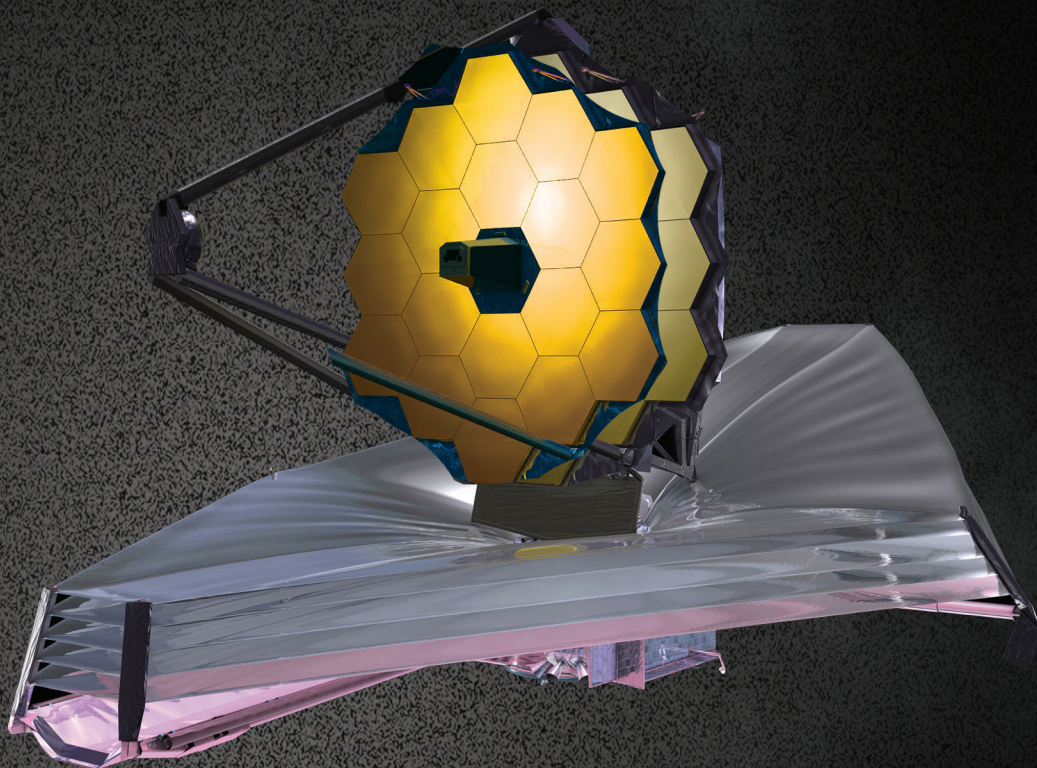


National Aeronautics and Space Administration



2021

Administrator's Agency Honor Awards

U N F O L D T H E U N I V E R S E

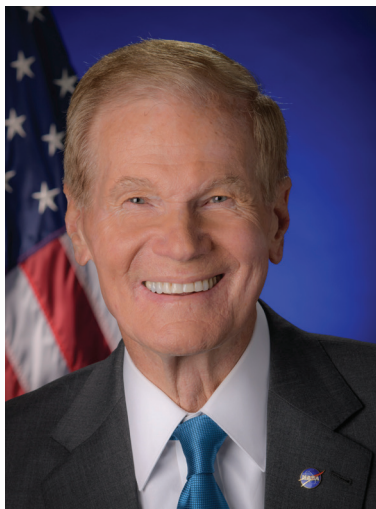


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SPACE TELESCOPE



Foreword

Message from the NASA Administrator 2021 Administrator's Agency Honor Awards



NASA continues to deliver on our promise to the American people. Our success is the direct result of the outstanding work and talent of each member of the NASA workforce. It is a privilege and a pleasure to recognize outstanding individuals whose work, dedication, and leadership enabled such remarkable achievements.

NASA is the world's premier space agency, but we are also a tight-knit family. Together, we accomplished many inspiring and groundbreaking missions in 2021 – even as COVID-19 continued to challenge humanity. Amongst the greatest accomplishments is sustaining a culture of teamwork and unity that has long defined this agency and paved the way to our successes.

