Professionals

Young Professionals Chair - Steve Clark

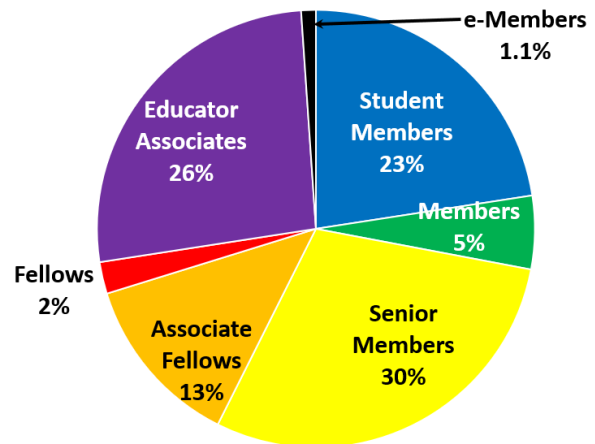
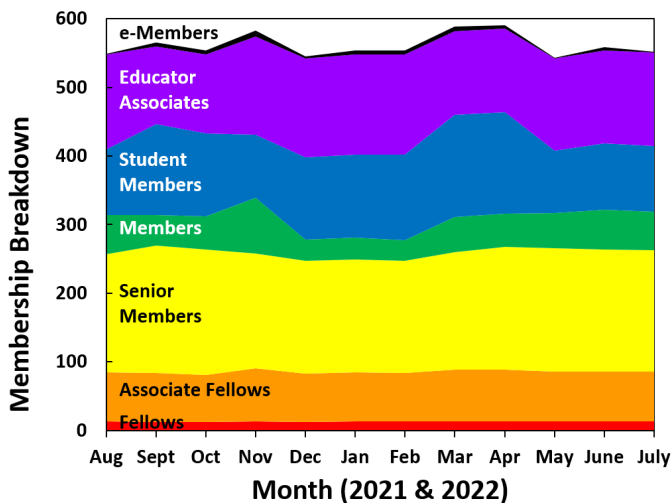
The Young Professionals Committee is hosting a **2022 Spring Social** on Wednesday April 20, 2022, at the Trainwreck Saloon Westport. Come network with other young aerospace professionals in the St Louis region. This is a great opportunity to meet other professionals outside your day-to-day work groups and learn how you can get involved with AIAA! Students and non-AIAA members are welcome. Please see the flyer at the end of this newsletter for more information.

Membership Report

Alex Friedman – Membership Chair

The Section membership is at 588 members. The Young Professional item is a new category for December. The distribution breaks down as shown in the table and charts below.

Type	Jan	Feb	Change
Professional	320	317	-3
e-Members	6	6	+0
Members	32	30	-2
Senior Members	164	163	-1
Associate Fellows	72	71	-1
Young Professionals	33	34	+1
Fellows	13	13	+0
Student Members	121	125	+4
Educator Associate	146	146	+0
Total	587	588	+1



If you want to help someone get connected with AIAA events in St Louis, please pass along a couple of social media groups related to our St. Louis Section. We advertise our events on Facebook through the group “[I Fly St Louis](#)” and through the Boeing inSite group “[AIAA – St Louis Section](#)”. Both of these groups are free to join and do not require AIAA membership. Please feel free to forward any membership questions to [Alex Friedman](#).

Making a Change?

Are you graduating and moving? Planning to retire soon? Making a career move? If you are leaving the St. Louis Section area, please update your AIAA profile, so you will continue to receive accurate AIAA correspondence. Go to "My AIAA" (<http://www.aiaa.org/myAIAA>) log in, go to "My Account" and select "Edit Contact Info."

STEM Corner

STEM Chair- Jackie Blumer

St. Louis Science Center – SciFest: Celebrating Engineering Week

Around 3,000 people attended the St. Louis Science Center SciFest this past month. Students and parents alike worked with AIAA to create Martian Landers. Using a variety of materials they designed, built, and tested their landers. It was fun to watch the students try to problem solve and their parent's inability to sit back and watch. They wanted in on the action too. Thanks to all who volunteered and helped make it a great day.

