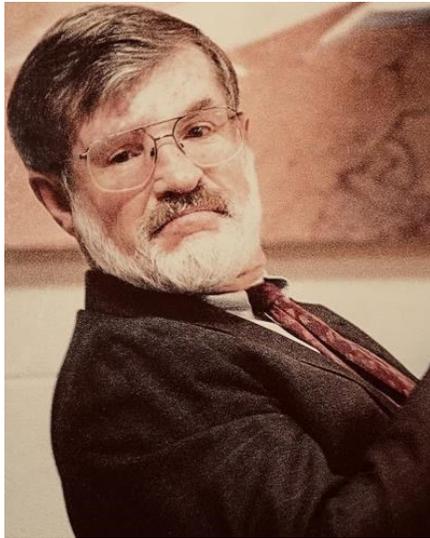




In Remembrance of Dr. Jeremiah F. Creedon

December 2022

By Clayton Turner, Director, NASA Langley Research Center



Dr. Jeremiah F. Creedon, former NASA Langley Research Center Director

In Remembrance

Dr. Jeremiah F. Creedon retired from NASA in 2003 as the Associate Administrator for Aerospace Technology. Prior to that, he served as the Center’s seventh Center Director from 1996 to 2002.

Jerry began his career at NASA Langley in June 1963 as a research engineer in the Navigation and Guidance Research Branch, Instrument Research Division.

He held a variety of management positions in both aeronautics and space research. Creedon was named Head of the Control and Information Systems Section in 1970, Assistant Head of the Avionics Technology Research Branch in 1979, Chief of the Flight Control Systems Division in 1982, and Head of the Flight Systems Directorate in 1985.

A Rhode Island native, Creedon graduated from the University of Rhode Island with bachelor and master of science degrees and a doctorate in electrical engineering in 1961, 1963, and 1970, respectively. He was inducted into URI’s Engineering Hall of Fame.

In 1982 and 1983 he was a Sloan Fellow at Stanford University and received a master of management science degree.

Creedon authored more than 30 technical articles and was a fellow of the American Institute of Aeronautics and Astronautics (AIAA).

He received the Presidential Rank of Meritorious Executive in the Senior Executive Service in 1989 for his outstanding contributions to the management of NASA programs. In 1990, Creedon received the NASA Outstanding Leadership Medal. In 1995, he received the Presidential Rank of Distinguished Executive in Senior Executive Service.

After retiring from NASA in 2003, Jerry joined the faculty of Old Dominion University.

To view the full obituary, please visit <https://www.legacy.com/us/obituaries/dailypress/name/jeremiah-creedon-obituary?id=36973756>.

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It is with a heavy heart that I share the passing of former NASA Langley Research Center Director Jeremiah F. Creedon on October 29, 2022. Jerry served the agency for 40 years and was known and respected by many.

He made many contributions, and I will always reflect fondly on the critical role he played in stabilizing the Center during a difficult time in its history. He started work on a new vision for Langley’s future and helped create a foundation we build on today.

I know that many of you who worked with Jerry will have a kind thought or story to share. He made an impact on countless colleagues over the course of a remarkable NASA career.

All of us in the Office of the Director send our condolences to his family.

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President's Report

By Dan Palumbo, President

Greetings, LAA members. I am pleased to announce that this past quarter we began to produce hybrid meetings (local and remote) from the NACA Room with the help of NASA's support staff. At first we used one laptop attached to a versatile webcam designed for hybrid meetings. This setup had several shortcomings. We eventually evolved to using two laptops (one for the podium and one to control meeting), an additional webcam and several microphones scattered around the NACA Room. I had the opportunity to view the October meeting remotely and was pleased with what I saw and heard. My thanks go out to the NASA staff and members of the IT committee for working to resolve all the issues that arose as we refined our approach.

As you read this, we should have finished processing over 60 six-month NASA badges so members can attend the meetings in the NACA Room. We have had to limit the number of badge requests to 20 per month to avoid overburdening Melanie Robinson, our NASA Liaison. We had provided an online form so members could request a badge. This form has now been taken offline. To request a badge from this point on, please send an email to me at dlpalumbo@larcalumni.org.