The NASA family continues to inspire future adventurers, scientists, and engineers through STEM engagement programs. We continue to develop cutting-edge technologies and confront climate change. We continue to advance aviation technology to make our skies safer and aircraft more sustainable, all while getting passengers to their destinations more quickly. We continue to push the boundaries of space exploration through science missions with spacecraft, satellites, rovers, and more.

We are poised to venture farther into the cosmos for the benefit of all humanity. Artemis I will soon launch using the Space Launch System and the Orion spacecraft, paving the way for future lunar missions and our goal of landing the first woman and person of color on the Moon. From the James Webb Space Telescope to Perseverance and Ingenuity, our success would not have been possible without your dedication to our shared mission.

This special ceremony is a time for us to recognize the individuals being awarded NASA's highest honors from across our agency. Each individual we recognize exemplifies the values of our agency to do the unthinkable and represents the American character through a commitment to service. They inspire fellow members of the NASA family and the next generation – the Artemis Generation.

To everyone we honor today: Thank you for strengthening our agency. Thank you for serving our country. And thank you for everything you have done and everything we will accomplish together.

Onward and upward!

Bill Nelson

Administrator's Agency Honor Awards

*Distinguished
Service Medal*

*Distinguished
Public Service Medal*



Program

| | |
|--|---|
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| Remarks and Introduction of Medal Presentation | Pam Melroy <i>NASA Deputy Administrator</i> |
| Presentation of Distinguished Honors by Center | |
| Ames Research Center | Dr. Eugene L. Tu <i>Center Director</i> |
| Armstrong Flight Research Center | David D. McBride <i>Center Director</i> |
| Goddard Space Flight Center | Dennis Andrucyk <i>Center Director</i> |
| Jet Propulsion Laboratory | Larry D. James <i>Interim Director</i> |
| Johnson Space Center | Vanessa E. Wyche <i>Center Director</i> |
| Kennedy Space Center | Janet Petro <i>Center Director</i> |
| Langley Research Center | Clayton P. Turner <i>Center Director</i> |
| Marshall Space Flight Center | Jody Singer <i>Center Director</i> |
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| Closing Remarks | Gregory L. Robinson <i>James Webb Space Telescope Program Director</i> |

Distinguished Service Medal

This is NASA's highest form of recognition that is awarded to any Government employee who, by distinguished service, ability, or vision has personally contributed to NASA's advancement of United States' interests. The individual's achievement or contribution must demonstrate a level of excellence that has made a profound or indelible impact on NASA mission success, and therefore, the contribution is so extraordinary that other forms of recognition by NASA would be inadequate.



Dr. William P. Barry
Lynn E. Buquo
Josephine B. Burnett *
Dr. Joan M. Centrella
William M. Cirillo
Sharon C. Conover
Dr. James H. Crawford
Erik C. Denson
Dr. James L. Green
David A. Herda
Thomas J. Horvath
David Jarrett
Carl P. Jones *
Stephen G. Jurczyk *
Dr. Jack A. Kaye
Ginger Kerrick
Dr. Caroline A. Kilbourne
James T. Lawrence
David A. LeDoux *
Ricardo A. Machin
Roy W. Malone *
Cathy H. Mangum *
Monica Y. Manning *
Dr. Paul K. McConnaughey
James W. Morhard *
Altonell L. Mumford *
Dr. Ramakrishna R. Nemani
Melanie W. Saunders
Gabe Sherman *
Mark A. Skoog
Dr. H. Philip Stahl
Patrick C. Stoliker
Dr. David A. Tipton
Bobby J. Watkins
Dana J. Weigel
Dr. Gloria K. Yamauchi
Dr. Thomas H. Zurbuchen

* The Agency Honor Award was awarded between June 2, 2020, and December 31, 2021, outside the normal awards cycle.