The next SciFest: Welcome to The Great Outdoors will be held on Saturday, May 21, 2022 at the St. Louis Science Center.

See the following website for more information:

<https://www.slsc.org/event-overviews/scifest/>

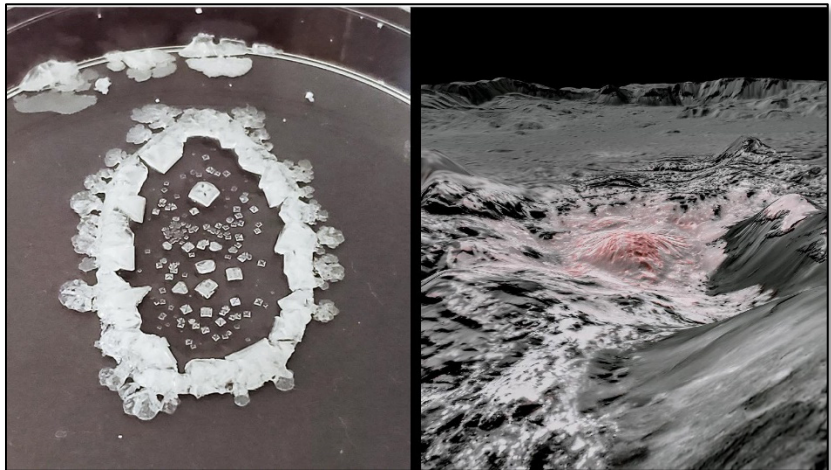


STEM Corner Activity: Do a Mineral Mystery Experiment

Overview: In this project, you'll do an experiment to explore the science behind a mystery that puzzled scientists for years. Read on to play the part of a NASA scientist and learn about what's creating bright areas on the dwarf planet Ceres and the process that led to a discovery on Mars.

Background:

- Ceres is the largest object in the asteroid belt between Mars and Jupiter. Even though it's in the asteroid belt, Ceres is so much bigger and so different from the asteroid neighbors that scientists classified it as a dwarf planet in 2006.
- For many years, when scientists looked at Ceres through a telescope, they noticed bright regions on the dwarf planet. But how those bright regions got there remained a mystery. In 2015, NASA's Dawn



spacecraft began orbiting Ceres and observing its surface in more detail. The Dawn spacecraft's close-up view allowed scientists to gain a better understanding of how hundreds of bright regions came to exist.

- In this project, you'll do your own experiment to find out what's behind the bright areas on the dwarf planet Ceres.

NASA Link: <https://www.jpl.nasa.gov/edu/learn/project/do-a-mineral-mystery-experiment/>


Technical Program / Dinner Meetings

Programs Chair – Bob Dowgwillo

February Dinner Meeting Report: And now for something completely different...

Understanding the Ancient Cahokians Through Modern Aerial Remote Sensing

Our February dinner meeting was our annual co-sponsored event with Saint Louis University, which has an active AIAA student branch. Thanks to a suggestion by Section Council Advisor Dr. Sri Gururajan, our program combined two disciplines seldom seen together: archaeology and aerospace. In particular, our theme was the application of remote sensing, using drones and satellites, to the understanding of the native American culture that built the Cahokia Mounds, especially in southern Illinois. Our speaker was Justin Vilbig of the Saint Louis University Geospatial Institute. Justin works as a geospatial data scientist and is a doctoral student in Geoinformatics. In Geoinformatics, he and his team work with complex imagery and geospatial data to extract insights in agriculture, public health, education and demography. Justin presented his work and that of his team to better understand the structure of the amazing “First American City” in Cahokia. This unique topic attracted attendees who would not otherwise have thought to attend an AIAA Section meeting.





Wednesday, February 23, 2022
Syberg's Dorsett
 2430 Old Dorsett Rd.
 Maryland Heights, MO 63043

**Understanding the Ancient Cahokians Through
Modern Aerial Remote Sensing**
Cosponsored by Saint Louis University

Guest Speaker: Justin Vilbig, St. Louis University Geospatial Institute

Saint Louis University has been at the center of the nation's geospatial enterprise since the Corps of Discovery returned to St. Louis with maps of the Louisiana territory in 1806. Although remote sensing has been used in archaeology for over a century, current technological developments have revolutionized how and what can be studied. Using ongoing research at nearby Cahokia Mounds, this presentation explores what aerial remote sensing is, how it is used in archaeology, and why it is so important to understand the past.


