NASA Langley Alumni Association

LANGLEY ALUMNI ASSOCIATION

President's Report

September 2022

By Dan Palumbo, President

As I write this, I am frustrated by the resilience of the COVID-19 virus. My wife (Dawn) and I have yet to be infected and I'm beginning to feel that its just a matter of time. The infection's effects seem to be mild for someone, like myself, who is fully vaccinated and double boosted. But, who knows? Dr. Fauci commented that if it weren't for antiviral medications that he probably would have ended up in the hospital. What are my chances?

I bring this up because for the third time in the past year we've been able to have a smashing good time at an LAA gathering, all of which have managed to occur in lulls in the virus's activity. The LAA picnic this July was attended by over 40 members. It was held at former Langley Cafeteria manager Donis Anders' The Corner Bistro located at The Hamptons Golf Club. The food was great and seeing members meeting and greeting each other reminds me of what we've been missing. It was a very good time. Pictured are Vice President Vicki Crisp and husband Denny (center) with Laura and Mike Brewer. Be sure to see the other photos shown on page 5.

Vice President Vicki and husband Denny Crisp with Laura and Mike Brewer at the Picnic.

I look forward to the time when we can open our monthly meetings in the NACA Room to all members. We are working towards that reality, but progress is slow. Many members at the picnic asked when six month badges would be available again. The process for six month badges has changed and is time consuming. I am working with our NASA liaison, Melanie Robinson, to streamline the process. We began processing badges for the general membership in August and are limiting the number of badges to 20 per month on a first come, first served basis. You have to register for badge and requests are forwarded to Melanie in the order they are received. If you missed the email with registration information, contact me via email and I'll send you the information.

Another challenge we're facing is recordkeeping. In this age of digital information we produce a lot of records, much of which needs to be kept for several years. The Board's Executive Committee met to discuss this issue. Any solution we implement will require some form of technology to store the records in a manner which can be handed down as officers come and go through the years. I have formed an ad hoc IT Committee with Rick Ross as chair to help us with the care and feeding of whatever technology we choose to do our recordkeeping.

Our LAA meetings will be hybrid with local and remote attendees from this time forward. Currently, only the Board is badged, but as more and more badges are released to the general membership in the coming months, I hope to see the NACA room fill with members enjoying the fellowship of their Langley colleagues. ◆

In This Issue

2022 LAA Officers

President
Dan Palumbo

Vice President & Programs Chair
Vicki Crisp

Treasurer & Registered Agent
Geoff Tennille

Secretary
Rick Ross

Communications Officer
Richard Hueschen

Committee Chairs & Officials

Membership Committee
Michael Marcolini

Nominating Committee
Geoff Tennille

Hall of Honor Committee
Duncan McIver

Website & Newsletter Committee
Olaf Storaasli
Rick Ross
Wayne Richie
Richard Hueschen

Ad Hoc IT Committee
Rick Ross
Olaf Storaasli
Dan Palumbo
Geoff Tennille

Langley Representative
Melanie Robinson

Immediate Past President
Damodar Ambur

LAA Board of Directors

Class of 2023
Manjula Ambur
Doug Morris
Geoff Tennille
Richard Hueschen
Rick Ross

Class of 2024
Vicki Crisp
Jaroslaw Sobieski
Charles Laney
Olaf Storaasli
Michael Marcolini

Class of 2025
Stan Cole
Dave Hinton
Wes Goodman
Ed Prior
Melvin Ferebee
Domenic Maglieri

Treasurer's Report

By Geoff Tennille, Treasurer

The Langley Alumni Association (LAA) is in a good financial position. At the end of July, the checking account had a balance of just over $4,207, the Money Market account had a balance of over $11,333, and there was a balance of $25 in the Share account, so the total balance was over $15,566. One bill was outstanding at the end of July to reimburse Duncan McIver for expenses related to the Hall of Honor Ceremony, which was held on July 14, 2022. That bill for $1,218 was paid to Duncan at the August LAA Board meeting, which leaves just over $2,989 in checking and over $14,348 in the LAA's account at Langley Federal Credit Union.

