



In this Issue...

- Chair Chat
- Aerospace Link of the Month
- Openings on AIAA St. Louis Council
- St. Louis Section Twitter Account
- History in Aviation: April & May
- Membership Report
- Making a Change?
- Education & College Outreach
- STEM Corner
- St. Louis Section Awards
- Congressional Visits Week
- Dinner Meeting / Trivia Contest
- Technical Specialist Meetings
- Upcoming Events
- St. Louis Council Members
- May Event Flyer

Chair Chat

St. Louis Section Chair – Mark Kammeyer



It's May and we are winding down the 2020/2021 year. And quite a year it has been. Last week we held our eleventh virtual event, the April "dinner" meeting with the St. Louis Challenger Learning Center. I use the quotes because, of course, we have not had dinner together for over a year. This event was originally scheduled for last April, and was in fact the first dinner meeting we cancelled due to the Covid pandemic. I think the Challenger Center staff set the standard for a virtual event. Simulation has always been at the core of their curriculum, so perhaps it should be no surprise that the experience was so engaging. CLC staff Caitlyn Rettke and Karen Likert led us on our simulated mission to support a crew exploring Mars. Their enthusiasm was infectious and I can imagine how much better it will be when students can experience the Center's programs on site and in person with their peers. I am pleased that our Section has partnered with the CLC

as our primary avenue of STEM outreach and support to our Educator Associate members.

Looking back over the year, we got off to a slow start as our Council came to terms with virtual meetings. The overall attendance was remarkably the same, averaging 40 to 50 people. I am sure some members avoided the virtual venue, but I am equally sure that others appreciated the ability to continue when the alternative was to abstain completely. And virtual events present a real convenience for our speakers, as evidenced by presentations from Virginia and California. Indeed, Mark Schoenenberger's discussion of the history and aerodynamics of Mars landers might have been cancelled but for the virtual nature, because it coincided with the landing of the Perseverance Rover on February 18. There is just no way we can achieve such timeliness without Zoom. Looking ahead, your Council intends to resume in-person events as soon as possible, but I wouldn't be surprised to see Zoom meetings on the calendar too. Or maybe a hybrid approach, if we can make the logistics work.

Finally, I want to thank Alex Friedman for filling the role of Zoom Master for our Section. Alex joined the Council about 18 months ago as our Membership chair. When we began planning our first virtual events, we needed someone to schedule the Zoom account provided by the AIAA National office, set up the meetings, and serve as host. Alex stepped up and filled the need. Thanks, Alex! We couldn't have done it without you.

Virtually yours.

Mark Kammeyer

Aerospace Link of the Month

Opinion: Will Boeing Become The Next McDonnell Douglas?

Author: Richard Aboulafla, February 16, 2021

<https://aviationweek.com/aerospace/program-management/opinion-will-boeing-become-next-mcdonnell-douglas?elq2=ac39bf5889ee416b9570ef445d724026>

Two Committee Chair Openings on the AIAA St. Louis Section Council – Career Workforce Development Chair & Communication Chair

The St. Louis Section has Chair positions open on its Council for the Career Workforce Development Committee and the Communications Committee. The Career Workforce Development Committee is responsible for planning and implementing programs and activities that can assist an engineer's career. The Communications Committee is responsible for publicizing the activities of the section to the membership, including maintaining the Section's website, social media presence, and newsletter.

If you are interested, or would like additional information about this role, please contact Mark Kammeyer, at mark.e.kammeyer@boeing.com.

AIAA St. Louis Section Twitter Account

The AIAA St. Louis Section now has a Twitter account! Please follow us at [@StLAIAA](https://twitter.com/StLAIAA)