Justin Vilbig works as the geospatial data scientist at Saint Louis University's Geospatial Institute and is a Ph.D. student in Geoinformatics. He and his team work with complex imagery and geospatial data to extract meaningful insight in diverse fields like precision agriculture, public health, education, and demography.


Schedule	Menu	Cost
5:00 – 5:45 pm – Sign-in / Social	Steak Boat Top Round of Beef	\$18 Members and Guests
5:45 – 6:30 pm – Buffet Dinner	Grilled Apricot Glazed Chicken	\$22 Non-Members
6:30 – 8:00 pm – Presentation / Q&A	Long Grain Wild Rice	\$15 Educator Associates
8:00 – 8:30 pm – Networking	Fresh Steamed Vegetable Medley	\$10 Students
	Syberg's House Salad	
	Bakery Rolls	
	Ice Tea, Water and Coffee	
	Cash Bar	

Attendance Prize!

Reservation Deadline:
 12 Noon, Tuesday, February 22nd
 RSVP via JotForm: [Link](#) or QR Code
 Questions? Contact Bob Dowgwillo
 (robert.m.dowgwillo@boeing.com)

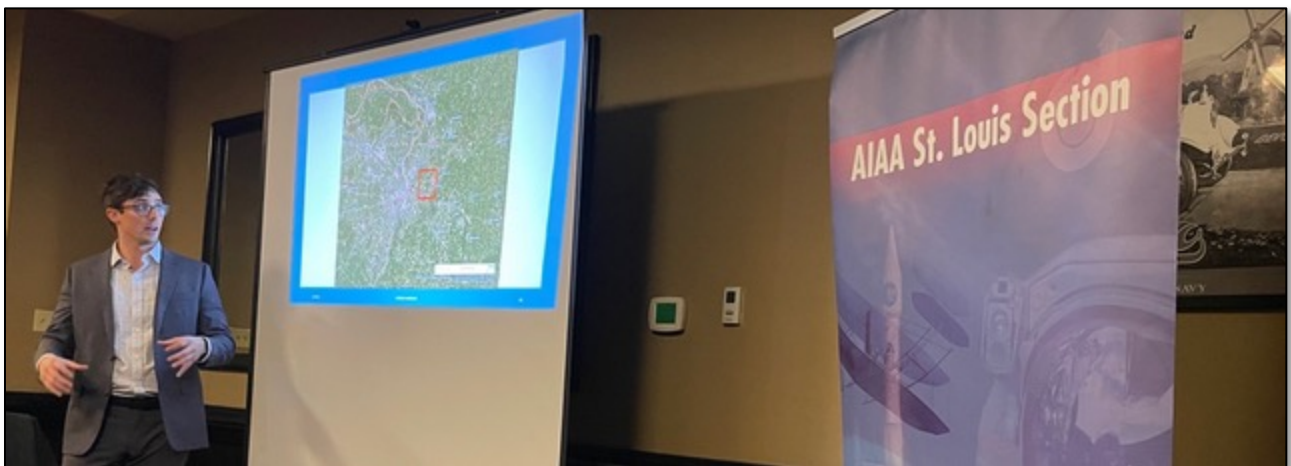


COVID Accommodations
 Masks are encouraged





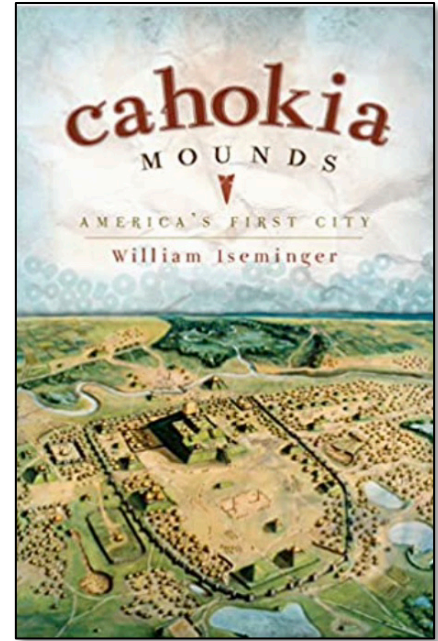
Our program in progress at the banquet room at Syberg's Dorsett. Syberg's has proven to be a convenient and popular venue for our dinner meetings