The Programs Committee has been discussing planning more social activities such as the Mariners' Museum and Military Aviation Museum tours. The question arose if we should schedule the social activities in addition to, or, as a replacement for, a monthly General Membership meeting. There are pros and cons to both approaches. We decided to poll the membership to find out what you thought. As of this writing (November 1st), we have had 40 respons-

es. Three members out of forty said they were opposed to replacing our regular meetings with other social activities. Some suggested we could make our regular meetings more of a social gathering. Others said they looked forward to hearing the speakers. Twenty five out of forty said they were interested in attending other social gatherings with 20 saying they would consider a day trip and six would consider going on an overnight trip. The Board has yet to discuss these results and more members will most likely chime in, so the results aren't final and no decisions have been made.

Finally, at this time of year, one third of the Board retires. Many thanks to Geoff Tennille, Doug Morris, Manjula Amber, Rick Ross and Dick Hueschen for their service. Geoff, Rick, and Dick will continue to serve as Treasurer, IT Comm Chair, and Communications Officer. The Vice President and Secretary positions are open for 2023 as well.

We will need to fill the member-at-large and officer vacancies to continue to function. Our By-laws specify that the Board consist of at least 12 members elected from the membership. The members-at-large voice current membership concerns in a way that entrenched officers and committee chairs cannot. By the time you read this, you should have received an email describing the function of the Board and its committees. There is plenty of opportunity to contribute. Please consider serving on the Board.

I wish you a safe, healthy and happy holiday season and New Year!

Dan Palumbo,
LAA President ♦

LAA Winter Luncheon

By Vicki Crisp, Vice President and Programs Chair



The historic Chamberlin at Fort Monroe

We invite everyone to join us at The Chamberlin for our Winter Luncheon. It will be held during our regular meeting time and date in December. The Chamberlin has a wonderful menu set for us, will be decorated for the holidays, and every seat is promised a grand view of the bay. Please check out the LAA website at <https://larcalumni.org> for more details and photos. We hope to see you December 13th from 11:30–1:30.

Our speakers this year have been

amazing. Dan Palumbo, Joel Levine, and Geoff Tennille each passionately spoke of their areas of research. We had a number of speakers from Langley to include Kevin Rivers, Dr. Ricky Butler, Dr. Bobby Braun, Rich and Kevin Antcliff, and Shane Dover with topics across the space exploration, planetary science, aeronautics and the speakers' personal journeys to achieve the nation's goals. We had one "external" speaker, James Utterback, that spoke to expansion within our community via the Hampton Roads Bridge Tunnel.

We have many speakers lined up for the coming year and remain open to your ideas. Feel free to reach out.

Be sure to check our website at <https://larcalumni.org> for our upcoming guest speakers in 2023—it promised to be an exciting year:



Dining room at The Chamberlin

- Lisa M. Ziehm—Langley Research Center Associate Director.
- Steve Jurczyk—Co-founder, President and CEO of Quantum Space.
- Dr. Mark Lewis—University of Maryland, Professor Emeritus and Executive Director for the National Defense Industrial Association's Emerging Technologies Institute.
- Dr. Chauncey Wu—Space Mission Directorate.

See you in December! ♦

LAA Financial Overview for 2022

By Geoff Tennille, Treasurer

In spite of COVID, 2022 has been a very good year for the LAA. We transitioned from monthly Zoom meetings to monthly hybrid meetings with about half of the attendees being virtual and the other half being physically in the NACA Room of the Langley Cafeteria. To improve the quality of the audio and video for all attendees, we have purchased additional electronic equipment, including a new laptop computer to use in the NACA Room. Rick Ross has done an outstanding job to pull everything together and each meeting is technically superior to the previous one.

The other major expenditure for the year, which was led by Duncan McIvler and the NACA/NASA Hall of Honor Committee, was to co-sponsor, with

NASA Langley Research Center, the Induction of the Class of 2022 into the NACA/NASA Hall of Honor. The plaques for all 50+ honorees are in display in the NACA Room, which is another great reason to attend one of the LAA meetings in person.

Finally, thanks to the generosity of Damodar and Manjula Ambur, the LAA has provided support to the AIAA Hampton Roads Section's STEM (Science, Technology, Engineering and Mathematics) initiatives as well as the Futures in Aerospace Scholarship. The Amburs have pledged the same level of support for 2023 and 2024. Since the LAA received tax-exempt status, all donations are tax-deductible. Whether or not you itemize, you may be able to make a donation with a

part of your required minimum distribution from your retirement account, which makes the donation amount exempt from your taxable income. Please consider making a donation to the LAA, which could include specifying that the LAA support another organization related to aerospace, like the Amburs have done.