Distinguished Public Service Medal

This is NASA's highest form of recognition that is awarded to non-Government individuals or to an individual who was not a Government employee during the period in which the service was performed, whose distinguished service, ability, or vision has personally contributed to NASA's advancement of United States' interests. The individual's achievement or contribution must demonstrate a level of excellence that has made a profound or indelible impact to NASA mission success; therefore, the contribution is so extraordinary that other forms of recognition by NASA would be inadequate.



Dr. Charles A. Beichman
Dr. John M. Blaisdell
Colonel Robert P. Bongiovi
Dr. James L. Burch
Frank DeMauro
Dr. Margaret A. Frerking
Dr. Fuk K. Li
David Parker
Lawrence L. Takacs
Johann-Dietrich Wörner *
Dr. Laurence R. Young

** The Agency Honor Award was awarded between June 2, 2020, and December 31, 2021, outside the normal awards cycle.*

Presentation of Awards by Center

Click the name to be directed to the Honoree page, and the Home icon to return to this page.

Ames Research Center

Dr. Ramakrishna R. Nemani
Dr. Gloria K. Yamauchi

Armstrong Flight Research Center

Mark A. Skoog
Patrick C. Stoliker

Goddard Space Flight Center

Dr. John M. Blaisdell
Dr. James L. Burch
Dr. Joan M. Centrella
Dr. Caroline A. Kilbourne
David Parker
Lawrence L. Takacs

Jet Propulsion Laboratory

Dr. Charles A. Beichman
Dr. Margaret A. Frerking
Dr. Fuk K. Li

Johnson Space Center

Lynn E. Buquo
Sharon C. Conover
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Dr. Laurence R. Young

Kennedy Space Center

Colonel Robert P. Bongiovi
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William M. Cirillo
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NASA Headquarters

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Dr. Jack A. Kaye
Altonell L. Mumford
Melanie W. Saunders
Johann-Dietrich Wörner
Dr. Thomas H. Zurbuchen

*Distinguished
Service Medal
Recipients*





Distinguished Service Medal

Dr. William P. Barry

For superior performance as NASA's Chief Historian, Dr. Barry's diverse, highly distinguished career has contributed greatly to NASA's mission through his dedicated service.

Dr. William (Bill) Barry served as the NASA Chief Historian and head of the NASA History Division from 2010 until July 2020. After a distinguished career as an Air Force officer, he joined NASA's Office of International and Interagency Relations in 2001, serving as its Russian desk officer and then European representative. Before retiring in July 2020 as Chief Historian, he supported NASA leadership and oversaw the professional acquisition, analysis, and dissemination of historical information.

Dr. Barry is a superb manager and public servant. He understands that people are always the greatest Government resource and is excellent at recognizing the strengths of each individual and making the most of their abilities. He fully supported staff members on career-enhancing details, quietly submitted winning award nominations for their work, and encouraged staff work-life balance.

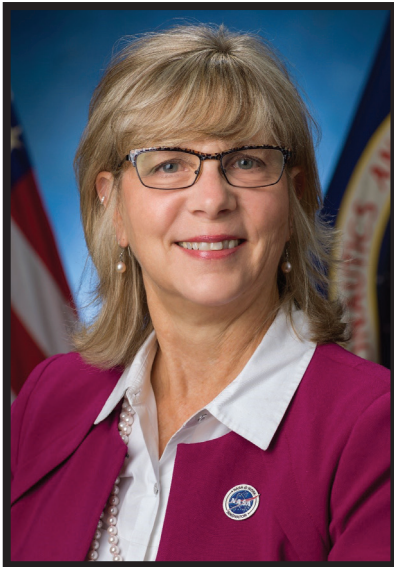
Dr. Barry provided sound historical advice to personnel at all 10 Centers and in virtually all Headquarters organizations. He ably led the Agency-wide History Program through challenging times of budget contractions, the Mission Support Future Architecture Program (MAP), and a rapidly changing digital environment.