Justin Vilbig discussing the target area of his research



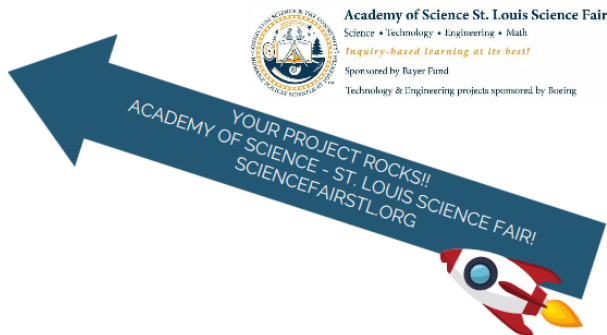
Programs Committee chair Bob Dowgwillo presents our Section challenge coin to Justin Vilbig



New attendee Ms. Devin Schrieber won the attendance prize: A book about Cahokia Mounds written by local expert William Iseminger

Service Projects – 2022 St Louis County Science Fair

Service Projects Chair – Brad Sexton



The 2022 St Louis County Science Fair, sponsored by the Academy of Science St Louis, will be virtual again this year. The St Louis AIAA section reviews those projects that are Aerospace related and provides a special award to qualifying entries. We are looking for volunteers to help with online judging, please contact Brad Sexton (bradley.w.sexton@boeing.com) if you are interested. We will provide more details, along with an eFair "how to" video about a week before judging starts. Projects will be uploaded by April 21st, and judging will take place electronically April 22nd thru April 27th.

AIAA St. Louis Section Twitter Account

The AIAA St. Louis Section now has a Twitter account! Please follow us at @StLAIAA

Technical Specialist Meetings

Technical Specialist Chair – John Schaefer

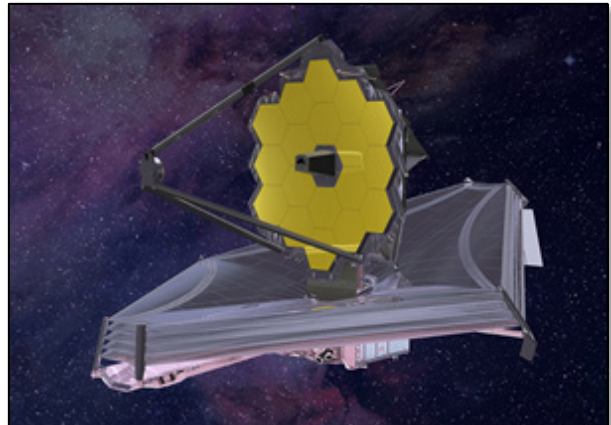
The St. Louis section has enjoyed a diverse set of topics for our spring Technical Specialist series of events. On February 22, we were joined by Dr. Jean Potvin, a physics professor at St. Louis University. Dr. Potvin discussed the migratory and feeding habits of baleen whales, and he provided a hydrodynamic analysis of their feeding lunges based on force and energy balance equations. Next, on March 15, the section was joined by Dr. Travis Fields, a professor at University of Missouri-Kansas City. Dr. Fields presented an overview of how unmanned aircraft systems (UAS) have been used for both positive and nefarious applications, and he discussed concepts for UAS countermeasures which may become important as drone technology evolves. Our next presentation will be given on April 5 by Dr. John Mather, a Nobel Physics Laureate and Senior Project Scientist of the James Webb Space Telescope (JWST). Dr. Mather will be joining the section virtually to describe the decades-long process of designing and launching JWST, as well as what NASA hopes to study when the telescope begins making scientific observations later this year.



