GRAA NEWSLETTER

P.O. Box 1184, Greenbelt, MD 20768-1184

***April* 2025 https://GoddardRetirees.org 41st Year of Publication**

UPCOMING LUNCHEONS: We meet at 11:15 AM on the 2nd Tuesday of each month at the American Legion Post #136 at 6900 Greenbelt Road. **Reservations are required;** please contact graalunch@gmail.com (preferred) or call (410)-709-8889 **before Thursday, April 3rd.**

April 8		**Dr. Jeremy Werdell,** Project Scientist NASA Goddard **"Life after launch: A snapshot of the first year of the NASA Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission"**
May 13		**Dave Pierce,** Director NASA's Wallops Flight Facility **"Update from Wallops Flight Facility"**

COMMENTS FROM TONY COMBERIATE AND CARL STAHLE

Our March speaker was **Dr. Mehdi Benna,** Principal Investigator for the **Lunar Environment Monitoring Station for Artemis III (LEMS-A3)** from the University of Maryland, Baltimore County and resident at NASA Goddard for 24 years. Mehdi gave a fascinating and entertaining presentation describing the LEMS-A3, which is a compact, autonomous, and self-sustaining geophysical instrument package that enables multi-year**,** in-situ monitoring of the Moon's seismic environment. Although the Artemis III mission will have people on the Moon's surface for up to 5 days, the LEMS-A3 will provide seismic data for years. The Apollo astronauts took 3 days to hook up instruments which only lasted for days. The fully autonomous LEMS-A3 can be turned on after a very short set-up period and will conduct science observations continuously during the day and night. It will characterize the Moon's seismicity and its internal structure using Short Period (SP) and Broad-band (BB) seismometers. Seismology requires long-term observations of geophysical processes that operate at local and global scales. LEMS-A3 can detect Moonquakes, impacts from meteoroids, and astronaut activities by measuring event timing and amplitude in data to determine event location and magnitude from a single station.

LEMS-A3 is powered by self-sufficient photovoltaic cells, which generate power during daytime and a high-efficiency battery which sustains operations at night. The Apollo missions had used power from Radioisotope Thermoelectric Generators (RTGs), which can no longer be used for human spaceflight due to safety concerns, so LEMS will use batteries which can be easily

charged by the instrument's solar panels. It is thermally self-sufficient with no external heaters or active thermal dissipators to survive the hot lunar days or cold nights, which vary from -203°C (-334°F) in permanently shadowed craters to 54°C (130°F) in sunlit regions. The seismometers are geophones operating as a force-limited, spring-mass system with a laser interferometric displacement sensor capable of detecting pico-scale motions in 3-dimensions (The Apollo seismometers measured in 1 dimension.) They will be buried and snuggly fit in a cored hole for a smaller 10 deg °C temperature variation and improved seismic coupling to the lunar regolith.

The LEMS-A3 investigation will be the first crew-delivered lunar geophysical instrument since 1972 and will deliver compelling science to Artemis III with innovative technology that leverages several years of technology maturation for the spacecraft-like bus (without propulsion and navigation) and the seismometers. The Moon's surface is one of the least characterized environments in the Solar System.

Dr. Benna started this effort 6 years ago and was given access to the extensive logs from the Apollo missions, which gave him the insight to see the limitations of 1970's technology and design a small suitcase (34 cm x 88 cm x 43 cm) that can safely be carried on board and easily carried and set up. He incorporated some of the technical solutions which worked well in Apollo missions such as a bubble leveler and a sun dial to position the hardware on the lunar surface. He brought a high-fidelity hardware model of LEMS-A3 to our luncheon to demonstrate the design and operation. This model will be used to train the Artemis III mission astronauts for its operation on the Moon.