At the onset of the Coronavirus Disease 2019 (COVID-19) pandemic, he immediately prioritized the health of his staff and continued NASA History Division operations without missing a beat. He oversaw the NASA Historical Reference Collection including a team of three professional archivists, three other permanent staff, and numerous undergraduate and graduate interns. Dr. Barry ably set priorities for the History Division such as staging annual conferences, overseeing the NASA History Series of publications, answering information requests from NASA and the public, and maintaining a large and thorough History web presence. He also championed NASA History's early presence on social media, which grew tremendously under his leadership.

An articulate and highly engaging public speaker, Dr. Barry graciously agreed to be interviewed frequently by journalists. He also was a sought-after speaker at many professional historical and NASA conferences, workshops, meetings, and webinars. He worked tirelessly behind the scenes of multiple high-profile Hollywood movies such as "Hidden Figures" and "First Man," carefully reviewing scripts, answering detailed questions for the producers and directors, and explaining historical context.

He also took an active Agency leadership role in high-profile anniversaries such as the 50th anniversary of the Apollo 11 mission. He spent untold hours carefully planning, coordinating, and executing with multiple other NASA offices this highly visible and tremendously successful set of activities in July 2019, from public displays on the National Mall to speaking on camera for televised events, achieving one of the fundamental tenets of the National Aeronautics and Space Act of 1958, to "provide for the widest practicable and appropriate dissemination of information concerning [NASA's] activities and the results thereof."

A multitasking individual, Dr. Barry flew tanker airplanes for the Air Force, retiring as a lieutenant colonel, and now is teaching civilians how to pilot glider aircraft. While in the Air Force, he received a Doctorate in Philosophy from the University of Oxford, writing a dissertation about Soviet space bureaus in the 1960s that won a prestigious manuscript award. He also taught political science at the Air Force Academy.



Distinguished Service Medal

Lynn E. Buquo

For outstanding innovation, accomplishments, and leadership in establishing NASA's Center of Excellence for Collaborative Innovation.

Ms. Lynn Buquo has provided an extraordinary level of service, support, innovation, and leadership throughout her career at NASA. She serves as the lead of NASA's Center of Excellence for Collaborative Innovation (CoECI) and has done an exceptional job establishing and expanding this important Agency function throughout NASA and on to other Federal agencies.

Ms. Buquo has demonstrated exceptional and innovative leadership since CoECI and the NASA Tournament Lab (NTL) were established in 2011 at the request of the White House Office of Science and Technology Policy. As the inaugural program manager, she laid the foundation for success during both the "startup" and the "scale up" phases. Due to her tireless efforts, the NTL enables NASA to tap the vast creative potential of more than 70 million people across the world through open innovation in the form of crowdsourcing. CoECI also manages NASA@WORK, an Agencywide virtual platform that seeks to increase innovation by fostering collaboration within NASA.

As the driving force for open innovation and crowdsourcing at NASA, she broadened this benefit beyond the Agency by making CoECI's expertise and its suite of 18+ contracted platforms available to innovators across the Federal Government. She established the centralized contract vehicles that provide rapid access to over a dozen crowdsourcing vendors for both NASA projects and other Government agencies. Ms. Buquo advanced open innovation research through academic partnerships and led the implementation of more than 300 challenges both for NASA programs and projects and dozens of other Federal Agencies, 92% of which met or exceeded expectations for technical solutions and 80% reporting a cost savings as a result. NASA@work, focused on internal challenges, has conducted 120 challenges since 2010 with 87% successful solutions.

Under Ms. Buquo's leadership, CoECI awarded 10 contracts under the NASA Open Innovation Services (NOIS) procurement, a significant milestone in applying a traditional procurement mechanism in a novel way to form a foundation for expanded use of challenges across the Government. The follow-on contract, NOIS2, continues to provide a robust yet competitive mechanism to expand the number, variety, and skill sets available to continue to mature the successful use of challenges. The NTL is now instantiated as a significant partner in the work of NASA and other agencies such that the NOIS2 contract ceiling will increase from \$25 million to over \$100 million to support the demand across the Government.

Ms. Buquo and the CoECI team have worked alongside the U.S. Patent and Trademark Office, the Centers for Medicare and Medicaid Services, U.S. Agency for International Development, Office of Personnel Management, Department of Energy, Environmental Protection Agency, the National Science Foundation, and the Department of Veterans Affairs (VA), among others, to assist them in how best to apply the use of challenges.