The current balance in the LAA account is still above the ending balance for 2021. We also completed a successful audit for 2021, with no significant discrepancies, which was conducted by Kathy Ferrare. When all expenses have been paid, I expect that the ending balance for 2022 will be just a little under the ending balance for 2021, not bad considering all that we accomplished this year. ♦

One Good Thing Came Out of the Pandemic ...

By Stephen Scotti

Like many retirees, I have a fair amount of free time, and the limits on social interaction during the pandemic gave me even more. Coincidentally, about the same time, I received a challenge from Amethel Parel-Sewell, the Editor/Creative Director of Brilliant Star, the Bahá'í children's magazine where I volunteer as the STEM Education Advisor. The magazine website had a web-based drawing app that was "broken." So knowing I had a technical background, she asked me if I thought I could develop a replacement for it. I considered myself pretty good at FORTRAN programming as an engineer and I had done a little website administration, so with a bit of hubris I agreed to try.

Of course, it was much more challenging than expected, but I discovered two resources that made it possible. It turns out FORTRAN is useless for web programming; I needed to learn JavaScript. A good way I found to learn was through tutorial videos. I strongly recommend the videos on the [Coding Train YouTube channel](#). The "star" of the videos, Daniel Shiffman, is a wacky, entertaining guy whose short videos are "bite-sized," project-based lessons where you learn by doing. He made learning JavaScript fun.

The other resource I found was GitHub—it's a huge repository for open source code that you can download and use in your project. I found a graphics library there called [Fabric.js](#) that did most of the actual drawing in a browser window. Fabric.js did the "heavy lifting" of generating the screen graphics ("back end"), so I could concentrate on the interface that the user interacts with.

I also had a lot of help from the Brilliant Star staff. They created icons for the drawing palettes, gave feedback

LAA Annual Dues for 2023

By Geoff Tennille, Treasurer

Annual LAA dues are still just \$10 per year, payable by the end of January of each year. If you have not yet paid 2023 dues, you have until January 31, 2023 unless you want to get on the list for a six-month badge, in which case please pay now and submit a badge request to Dan Palumbo at dlpalumbo@larcalumni.org.

The LAA currently has 208 members, with 96 either Honorary Life or Life-Paid members who paid \$100 each. We had 20 who became Life-Paid members in 2022. We had 16 new members for 2022, four of whom have become Life-Paid, and we have 112 members who pay annually. Here is a breakdown of annual dues status:

Paid in 2021 but not in 2022.....	20
Paid just through 2022	55
Paid through 2023 or beyond	37
Total.....	112

There is detailed information about paying dues and obtaining a 6-month badge on the [LAA website](#). We have a goal of having at least 90% of the ninety members who still owe 2023 dues paid up by January 31, 2023. ♦

on how an artist would want organize and arrange the drawing tools, and they found a ton of bugs in the code. So now, almost two years later, the app, Imagination Station 2, is up and running. Visit the [Brilliant Star website](#) to learn more about this app. The app has proven useful in publishing Brilliant Star too—the accompanying figure is the art for an upcoming cover of the magazine. It was created by C. Aaron Kreader, the Designer/Illustrator for Brilliant Star, in part by using assets from Imagination Station 2. Most of the images can be found using the Clip Art tool in the app. Aaron pulled these images into Adobe Illustrator in order to generate final art

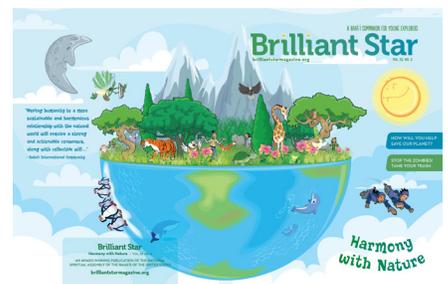
Seeking LAA Officers and Members-at-Large

By Geoff Tennille, Nominations Chair

LAA is searching for five or six Members-at-Large for the Class of 2026. The term is three years, but you may resign (in writing) at any time and for any reason. The requirements are: maintain your status as an active member of LAA; represent the General Membership to the Board; attend at least 50% of Board meetings, either in person or virtually; and if you can't make a Board meeting, ask another Board member to serve as your proxy, which will count toward maintaining your 50% attendance requirement.