Request for Docents for NASA's Earth Information Center

We also heard from Nicole Ramberg-Pihl who described the NASA's Earth Information Center, which operates exhibits and conducts tours at NASA HQ, the Kennedy Space Center Visitor Center and the Smithsonian National Museum of Natural History. The Earth Information Center at NASA HQ hosts interested visitors, data from the latest Earth Science missions, and engages the broader NASA community. Visitors from all walks of life are given guided tours or self-guided tours which feature a Hyperwall, a Space for Immersive Experience, and Interactive Kiosks. Direct data feeds from all of NASA's active Earth Science Mission are available and highlight applications that are used to improve lives around the world. Tours (30 – 60 minutes) are scheduled year-round and are led by two docents. Volunteer docents receive training onsite**. If you are interested to become a docent, please contact:**

Eleanor Stokes, Program Manager, eleanor.stokes@nasa.gov
Or
Nicole Ramberg-Pihl, Project Manager, nicole.c.ramberg-pihl@nasa.gov

GRAA is on Social Media

With the encouragement of Dr. Makenzie Lystrup, Goddard's Center Director, GRAA has extended its reach to social media. We are now on LinkedIn which is the world's largest professional network. Members can visit linkedin.com and search for NASA Goddard Retirees and Alumni Association. You are welcome to be a follower of this group.

WELCOME TO NEW MEMBERS:

GRAA is delighted to welcome the following new members who have joined GRAA in the past month:

Barry Green
Christina Hsu
Jane Hardman
Marla Harrington
Teresa James
Elizabeth Jarrell
Jeffrey Jaso
Wendy Morgenstern
Ken Segal

ACTIVITIES FOR MEMBERS:

Jan Kalshoven, one of GRAA's board members, became the president of what is now called the Goddard Tennis and Pickleball Club (GTPC) this past year. There are no fees to play at the Goddard Tennis complex which now has lines and a rollable net for pickleball (Access to the center is by showing your Goddard retiree badge as you drive in). Courts are open to all, but if you want to join GTPC and get on WhatsApp and TeamReach to find other Goddard players, send an email to Kalshoven@gmail.com.

WHAT'S UP WITH OUR MEMBERS:

We are starting a new section in our monthly newsletter for members to give us short updates on their lives since retirement from Goddard and federal service. We thought your colleagues would enjoy hearing about your life experiences after Goddard before they see your name in our "Remembering Our Former Colleagues" section. News of interest to our members could be professional, volunteer activities, awards and recognition, a personal achievement, or an unusual adventure or hobby. Please feel welcome to send a concise message (<100 words) to Tony Comberiate (abcomberiate@verizon.net) and Carl Stahle (carl.m.stahle@gmail.com) who reserve the right to edit for content and length. Here are some examples to get us started:

Semion Kizhner retired from Goddard in January 2017. He worked as Emeritus and had a summer student. He has published 3 books in retirement: *On the Island* which has 100 English poems, *Aerodromes of the Heart* which has 33 Russian English poems, and *I Lived* which is his life story of change from a Holocaust survivor to working in a space program control center. The books are available on amazon.com.

Carl Stahle retired from Goddard in March 2023. He has enjoyed staying connected to the Goddard community through attending the GRAA luncheons and now serves as VP for GRAA in charge of organizing the speaker's program for the monthly luncheons. He has volunteered as a course marshal for the Goddard Fun Run and on Red Team Reviews for proposals. He served as an Election Judge in Anne Arundel County, Maryland in 2024. He has enjoyed some good travel adventures and is active in the Catholic community in Severna Park.

Harley Thronson: As retirement approached, I remembered, "If you want to make God laugh, make a plan." Ignoring that, I planned in detail to volunteer throughout the DC area: Smithsonian Museums and my neighborhood (Old Town Alexandria). I continued planning and confidently purchased suitable "docent clothes," nurse-recommended shoes for standing long hours, etc. I trained for months. But God laughed when COVID arrived, and public-facing institutions closed just as I "graduated" from training, ending volunteer work in the DC area and crushing my plans for retirement. Fortunately, when I contacted my former NASA teams, they readily invited me back, especially as I no longer required a salary.

DIRECTORIES AND NEWSLETTERS: Send your email address to goddardretirees@gmail.com to get our monthly Newsletters**,** which include synopses of the talks, special community announcements, and obituaries. Past Newsletters and links to videos of the talks are on our website https://goddardretirees.org. Multi-month abstracts of Newsletters are mailed to the retirees with only residential addresses in our files. We depend on retirees to furnish their home addresses to be listed in the biennial GRAA Membership Directories, only available as a mailed hardcopies to members. These mailings are supported by donations to GRAA, P. O. Box 1184, Greenbelt, MD 20768-1184.