Dr. Jean Potvin's Presentation on Baleen Whales



Dr. Travis Fields' Presentation on an Overview of Applications of Unmanned Aircraft Systems (UAS)



Dr. John Mather's presentation on the James Webb Space Telescope (JWST)

Education & College Outreach

Section Education & College Outreach Chair – Charlie Svoboda

Local University Research Program Emphasis Relating to Aerospace

The content in this article is from a set of presentations that the Missouri University Science & Technology, University of Missouri, St. Louis University, and Washington University schools made to the AIAA section on February 8, 2022. Due to space considerations in the newsletter, the actual slides listing the research topics are in a file on the St. Louis Section Engage website [here](#). That document on the website also has the points of contact for each of these research areas.

Missouri University of Science & Technology

- Center for Aerospace Manufacturing Technology
- Missouri Manufacture Protoplex
- Fluid/Gas/Plasma, Space Propulsion and Exploration
- Small Sats & Astrodynamics
- Computational Hypersonics
- Composites Materials and Structures

University of Missouri

- Electrowetting
- Spacecraft Thermal Control
- OHP
- Collaborative Autonomy and Safety for Teamed Human & Unmanned Aircraft Systems in Fast Evolving Wildfire Environment
- Guidance & Control of Aerospace Vehicles and Low Energy Trajectory Optimization of Spacecraft
- Finite Elasticity of Deployable Structures
- Programming Material Properties & Smart MetaMaterials
- Area Selective Atomic Layer Deposition, In-Situ SEM Growth of CNTs, & Nanoenergetic Material

St Louis University

- Small Aircraft, Design, Mission Assurance, Autonomy & Model-Based Systems Engineering
- Bio-Inspired Aerodynamics, Aerospace Control Systems, Model Based Systems Engineering & Rocket Design
- Computational Fluid Dynamics, Planetary Atmospheric Modeling, Simulation of Outer Solar System Entry and Flight Aerodynamics, UAV Aerodynamics & Flow Control
- Unmanned Aerial Systems (UAS), Drones, Flight Testing, Neural Networks, Virtual Reality & UAS for STEM Education
- Fluid Physics, Wind Tunnels, Computational Fluid Dynamics, Shock Waves, Turbomachinery, Dentofacial & Cardiothoracic Fluid Dynamics
- Design Innovations research: specifically Innovative Concept Design, Structural Form Design & Technology Entrepreneurship.

- Haptics, Robotics, Mechatronics, Human-Centered Design, Multi-Modal Interfaces, Medical Devices and Entrepreneurship
- Modeling of Advanced Manufacturing Processes and Other Physical Processes, Computational Solid Mechanics, Modeling and Testing of Manufacturing and Other Physical Processes, Robotics / Mechatronics / Automation and Machine Learning / AI

Washington University

- Advanced Materials
- Biomechanics and Mechanobiology
- Thermal - Fluids in Energy
- Aerospace

Aerospace Link of the Month

Boeing Announces New Leadership at Defense Unit
By Stephen Losey, 03-28-2022

<https://www.defensenews.com/industry/2022/03/28/boeing-announces-new-leadership-at-defense-unit/>



Boeing announced Ted Colbert, who heads Boeing Global Services, will take over the company's \$26 billion defense unit on April 1st. Leanne Caret, the president and chief executive of Boeing Defense, Space and Security, will retire later this year. Until then, Caret will serve as executive vice president and senior adviser to Boeing CEO Dave Calhoun as part of the transition process.

Career Workforce Development Chair Opening on the AIAA St. Louis Section Council

The St. Louis Section has the Chair position open on its Council for the Career Workforce Development Committee. The Career Workforce Development Committee is responsible for planning and implementing programs and activities that can assist an engineer's career.

If you are interested, or would like additional information about this role, please contact Dr. Sanjay Jayaram, at sanjay.jayaram@slu.edu.