In the past year alone, CoECI has over 75 active crowdsourcing projects: 52 of which are NASA and 23 in support of 14 other agencies. Due to her leadership and vision, CoECI and the NTL is now recognized as a highly valued capability that can accelerate and expand NASA's mission and the mission of other agencies. As a direct result of her work, NASA and other Federal agencies have achieved innovative solutions to dozens of problems quickly and with cost savings in the millions of dollars over conventional development methods.



Distinguished Service Medal

Josephine B. Burnett

For outstanding leadership and accomplishments to multiple mission directorates and programs to further the Nation's goals in space.

Ms. Josephine Burnett has led an impactful career with NASA, spanning over 33 years and including support to multiple mission directorates and significant programs and projects. Her creativity, resilience, and adaptive leadership style have enabled her to contribute to NASA's advancement of United States interests.

Ms. Burnett began her career with NASA in 1987 as an aerospace/mechanical engineer. In 1993, she became payload test director and was responsible for overseeing shuttle payload testing. Joining the Space Station Hardware Integration Office in 1996, she oversaw the Space Station Remote Manipulator System in Canada as Acting Chief of the Element 6A Office, and continued her leadership as Chief of the Future Missions and International Partner Division in 2000. When she became Deputy for Program Management in 2003, she supported the development of organizational roles and responsibilities and development of long-range direction for Kennedy Space Center (KSC) and ISS Program needs. Ms. Burnett's commitment to achieving excellence continued in 2006, when she joined the Executive Service. As Chief, Mechanical Engineering Division, she transformed the Engineering Directorate into a multiprogram, discipline-centric organization, the first consolidated engineering organization in KSC history. As Deputy Director, Constellation Space Transportation Office, she established a new KSC organization that became the foundation for what is now the Commercial Crew Program. Further, she led the ISS team through the retirement of the Space Shuttle Program and assembly of the ISS as Director, ISS Ground Processing and Research.

Ms. Burnett's role expanded significantly when, through a Center reorganization, her directorate was restructured to be the Exploration Research and Technology Programs (ER&T). As Director of ER&T, she resolutely advocates for programs across multiple mission directorates including the Human Exploration and Operations, Space Technology, and the Science Mission directorates. Ms. Burnett has forged a path that blends innovation with operational practicality, and has focused on strategically managing human, financial, and material resources, ensuring that all programs and projects are planned and integrated in alignment with Center and Agency objectives. She leads over 400 civil service and contractor employees and executes a \$111 million annual budget spanning 5 Agency programs and 18 research and technology activities.

Ms. Burnett's superior abilities and strong reputation for fostering partnerships was demonstrated when she initiated the transformation of KSC into a multiuser spaceport. She successfully brokered the original 2016 agreement between KSC and the ISS Program to lease excess capacity to space companies and make ISS resources available for commercial use. This resulted in a significant event for the ISS Program and the Agency, enabling Orbital ATK use of KSC facilities and assets to launch three of its commercial resupply missions after its launch pad at Wallops Flight Facility was destroyed.

The model developed by Ms. Burnett has proven highly successful, and as a direct result of her superior efforts, KSC is now a host for a number of commercial and international spacecraft providers. To date, Ms. Burnett has initiated 35 active partnership agreements spanning various universities, Federal Government agencies, and commercial providers to advance KSC's research and technology maturation.



Distinguished Service Medal

Dr. Joan M. Centrella

For a distinguished career of outstanding service to NASA, through scientific accomplishments and inspired leadership.

Dr. Joan Centrella retired from NASA in October 2019, after two decades of exceptional scientific productivity and leadership within NASA, primarily within the Goddard Space Flight Center (GSFC) Astrophysics Science Division (ASD).

Dr. Centrella was recruited to GSFC from a tenured faculty position to lead a team that was developing the science and performance requirements for the Laser Interferometer Space Antenna (LISA). She became Chief of the newly formed Gravitational Radiation Laboratory and subsequently Deputy Director and Acting Director of ASD.