I am also searching for candidates for Vice-President and Secretary. The other officers are seeking one more term on the Board (our By-laws permit two consecutive full terms for each office). Candidates must be a current Board member, which in January 2023 will include the current officers, committee chairs and the Member-at-Large classes of 2024, 2025 and 2026.

If you are interested in becoming a Member-at-Large or an Officer of the LAA, please send me an e-mail as soon as possible to treasurer@larcalumni.org. ♦



Cover art for an upcoming issue of Brilliant Star magazine created, in part, using Imagination Station 2.

that had high enough resolution for professional print publication. And you can see the app demonstrated by Aaron in this [YouTube video](#) recording of the livestream we did when the app went "live." Have fun! ♦

Note on Critical Thinking

By Steven A. E. Miller
Associate Professor of Mechanical
and Aerospace Engineering, U of FL

One might visit any leading university campus in the United States and ask the graduate faculty training future researchers one question, “what is the purpose of educating students?” One of the most frequent answers is to create critical thinkers. An obvious follow-up question is, “how do you create critical thinkers?” More opinions are presented than there are graduate faculty on campus.

We live in a marvelous time where the majority of knowledge is accessible within a minute. Using a pocket computer (cell phone), we can query any question and have the answer almost immediately. We are able to create artwork, essays, poetry, and simple mathematical proofs with emergent machine learning technology.

Often today, when students are faced with problems in the university classroom such as design, mathematics, religious studies, fluid dynamics, economics, art, English, or even creating a poem, most students immediately reach for their pocket computer.

But what does the growing mind do when faced with an ill-posed problem or a well-posed one without a solution? In my experience teaching students, there is often a range of human reactions that have included confusion, frustration, anger, fear, humiliation, and others. These are emotions to be celebrated because they represent a reaction from the student of being pushed outside their boundaries and intellectual comfort zone.

Here, students are no longer in the K-12 or early university environment, which lay out lesson plans in carefully constructed curriculums where problems and answers are well-defined. Educated wise minds should

be fortunate to be in the position of not knowing or understanding something, as it represents an opportunity to define and solve a problem that challenges us as a people.

If our goal is to create a society where ideas are openly discussed, debated, and used for the benefit of our people, then training critical thinkers is essential. We cannot have a ‘mob’ mentality where ideas are repeated without being criticized.

The computer and Internet are miracles of our age. These technologies have advanced the world civilization beyond all recent predictions and comprehension. However, we have come to be addicted to these tools as a people. They have created an intellectual handicap and have limited our creativity and critical thinking. It is no wonder that in recent years scores nationwide in mathematics have dropped significantly ([New York Times, Oct. 24, 2022](#)) as students are using online groups and past homework solutions to ‘ace’ their courses.

I continually ask students in my classes to perform analyses on their own. They must close their laptop, turn off their phone, and work on their own to define the problem and attempt a solution. I ask that they write down the laws of motion and examine the variation of a physical phenomenon.

Often, a student will use every technique and manipulative emotion to not use their own mind. Instead of presenting their own ideas and analysis, they return to an unfortunate habit of seeking answers online that do not exist.

This is the core beginning of training critical thinkers—to overcome their fear of being wrong, to present their ideas with welcome criticism, and to challenge the status quo. The idea of critical thought is completely foreign to students, as no one has demanded they think critically.

Technology should allow us to enhance critical thinking, but not replace it. We must teach students to use technology in conjunction with their most useful resource, which is their own mind. The solution is simple—first, use our minds to think critically and independently without technology, and use technology for what it is—a tool. ♦

Surfing Baby Ducks

By Ed Prior, Board Member-at-Large

There have been many Nobel prizes awarded in various fields of science since the first award in 1901, but none has ever been awarded for engineering achievements, and none for research in the fluid dynamics associated with air or water flows that we studied at NASA Langley. However the so-called “Ig Nobel” awards—though conceived as a humorous recognition of somewhat odd achievements—has been awarded to over 13 fluid dynamics research papers over the years.

One was recently mentioned in my favorite weekly science magazine (*New Scientist*, [24 September 2022](#), p. 56). The 2022 Ig Nobel was awarded jointly to biologist Frank Fish and hydrodynamicist Zhiming Yuan and his colleagues for their discovery of how baby mallard ducks are able to keep up with their stronger, faster Mother as she paddles across a pond. Fish was the first to notice this oddity and actually used an artificial Mother duck in a flow tank and studied the dynamics in the wake of the fake Mother, concluding that the swirling vortices behind her were somehow employed by the ducklings to keep up.