TREASURER'S REPORT: Treasurer Jackie Gasch received a donation from Keiji Tasaki

FROM THE GODDARD ARCHIVES: On April 24, 1990, Shuttle Discovery STS-31 launched the Hubble Space Telescope. After 35 years, it is still conducting daily science observations with four operating instruments: WFC3, COS, ACS and STIS.

REMEMBERING OUR FORMER COLLEAGUES:

Sherill Wayne "Bill" Billingsley, 85, died peacefully on March 15, 2025, in Olney, Maryland. Bill was born in Vandalia, Illinois, on March 25, 1939. He was a world-renowned expert in magnetics engineering, who made groundbreaking contributions to the field. Over his distinguished career with Goddard, he also worked for NOAA, and Billingsley

Magnetics/Aerospace. His designs profoundly impacted satellite technology, enhanced military defense systems that protect troops, aircraft, submarines, ships, and harbors, and advanced geophysical exploration and magnetic silencing facilities worldwide. Bill was the third of six children. His family lived in various locations across the United States and Canada, but he always considered Casper, Wyoming, his hometown-where he built lifelong friendships and experienced his most cherished adventures. A celebration of life will be held on Sunday, April 6th 2025 at 12:00 PM at 17921 Brooke Rd, Sandy Spring, 20860. A reception will be held at 12:30 PM at the same location.

Charles Larimer "Larry" Costolo, 61, of Eldersburg, Maryland died on February 26, 2025, at the University of Maryland Medical Center from an unexpected health event on February 26, 2025. Larry was born on May 25, 1963, in Lanham, Maryland. After high school, Larry went to work at Goddard where he met Kim Langis in 1982; they married in 1987. When his father died in 1996, Larry took over management of his father's firm, CLC Associates and later became a 911 dispatcher for Howard County Police & Fire in 2016.

Charles L. Dunfee, 92, died on March 5 in Upper Marlboro, MD. Chuck was born on February 19, 1933, in Powhatan Point, Ohio. Chuck graduated from Powhatan Point High School and joined the United States Air Force at 17, where he served honorably for four years, including deployment to Korea. In 1964, Chuck began an illustrious career at Goddard where he rose to the rank of Senior Executive. His dedication and innovation were recognized through a Presidential Rank Award for the development of cost-plus award fee contracting, a system that is now utilized widely in government. Chuck retired from NASA in 1994.

Ronald Willis Ferger, 85, of Gainesville, Florida, died on March 9, 2025, surrounded by his family. He was born on January 21, 1940, in Cincinnati, Ohio and served in the Navy for four years before joining Goddard as an electronics engineer during the Apollo space missions.

Keith Alan Kienzle, 65, died on February 20, 2025, at his home in Odenton, Maryland. Keith was born on September 14, 1959. He was a father to three children, Kory, Amber, and Kyle. Keith's career began as a plumber, which led him to Goddard, where he excelled as a Senior Lead Electrical Technician. During his tenure at NASA, Keith contributed to numerous projects including Hubble Space Telescope, EO-1, GPM, GEDI, ILLUMA-T, MOMA, and CCRS. He took immense pride in his work and was highly regarded for his technical expertise.

Richard W. Sewart, 87, died on November 18, 2024, at his home in Columbia, Maryland. He began his professional career as a research scientist in 1967 at the Goddard Institute for Space Studies in New York, transferring to the Upper Atmosphere Branch, Goddard Laboratory for Atmospheric Sciences in 1978, retiring in 2009, after a 42-year career researching and teaching atmospheric physics.

Stephanie "Steph" Ann Stockman, 64, died on March 6, 2025, at La Casa Assisted Living, in Annapolis, Maryland. Steph was born in Baltimore, MD, on September 14th, 1960. After

receiving a Master of Science Degree from the University of Maryland College Park, she began her NASA career at Goddard and later worked at NASA Headquarters. Steph eventually led the educational outreach program for NASA Earth and Space Sciences Directorate, preparing materials and training science teachers throughout the country. Steph was active on social media promoting NASA's programs under the name Geosteph, reflecting her undergraduate degrees in geology.