Dr. Centrella is foremost a world-class astrophysicist. She was a numerical relativist, studying via computer simulation the conditions inside intense gravitational fields as might be found near a black hole. She earned a worldwide reputation for research into highly non-linear phenomena caused by general relativity. She was the first scientist to successfully simulate the merger of black holes in a binary system and predict the gravitational wave signature (the “chirp”). Her predictions were verified in dramatic fashion with the Nobel Prize-winning Laser Interferometer Gravitational-Wave Observatory detection of gravitational radiation from merging stellar-mass black holes. They now form the basis for the design of the LISA.

Dr. Centrella has been honored with numerous awards for her accomplishments, including GSFC’s John T. Lindsay Memorial Award in 2008. She was an author of approximately 54 refereed papers and 140 total, with one paper cited over 800 times. As Chief of the Gravitational Radiation Lab, Dr. Centrella recruited a talented group of scientists whose research laid the groundwork for the LISA concept. Her group pioneered the design of the highly precise telescope and ultrastable laser needed to meet the LISA science requirements. She and her group led the mission studies and the advocacy that resulted in LISA being recommended by Astro2010 and ultimately being selected as a mission led by the European Space Agency.

As ASD Deputy Director, Dr. Centrella worked tirelessly to improve processes leading to organizational success and improved quality of life. She reorganized and led the division’s line of business group, introducing a process where all stakeholders were represented and decisions were reached by consensus. The result was a string of successful proposals from ASD, including GEMS, Astro-H, PRAXyS, and NICER. She was a passionate advocate for astrophysics to Center leadership and made sure that ASD’s high success rate was widely appreciated. During details to NASA Headquarters, Dr. Centrella led critically important strategic work, including preparation for the NASA Astrophysics Roadmap used to formulate the 2020 Decadal Survey of Astronomy and Astrophysics, and preparatory work for the 2020 Decadal Survey.

She played a key role in the development of NASA’s next generation of science leaders through her selfless advocacy and sage advice and was a champion for workplace diversity and inclusion. She performed a landmark study of the demographics of participants in astrophysics explorer calls that revealed a severe gender imbalance, which has persisted to the present day. Her study was welcomed by SMD leadership and forms a cornerstone upon which reforms addressing gender imbalances are based. Dr. Centrella played a vital role in making the GSFC ASD a highly successful and inclusive organization, where all are treated respectfully and fairly and where people want to work.



Distinguished Service Medal

William M. Cirillo

For distinguished service in enabling Agency leadership to make highly effective, informed decisions utilizing sophisticated, state-of-the-art systems analysis capabilities.

For 38 years, Mr. William Cirillo has advocated for and led strategic analysis efforts that have significantly affected NASA's mission by reframing perceptions and expectations and informing changes that significantly improve costs and mission success, benefiting our astronauts, NASA, and

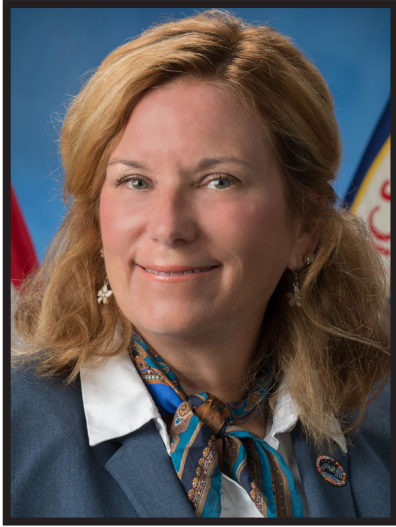
the Nation.

He initially supported the design, analysis, and planning for Space Station Freedom and the ISS. This included leading an assessment to quantify risks of using existing Russian orbital assets for ISS that was used in negotiations with Russia to argue against using Mir as its baseline contribution. Following the loss of Space Shuttle Columbia, Mr. Cirillo led assessments to determine ISS cargo delivery requirements and transportation system robustness in the event of another shuttle loss to inform Orbital Space Plane requirements. In 2005, he served as a formal member of the Exploration Systems Architecture Study, including leading analysis to determine the likely number of shuttle flights achievable by end of 2010, an estimate found later to be highly accurate. These analyses were leveraged by the Administrator to negotiate with the Executive Branch to secure five additional shuttle flights to the ISS.