25 years later, Zhiming Yuan developed CFD models of the Mother and ducklings swimming together and realized that the little ones were “wave riding” behind Mom—basically surfing—to stay right behind her. I personally think this discovery deserved the real Nobel, but oh well. ♦

NASA tackles the “Flying Saucer”/UFO/UAP Mystery

By Ed Prior, Board Member-at-Large

For the first time, the government has turned to NASA to perform an independent study on Unidentified Aerial Phenomena (UAP), previously called “flying saucers” and more recently “Unidentified Flying Objects” (UFOs). Earlier attempts by our government included the Air Force’s “Blue Book” study which began in 1947 and ended in 1969 after an Air Force-funded study at the University of Colorado (the Condon Report) concluded that “there has been no evidence submitted to or discovered by the Air Force that sightings categorized as ‘unidentified’ represent technological developments or principles beyond the range of present-day scientific knowledge.”

When the report came out, this conclusion—which cost the Air Force \$300,000 for a thousand-page report—seemed incredible in view of the numerous reports (over 12,000 in the Blue Book) of unidentified aerial craft performing impossible maneuvers at impossible speeds. Impossible, that is, unless there is much more to physics than we know.

One of the those reports from 1952 was from an engineer and his wife; the engineer was Paul R. Hill, who later became a well-known and respected NACA Langley aero engineer who received many awards in his career here. Understandably concerned about his reputation in a scientific community that largely dismissed UFOs, Paul rarely discussed his 1952 UFO experience—or the one he alone had in 1962 over his home in Hampton.

After he died in 1990, his daughter Julie compiled his many notes and ideas about the UFOs he had witnessed and published two books co-authored by Robert Wood (*Unconventional Flying Objects: A Former NASA Scientist Explains How UFOs Really Work*).

Hopefully, the new NASA team investigating UAPs will review Paul’s book. (Note: I did not know Paul, but he was the engineer that took me around Langley for 2 days in 1965 after I arrived so I could meet the staff at the several offices he thought might be appropriate for me to join; he decided that orbital drag studies were a good fit—which is where I spent my first ten years at NASA).

Daniel Evans, the Assistant Deputy Associate Administrator for Research at NASA’s Science Mission Directorate, is responsible for creating the team. David Spergel is Chairman, president of the Simons Foundation, and founding director of its Flatiron Institute for Computational Astrophysics. He has searched for exoplanets, studied the age, shape and composition of the universe, and played a key role in establishing the standard model of cosmology.

A MacArthur “Genius” Fellow, Spergel has been cited in publications more than 100,000 times. The other 15 members of the NASA team also have strong scientific and engineering backgrounds. In my opinion, the decision to restrict the team to only unclassified UAP reports is a big mistake; any scientific team needs all the relevant data to understand any phenomena.

An example of the challenges facing the NASA UAP team is an October 28

article by Julian Barnes published in the New York Times. The headline is “[Many Military U.F.O. Reports Are Just Foreign Spying or Airborne Trash.](#)” The article states, concerning the now iconic video of the so-called “[Gimbal UFO](#)” (check it out on the internet if you haven’t seen it) that “Military officials now believe that the optics of the classified image sensor...make the object appear to be turning or spinning.”

I don’t know anything about the “classified image sensor,” but to me the video seems to clearly show a UAP performing a gimbal maneuver. If the optics of the sensor are causing this in some strange manner, the instrument needs to be recalled, fixed immediately, and returned to the Navy. The other troubling part of this video is the shouted comment by one of the other Navy techs: “There’s a whole fleet of them!” Well, why are we not shown the “fleet”? Is that still classified? If so, who did it and why?

There are still many in the government and the scientific community who have strong doubts about the whole notion of UAPs—either because our knowledge of physics forbids their aerial gyrations and speeds or because some in government still worry that citizens will panic if they think alien “fleets” are coming for us like War of the Worlds. I hope the new NASA team will be able to help us understand this strange phenomena. ♦



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The LAA Newsletter is published quarterly. Please submit articles for publication to rick.ross@verizon.net no later than the 10th of February, May, August, or November for publication the following month. Please contact mhueschen@gmail.com to subscribe or unsubscribe.