History in Aviation: April & May

Historian - Colin Thiele

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

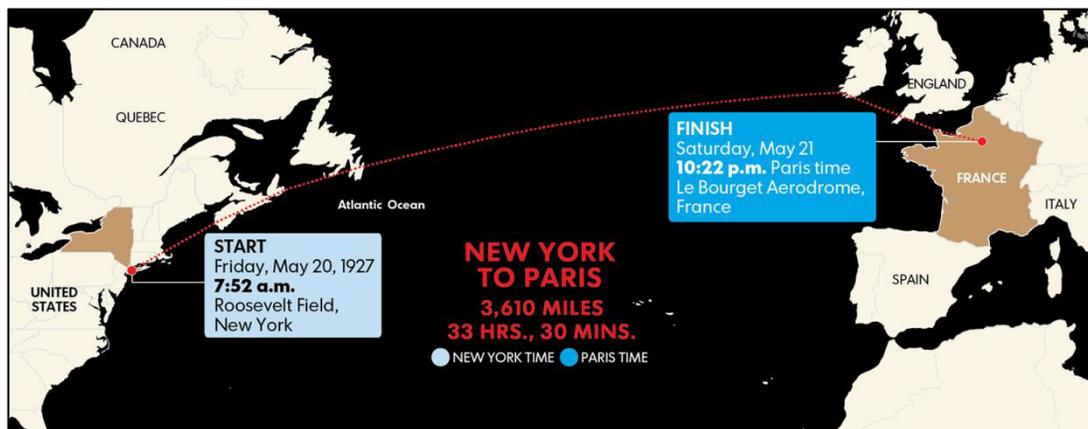
12 April 1961 – Flight-Major Yuri Gagarin becomes the first human in space, onboard the Soviet spacecraft Vostok 1. The flight lasted 108 minutes and included an 89-minute orbit of Earth.



May 1930 – Lambert Field in the spring. St. Louis purchased the airport from Albert Bond Lambert in 1928. The city went forward with new improvements to the airport such as paving the runway and building a terminal building.



20 May 1927 – Charles Lindbergh pilots his “Spirit of St. Louis” across the Atlantic Ocean for the first non-stop flight from New York to Paris

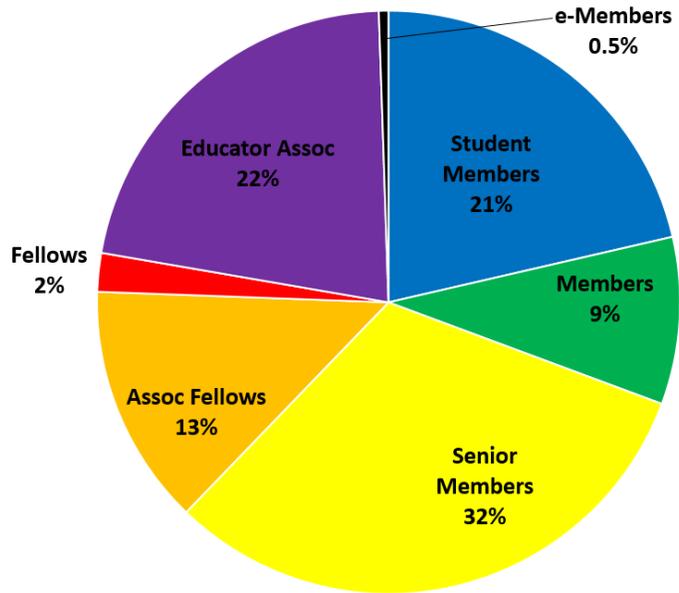


Membership Report

Alex Friedman – Membership Chair

The Section membership is at 531 members. The distribution breaks down as shown in the table and pie chart at the right.

Type	Number
Professional	319
Student	90
Educator Associate	122



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."

Education & College Outreach

Charlie Svoboda – Chair

St Louis Chapter AIAA Student Scholarships: Over the summer we plan to approach the Department chairs of the schools we support: MU, SLU, Wash U and MS&T about student scholarships. They would notionally be for \$500 / year and awarded to the student that the Department selects. We will require the student receiving the award to make a presentation to our chapter. If the presentation is made in person we would cover travel costs. If you have any questions, please contact Charlie Svoboda: charles.svoboda@boeing.com, 314-216-1155.

STEM Corner

STEM Chair- Jackie Blumer

Virtual Dinner Meeting: Challenger Learning Center

On Thursday April 29th, AIAA members and guests experienced a virtual space mission simulation with the Challenger Learning Center (CLC). Participants, taking on the role of Mission Controllers, worked together to track, program, and land a rover on the surface of Mars.

The Challenger Learning Center St. Louis is dedicated to inspiring future generations of innovators through space mission simulations and other STEM education programs. It is part of a worldwide network of over 35 Centers founded by the families of the astronauts tragically lost during the 1986 Challenger space shuttle missions.

Congratulations to Diane Burke for winning a \$350 CLC mission credit and to Chris Heyrman for winning a gift bag of CLC items.



STEM Corner Activity – Make a Paper Mars Helicopter:

- **Overview:**

- NASA's [*Perseverance Mars rover*](#) carried the first [*helicopter to the surface of Mars!*](#) This helicopter has to be super lightweight to fly on Mars. It also needs large blades that can rotate really fast so it can generate enough lift to overcome the gravity of the Red Planet and lift off the ground.
- In this project, you will build a paper helicopter. Then, just as NASA engineers had to try out different versions of the Mars helicopter before coming up with a final design, you will experiment with the design of your helicopter to see what works best.