The LAA has 18 Honorary Life members, 72 Life-Paid members, and 111 members who pay on an annual basis. Sadly, we have lost five life members this year. Of those 111 who pay on an annual basis, we have 16 who have paid dues through 2023 or longer, 51 who have paid dues through the end of 2022, and 12 who joined the LAA in 2022 for the first time. This leaves the LAA with 32 members who paid dues in 2021 but have not paid dues for 2022 as of yet. Since March, I have communicated with all LAA members who were not paid for 2022 to encourage each one to reestablish their LAA membership.

LAA membership renewals have always been due in January; however, a number of members reported that they had never received a formal notice that dues were payable in January. That is a true statement. There have been announcements about dues at LAA meetings, on the LAA website and lately in the quarterly newsletter. However, the word hasn't gotten out to everybody. After Thanksgiving and after New Year's Day, email messages will go out to all members who pay on an annual basis as reminders that 2023 dues are payable. Starting in February 2023, emails will be sent to those individuals for whom there is no record of payment. This process will be used in subsequent years to ensure that all LAA members know when their memberships should be renewed.

Finally, the LAA will elect new officers in January 2023, so I need to get a slate of officers ready by December. If you have any interest in an officer position for 2023, please let me know as soon as possible. This includes the current officers as well.

There is a more urgent need to find a new Secretary to replace Rick Ross for the remainder of 2022. You don't need to be a candidate for the office in 2023. We just need someone to relieve the burden on Rick because of his new duties as Chairman for the IT Committee and the work that still needs to be done to implement new software that will improve the quality of our online meetings. We also need five or six candidates to be Members-at-Large for the Class of 2026.

Please send an email to gtennille@cox.net if you are interested in serving or have a candidate's name to submit. Thank you for considering to serve the LAA. ◆

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.

Hall of Honor Induction Ceremony for the Class of 2022

By Duncan McIver, HoH Chair

The following are brief summaries of activities in the Hall of Honor (HoH) Class of 2022.

The HoH Induction Ceremony took place on July 14 and went extremely well thanks to the HoH team and other supporters, with preparations led by Melanie Robinson and Kathy Ferrare. Michelle Ferebee served as Mistress of Ceremony, and Bo Walkley and Julie Williams-Byrd read the citations. Ira Abbott had prepared framed photographs of the Inductees, including the citations, and Dave Throckmorton handed these to Clayton Turner, NASA Langley Center Director, and Dan Palumbo, LAA President, who presented them to the Inductees.

The printed program and copy of the live stream of the event are available on the LAA website, thanks to Olaf Storaasli and Rick Ross. Sincere thanks to the Class of 2022 HoH Committee and many others for the success of this important NASA Langley event.

The LAA Board of Directors, led by Past President Damodar Ambur and current President Dan Palumbo, were key to the success of the Class of 2022 and the HoH Committee recognizes and thanks them for their role.

The HoH display wall had been updated for the first time before the event to include all the new Inductees and the attendees were invited to view the newly expanded display in the NACA Room.

A reception for the 200 attendees was provided following the ceremony and all enjoyed cupcakes and beverages. LAA covered the cost of the reception.

Preparation of the final report is being led by Bo Walkley with inputs from several contributors. This report will serve as a guide for future HoH classes. A key element of this report will be recommendations for improving the process for future HoH classes. All participants in the current class have been urged to submit recommendations. Dan Palumbo is leading an effort to consolidate some specific recommendations. Bo hopes to complete this final report by the end of August 2022.

Newly updated Hall of Honor display wall.

The total bill for the LAA costs of $1,218 will be submitted to the LAA. The total was $1,218.

A nomination for a NASA Group Achievement Award for the team implementing the Class of 2022 will be considered by NASA.

The Final Hall of Honor Report for the Class of 2022 will describe the concept and purpose of the HoH, followed by a brief history of the HoH. The report will describe the nomination process, including the online nomination form. The report also identifies the nominations carried over from 2017.

The report continues with a description of the selection process. It will discuss the preparations for Honoree information and for how the Honorees and/or their families will be notified.

The report will cover how the induction ceremony is publicized and will include a sample press release, plus the process for conducting the Hall of Honor ceremony. Finally, the report concludes with lessons learned and recommendations for future reports.