Upcoming Events

Date	Information
<p>Wednesday April 20 4-7 PM CT</p> <p><i>Spring Social</i></p>	<p>Young Professionals 2022 Spring Social</p> <p>Come network with other young aerospace professionals in the St Louis region at Trainwreck Saloon! This is a great opportunity to meet other professionals outside your day-to-day work groups and learn how you can get involved with AIAA!</p> <p>Location: Trainwreck Saloon Westport, 314 W Port Plaza Dr., St. Louis, MO 63146</p> <p>RSVP using the JOTform link: https://form.jotform.com/220935805303047</p>
<p>April 22 – April 27 <i>Virtual Judging Event</i></p>	<p>2022 St Louis County Science Fair</p> <p>If interested in helping with online judging, please contact Brad Sexton at bradley.w.sexton@boeing.com.</p>
<p>May 10</p>	<p>Technical Specialist Meeting</p>
<p>May 26</p>	<p>Annual Honors & Awards Banquet</p>

AIAA St. Louis Section Council

Office	Officeholder	Telephone	Email
Chair	Sanjay Jayaram	----	sanjay.jayaram@slu.edu
Vice Chair	Charles Svoboda	314-545-2363	charles.svoboda@boeing.com
Secretary	Chi Hou Lei	----	chihou.lei@slu.edu
Treasurer	Alec Herzog	314-545-5219	alec.n.herzog@boeing.com
Advisor	Jim Guglielmo	314-452-1271	james.j.guglielmo@boeing.com
Advisor	Srikanth Gururajan	314-977-8355	srikanth.gururajan@slu.edu
Advisor	Vacant	----	----
Advisor	Chris Tavares	314-777-4663	christopher.m.tavares@boeing.com
Region V Rep.	Mark Kammeyer	314-234-9497	mark.e.kammeyer@boeing.com
Committee	Chair	Telephone	Email
Career Workforce Development	TBD - Vacant	----	----
Communication	John Shultz	314-563-6570	john.c.shultz@boeing.com
Education & College Outreach	Charles Svoboda	314-545-2363	charles.svoboda@boeing.com
History	Colin Thiele	608-778-6438	Colin.thiele@slu.edu
Honors & Awards	Patrick Padilla	314-232-9349	patrick.a.padilla@boeing.com
Membership	Alex Friedman	636-206-9196	alexander.friedman@boeing.com
Newsletter	Jim Guglielmo	314-452-1271	james.j.guglielmo@boeing.com
Programs – Dinner Meetings	Bob Dowgwillo	314-458-1504	hkdrmd@icloud.com
Programs – Tech Specialist	John Schaefer	314-232-9331	John.a.schaefer3@boeing.com
Public Policy	Frank Youkhana	314-234-4811	frank.w.youkhana@boeing.com
Retirees	Ray Cosner	----	ray.cosner@outlook.com
Service Projects	Brad Sexton	314-232-7826	bradley.w.sexton@boeing.com
STEM	Jackie Blumer	----	jblumer@bccu2.org
Strategic Planning	Larry Brase	314-234-4907	lawrence.o.braser-jr@boeing.com
Webmaster	Jim Guglielmo	314-452-1271	james.j.guglielmo@boeing.com
Young Professionals	Stephen Clark	314-545-9509	stephen.f.clark3@boeing.com

If you are interested in joining one of the committees, please contact the AIAA St. Louis Section Chair, Dr. Sanjay Jayaram, or the committee chairperson.



American Institute of Aeronautics and Astronautics
St. Louis Section

Wednesday, April 20, 2022

Trainwreck Saloon Westport

314 W Port Plaza Dr.,
St. Louis, MO 63146

Young Professionals 2022 Spring Social

Learn how to get involved with AIAA YP
and other committees!

Network with aerospace
professionals in the St Louis
region!

**Come network with other young aerospace
professionals in the St Louis region at Trainwreck
Saloon! This is a great opportunity to meet other
professionals outside your day-to-day work groups and
learn how you can get involved with AIAA!**

Students and non-AIAA
members welcome – bring a
friend!

Provide inputs to
future YP events!

Schedule

4:00-7:00 Social/ Networking

Menu

Light Appetizers

Tickets

Free

Reservation by 12 noon Tuesday, April 19

Send reservation* by [Jotform](#)

Contact [Steve Clark](#) for questions

* RSVP's appreciated, but not required