- **Background:**

- In July 2020, NASA launched the [*Perseverance rover*](#) to Mars. Traveling along with Perseverance is [*Ingenuity, the first helicopter designed to fly on Mars.*](#) A small autonomous aircraft, Ingenuity is designed to perform the first tests of powered flight on another world. In the months after Perseverance lands, the helicopter will be lowered from the rover's belly onto the surface of Mars to test powered flight in the planet's thin atmosphere.
- Ingenuity will perform a series of test flights over a 30-Martian-day window that will begin sometime in the spring of 2021. (A Martian day, or sol, is 24 hours and 37 minutes.) For its first flight, Ingenuity will hover a few feet above the ground for about 20 to 30 seconds and land. That alone will be a major achievement: the very first powered flight in the extremely thin atmosphere of Mars! After that, the team will attempt additional experimental flights over a farther distance and at a greater altitude. Ingenuity's performance during these experimental flights will help inform decisions about the future use of small

helicopters for Mars exploration. Future Mars helicopters could serve as robotic scouts, surveying terrain from above, or they could function as stand-alone science craft carrying instrument payloads.

NASA Link: <https://www.jpl.nasa.gov/edu/learn/project/make-a-paper-mars-helicopter/>

Last Call for Nominations to the 2021 AIAA St. Louis Section Awards!

The deadline to submit nominations for the 2021 Section Awards is rapidly approaching! The last submissions will be accepted on **May 15th, 2021**. Nomination forms are available on the AIAA St. Louis Section website, as well as on our Boeing inSite group page. Additionally, nomination forms can be provided via email at request.

The nomination process is simple: nominators only need to answer two questions describing the candidate and what makes their successes distinct. **AIAA membership is not a prerequisite** for nomination and self-nominations are accepted! Award winners will enjoy recognition, commemorative trophies, and reception at the annual Section Awards Ceremony. Remember, nominations are due by May 15th, 2021.



The award categories are as follows:

- **Civic Service Award:** In recognition of an outstanding contribution to the progress of aerospace activities in the St. Louis area.
- **Educator Associate Member Award:** In recognition of outstanding contributions to K-12 STEM activities by an AIAA Educator Associate Member.
- **Faculty Award:** In recognition of a faculty member who has provided outstanding support to an AIAA student branch and individual student members at his/her university, or provided outstanding education to his/her students in the aerospace sciences through innovative curriculum or instructional methods.
- **Lindbergh Award:** In recognition of a distinguished contribution in applying aerospace technology to improving the quality of human life.
- **Section Service Award:** In recognition of an outstanding contribution to the section's activities by an AIAA section member.
- **Technical Accomplishment Award:** In recognition of outstanding technical research or technical accomplishment in aerospace sciences by an individual or team.
- **Technical Management Award:** In recognition of an outstanding accomplishment in technical management in aerospace sciences.
- **Young Professional Award:** In recognition of outstanding technical accomplishments of young engineers and scientists in the aerospace disciplines.

Except as noted in the award descriptions above, AIAA membership is not a pre-requisite for award eligibility. Please contact Patrick Padilla (patrick.a.padilla@boeing.com) with any comments or questions!

Congressional Visits Week: March 15-19, 2021

Public Policy Chair – Frank Youkhana



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.

Due to COVID-19, CVD 2021 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) and I held a very productive meeting with Ben Gruender, a staffer to Senator Josh Hawley. After giving some background on AIAA’s mission and composition, we discussed in detail the three “Policy Pillars” that AIAA desired its membership to impress upon Congress.

1. To provide stable and sustained funding for the Aerospace and Defense sector.
2. To invest in Aerospace and Defense research and development to protect jobs, provide future employment opportunities, and to sustain the United States leadership position in aerospace innovation.
3. To enable and diverse and robust Science, Technology, Engineering, and Math pipeline while supporting development of the workforce for all skill types and career stages to advance learning commensurate with technical and product advancement.

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 2022 are to meet 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 nation’s policymakers.

Section’s First Virtual Air & Space Trivia Contest Goes Off Without a Hitch – Finally!

Program Chair – Bob Dowgwillo

Thursday, March 18, 2021
ZOOM Video Conference
Link will be sent after registration closes

New Members Night & Aviation and Space Trivia Contest

Join us for a fun night of virtual Aviation & Space trivia and learn about your Section and the benefits of AIAA membership!
Everyone is welcome!