Attachments will include operating guidelines, sample forms, a list of all HoH classes to day, and software used to convert the online nominations, and program covers and ceremony agendas for the past two classes. ◆

Membership Report

By Mike Marcolini, Membership Chair

I am happy to report that we have now exceeded 200 members! If you're already a member, I strongly encourage you to recruit a friend to join as well. There have been some *excellent* presentations this year.

Also, we are now operating in a hybrid mode, where those wishing to attend on-site may do so, while those of us living remotely can still participate as well. We first did that in the August meeting, and overall, it went quite well.

If you are not yet a member but wish to join, simply go to the LAA website (www.larcalumni.org) and click on the "Join LAA" button on the left-hand side. It will take you to the sign-up page. Note that dues are free for the first year of membership, $10 per year thereafter, or $100 for a lifetime membership. If you have questions, you can email me at larcalumnimembership@gmail.com. ◆

Air Pollution: The Great Paradox

By Domenic Maglieri

From The Daily Mail, Saturday, July 23, 2022, 10 PM

The article referenced below was of interest to me because I had not considered this aspect of "clean air." I guess it gets back to the old adage "You never get something for nothing." I wonder if the Clean Air Act study addressed this issue. The excerpts below are from the original article from The Daily Mail, referenced below.

"The great paradox: Drop in air pollution has INCREASED global warming because clean air does not contain aerosol particles that reflect sunlight and cool the Earth. Current pollution rates are 30 percent lower than in 2000. However, this has led to an increase in warming from carbon emissions. Scientists found there is less haze in the atmosphere to block the sun's radiation. They suggest using solar engineering to launch aerosol particles into the atmosphere in a bid to combat climate change."

"Johannes Quaas, a climate scientist at Leipzig University and lead author of the study, told Science.org that the study was conducted using instruments on NASA's Terra and Aqua satellites, both of which collect data on Earth's atmosphere. These devices also gather intelligence on the radiation coming in and coming out of Earth, allowing the study to understand the increase in infrared heat trapped by greenhouse gases."

See the reference below for details.

Reference:

https://www.dailymail.co.uk/sciencetech/article-11040557/Drop-air-pollution-INCREASED-global-warming-study-reveals.html ◆

Solar Panels to Help Aerobraking?

By Ed Prior

Like many of us, I receive periodic research review magazines from my alma mater (University of Illinois, Urbanna-Champaign). The Aerospace Engineering's 2022 Annual UPDate arrived and an article interested me about using the surfaces of articulated solar cells on a spacecraft to aid in aerobraking at planetary approach for a landing or in orbiting around a body to gain or lose momentum on the way to another planet. Langley has long been recognized as the NASA leader in aerobraking, so I wrote this short article.

The research was done by Professor Zach Putnam and Ph.D. student Giusy Falcone and is in the *Journal of Guidance, Control, and Dynamics* titled "Energy Depletion Guidance for Aerobraking Atmospheric Passes." Per the abstract, "the algorithm includes three control modes to limit heat rate, heat load, or both while attempting to maximize energy depletion."

By taking advantage of the extra drag on the articulating solar cells, the number of orbital passes could be reduced, potentially decreasing the amount of propellant required, reducing the mission duration and risk, and lowering the mission costs. By rotating the solar panels, you can control drag, steer during the atmospheric passes to control heating (most importantly, the solar cells), and aerobrake much faster. Potentially, this concept could lead to aerobraking a spacecraft in a couple of weeks—rather than three to six months.

Langley's own Dr. John Houbolt is in the University of Illinois Hall of Fame, as is Dick Butkus and (regrettably) Hugh Hefner. Despite dozens of letters from Mother, I am not. ◆

Cockroaches and Moon Dust

By Ed Prior

On June 14, we all enjoyed Joel Levine's speech on the problems and challenges of our astronauts dealing with Moon dust and, someday, Mars dust. He is leading the research into this topic, which may require major design changes to space outfits.