- 5 categories of 10 questions each
- All questions will be visual
- Answers submitted via JoForm.
- Teams welcome, but you must do your collaboration outside of the ZOOM meeting

PRIZES!

- Attendance
- Best Headgear
- Trivia Champion

Best aviation headgear wins a prize!

Schedule

7:00 – 7:15	Greeting and Agenda
7:15 – 8:15	Trivia & Presentations
8:15 – 8:30	Awards

Price
FREE !!!

Register by 12 noon, March 18
Use link below or QR code above
<https://form.jotform.com/203157765622158>

AIAA
SHAPING THE FUTURE OF AEROSPACE

The March 18 “Dinner meeting” featured our annual New Member’s / Trivia Contest event in a Zoom video conference format. Our first attempt at this last October had to be cancelled. Since then, the Section has gained much more experience with Zoom and this event had no surprises.

The number of online registrants was an astounding 350...well beyond our ability to accommodate. However, as we have come to expect, only about 40 folks actually logged in the day of the event, and fewer still actually participated in the contest.

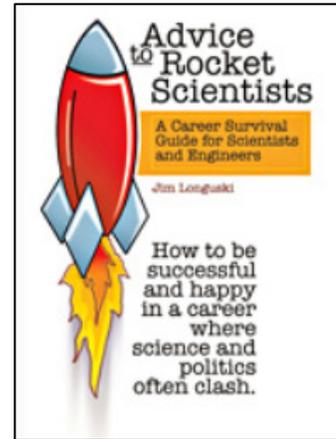
The evening was organized around the Air & Space Trivia contest. This year's questions were assembled by Bob "Bob&Doug" Dowgwillo and Tom "Major Tom" McAtee, two trivia contest veterans that contestants have endured before. The contest consisted of 5 categories of 10 questions each. All questions were visual. Answers were submitted electronically via JotForms sent out as needed. Teams were encouraged, but unlike a face-to-face event, any inter-team discussion had to occur outside the Zoom meeting itself. And, last but not least, everyone was on the honor system to avoid googling.

The five categories were:

- 1) Where in St. Louis: Identify where in the metro area this aerospace photo was taken
- 2) Name that Debris: Identify this broken airplanes
- 3) G-BOND: Name the James Bond movie that featured this aerospace vehicle.
- 4) Milestones: Give the year of this important aerospace event
- 5) Fact or Fake: Is this aircraft real...or a figment of Hollywood's imagination

Alex Friedman, the Section Membership Chair, served as Master of Ceremonies. He led off the event with a brief practice round, followed by an informal presentation of the AIAA membership benefits and ways to join.

Between rounds, presentations were made by Mark Kammeyer (Section Chair), Steve, Clark (Young Professionals Committee Chair), and Jackie Blumer (STEM Committee Chair and Educator Associate).



The attendance prize was a copy of the AIAA book *Advice to Rocket Scientists*. The winners, selected at random, were Jim Dreas, Dylan Wachter, and Sara Beadle.

The headgear winner was Ian Davis, wearing a black cap with a B-2 silhouette. His prize was, appropriately, a NASA cap.

Team Kendrick was the contest winner, with 36 correct answers out of 50. The Grand Prize was a one year AIAA regular membership

No one had the correct answer to Question 5 in the G-BOND category. Now is your chance it give it a try. Here it is: ***What Bond movie featured the aircraft type shown at the right? Bonus if you can name the aircraft type.***



The answer will be in the next newsletter. Remember...No Googling!

Technical Specialist Meetings

Technical Specialist Chair – John Schaefer

It has been a busy spring for Technical Specialist programs, despite the ongoing challenges of the pandemic. In February, the section was joined by Dr. K. M. Isaac, a professor at Missouri S&T in the MAE department. Dr. Isaac presented on blast wave-induced traumatic brain injuries, and how a multi-disciplinary statewide effort is underway to use aerospace and other technologies to study and treat this phenomenon. Next up in March was Dr. Alexandra Loubeau, the co-technical lead of community testing in NASA’s Commercial Supersonic Technology project. In her talk, Dr. Loubeau described the many of the challenges faced in the design and community testing of overland supersonic commercial aircraft, and she gave some insights into the design of the X-59 QueSST aircraft currently being built by NASA. Finally in April, the section was joined by Mike Harrison, who has several decades experience designing and working with defense and space products. Mr. Harrison presented a rich history of stealth technology from the 1950s to modern day aircraft, and discussed several open-source references where more information can be found.

Our final Technical Specialist meeting of the 2020-2021 cycle will be on Tuesday, May 18. Michael Mackowski will be presenting on “The Lost Missions of Gemini.” We hope to see you there!

Upcoming Events

Program Chair – Bob Dowgillo, Technical Specialist Chair – John Schaefer

Date	Information
<p>Tuesday, 18 May 6:00 PM CT</p> <p>Technical Specialist Meeting (Virtual)</p>	<p>Presenter: Michael Mackowski, Retired Spacecraft Engineer</p> <p>Title: <i>The Lost Missions of Gemini</i></p> <p>Abstract: In addition to the NASA flights that perfected the technologies required for the Apollo lunar program, the Gemini spacecraft was considered for many other missions. Some of these involved minor upgrades, while others proposed highly modified variants of the basic Gemini capsule and adaptor. Most of these proposals never got past the study phase, but a few got to the mock-up stage or even the beginning of fabrication of flight hardware (e.g., Manned Orbiting Laboratory). This presentation takes a fresh look at the little-known Gemini applications, who sponsored them, and how they related to other contemporary space projects.</p> <p>RSVP: https://form.jotform.com/211245157155147</p>
<p>Thursday, 27 May 7:00 PM CT</p> <p>2020/2021 AIAA St. Louis Section Awards Meeting (Virtual)</p>	<p>Presenter: TBD</p> <p>Title: <i>TBD</i></p> <p>Abstract: The Annual Honors & Awards Event is our opportunity to recognize the achievements of selected local individuals and organizations in their aviation and space endeavors over the past year. In addition, we present our newly elected section Chair, Vice-Chair, Secretary, Treasurer, and Region V Representative. A guest speaker will provide a presentation of general interest. The official passing of the gavel by our outgoing Chair, Mark Kammeyer, will cap off the evening.</p> <p>RSVP: <i>Jotform Registration Link Will Be Sent Out Shortly</i></p>

AIAA St. Louis Section Council

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Secretary	Abby Sevier	425-614-5135	abigail.e.sevier@boeing.com
Treasurer	Alec Herzog	314-545-5219	alec.n.herzog@boeing.com
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Programs – Tech Specialist	John Schaefer	314-232-9331	John.a.schaefer3@boeing.com
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STEM	Jackie Blumer	----	jblumer@bccu2.org
Strategic Planning	Larry Brase	314-234-4907	lawrence.o.brace-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, Mark Kammeyer, or the committee chairperson.



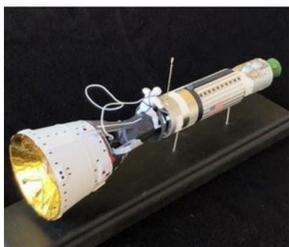
American Institute of Aeronautics and Astronautics
St. Louis Section

Tuesday, May 18, 2021

Virtual Zoom Meeting
Meeting login information will be distributed via email

The Lost Missions of Gemini

Presented by Michael Mackowski, Retired Spacecraft Engineer



In addition to the NASA flights that perfected the technologies required for the Apollo lunar program, the Gemini spacecraft was considered for many other missions. Some of these involved minor upgrades, while others proposed highly modified variants of the basic Gemini capsule and adaptor. Most of these proposals never got past the study phase, but a few got to the mock-up stage or even the beginning of fabrication of flight hardware (e.g., Manned Orbiting Laboratory). This presentation takes a fresh look at the little-known Gemini applications, who sponsored them, and how they related to other contemporary space projects.

Michael J. Mackowski is a retired spacecraft engineer whose career spanned 45 years. He has worked on such programs as Landsat 8, the Fermi and Swift gamma ray observatories, the Iridium communications satellite constellation, several other NASA science satellites, the X-30 National Aerospace Plane, and the Space Shuttle. He started his career with McDonnell Douglas Astronautics Company in St. Louis, Missouri in 1977 and retired in 2018 as an employee of Northrop Grumman Innovation Systems (formerly Orbital ATK) in Gilbert, Arizona. Having started his career working for engineers who had only ten years earlier build Mercury and Gemini, it is no surprise that McDonnell's Gemini two-man spacecraft is one of his favorite space vehicles. He is an Associate Fellow of AIAA, the current chair of the Phoenix Section, and is a member of the AIAA History Committee.

Schedule		Menu	Ticket Price
6:00 – 7:00 CT	Presentation	None – all virtual due to COVID-19	Free
7:00 – 7:30 CT	Additional questions or follow-on conversations		

Please RSVP by completing our Jotform

<https://form.jotform.com/211245157155147>

Contact [John Schaefer](#) for questions