An odd article appeared in New Scientist (June 8, 2022) that proves cockroaches have no problem with Moon dust. About 2 kilograms of the Moon rocks the Apollo 11 astronauts brought back were ground into dust at Johnson Space Center and fed to a variety of critters to see what it could do to them. Eight cockroaches gobbled it up. (I hate them; in 1965 I spent four months in a motel in Buckroe Beach and had to watch where I stepped.)

Illustration from the New Scientist article.

The cockroaches, along with the other microbes, aquatic animals, and insect diners, were all fine. Somehow, someone managed to acquire three of the deceased and now pickled cockroaches, and decided to sell them rather than giving them a respectable funeral; they reached over $23,000 in bids on the space memorabilia site RR Auction.

Reference:

https://www.newscientist.com/article/mg25433904-100-last-chance-to-buy-a-pickled-cockroach-full-of-moon-dust ◆

More Photos from the 2022 LAA Picnic

See related article on page 1.

Virginia AeroSpace Business Association (VASBA)

By Jack Schlank

VASBA attendees enjoying the Spring Mixer at the James River Country Club.

Each year the Virginia AeroSpace Business Association's Educational Outreach Committee identifies sponsorship funds for K–12 STEM related activities, and scholarships for students pursuing engineering degrees at both two- and four-year schools. Due to the COVID pandemic, VASBA had to do without two-years' worth of funds for our 2021 STEM contributions, relying on a reserve account and limiting donations to half that of previous years. To jump start the budget for 2022, VASBA held its first annual Spring Mixer this past May. Offered at the beautiful James River Country Club, an outdoor cocktail hour and buffet dinner was hosted on the banks of the James, with smooth jazz provided by a local band led by NASA Langley alum Nick Kepics. Over $1,000 was raised during this first attempt, and feedback made it clear that participants are eager for VASBA to hold another event soon.

Another VASBA event, held this past July, was a site visit to the NASA Wallops Flight Facility. The day started with a tour of the Horizontal Integration Facility where two Antares rockets are being integrated for future launches. We then proceeded on to Rocket Lab's Integration and Control Facility for a tour and presentation including a video introducing the upcoming Neutron rocket. Neutron will be produced at a new Production Complex under construction at the southern end of Wallops Island. That was followed by a tour of the Sounding Rocket Manufacturing, Test and Evaluation Facility. The visit concluded with a luncheon and presentation given by Center Director Dave Pierce.

This fall, VASBA will be part of an Expo hosted in conjunction with the Hampton Roads chapter of Autonomous Unmanned Vehicles International, which includes the annual VASBA Reception and Gala, scheduled for September 29. During the reception, we will also recognize NASA Langley's 105th Anniversary. Our Gala dinner Keynote Speaker, Dr. Thomas Zurbuchen, is NASA's Associate Administrator of Science and in that role is responsible for NASA's Science program, including Earth Science, Heliophysics, Planetary Science, and Astrophysics with a total budget of approximately $7B per year. With this program and a diverse set of leaders, he is helping answer some of humanity's biggest questions: Where did we come from?, Are we alone?, and How does the universe work? Growing up in Switzerland, Dr. Zurbuchen was a keen observer of the natural world from an early age and received a public education with masters and doctorate of physics degrees from the University of Bern. His science and leadership career focused on solar, heliospheric, and planetary instrumentation and data analysis as a professor at the University of Michigan in Ann Arbor, where he taught in space science, aerospace engineering, and innovation-focused classes. He led several University of Michigan innovation initiatives in both education and research, one of which led to the top-ranked undergraduate entrepreneurship program nationally. He joined NASA in 2016. His honors include induction as a member of the International Academy of Astronautics and the Swiss Academy of Engineering Sciences, a NASA Outstanding Leadership Medal, and the 2018 Heinrich-Greinacher prize from the University of Bern. Dr. Zurbuchen engages people worldwide with NASA's work and the inspiration of science. He can be found on Twitter at @Dr_ThomasZ.

The Nick Kepics Jazz Band entertaining Spring Mixer guests.

Finally, VASBA has recently become a member of the Virginia Space Grant Consortium (VSGC). After many years of successful teaming between the two organizations, the VSGC Board of Directors voted in VASBA this past May. We look forward to an even more mutually beneficial relationship between the two organizations going forward. ◆