Over the next 5 years, he led campaign analysis efforts for the Agency's Lunar Architecture Team, leading development of the NASA's premier campaign analysis capability, developing a unique system that allows Agency decision makers to rapidly assess exploration campaign options inclusive of performance, benefit, cost, risk, and robustness in both deterministic and probabilistic manners. This capability has been used as part of every major exploration study conducted since. These efforts culminated in Mr. Cirillo serving as the Scenario B lead for the Review of U.S. Human Space Flight Plans Committee "Augustine Commission," reporting directly to the Commission's Systems Analysis lead.

Mr. Cirillo was then asked to support the Human Exploration Framework Team, leading efforts to provide an integrated assessment of architecture alternatives as the Agency formulated its long-term exploration strategy. Several years later, Mr. Steve Jurczyk, then Associate Administrator (AA) of the Space Technology Mission Directorate (STMD), recruited Mr. Cirillo to lead creation of a strategic framework for STMD. He leveraged strategic lessons learned and best practices from the Aeronautics Research Mission Directorate to develop a custom solution for STMD that is being integrated into its programmatic planning and has been credited by its last two AAs as significantly improving communication with the Executive and Legislative branches.

Mr. Cirillo is leading analysis efforts within the Crew Health and Performance and Environmental Control and Life Support systems communities, placing their current and planned system investments in the context of the Agency exploration plans to quantify their value, assess detailed systems trades, and inform test planning. This effort quantified for the first time the value of ISS to reduce the overall risk to the crew for future exploration activities and inform ISS payload planning. Mr. Jurczyk, then Acting Administrator, noted Mr. Cirillo's "leadership and technical expertise have been critical in enabling Agency leadership to make highly effective, informed decisions on strategic implementation planning, mission architectures, technology planning, and mission planning utilizing sophisticated, state-of-the-art systems analysis capabilities."



Distinguished Service Medal

Sharon C. Conover

For extraordinary service, dedication, and visionary leadership in Program, Acquisition, and Partnership management for every NASA human space flight program since Apollo-Soyuz.

For over 46 years, Ms. Sharon Conover has played an instrumental role in establishing continuous human space flight capability in the United States (U.S.). Her exemplary service has enabled spacecraft to not only fly in space, but to become platforms for technological and economic development.

Ms. Conover began her aerospace career in 1974 working for McDonnell Douglas on the Apollo-Soyuz Test Program in the Flight Crew Operations Directorate at NASA Johnson Space Center (JSC). In 1979, she joined JSC as an aerospace engineer serving as a Space Shuttle Crew Trainer on STS-1 and then as a Front Room Payloads Flight Controller until STS-50. She was asked to transform her experience with conducting science on the orbiter to a developmental role in the early ISS Program. In 1993, Ms. Conover joined the ISS Program Office as the Payloads Integration and Operations Manager. She was responsible for management and oversight of ISS personnel, hardware, and facilities at three NASA Centers, and was an early leader and liaison across the ISS partnership. She negotiated crew time agreements and all matters related to payloads, including hardware development, barter, and operations valued at in the hundreds of millions of dollars. She also managed development of all ISS multi-use payload hardware, personnel, and facilities across the Agency and the partnership.

Ms. Conover then leveraged her development experience and transitioned from research-based utilization to technology commercialization, leading the push for industrywide commercialization efforts within the Program. She developed the baseline ISS commercialization plans and negotiated unique NASA Space Act Agreements with commercial and nongovernment agencies for a wide range of human space flight initiatives, including the Space Flight Participant program, use of IMAX video on ISS, and cooperative use agreements with Johnson & Johnson and other giants of American industry.

While carrying this strategic portfolio, Ms. Conover never abandoned her focus on the tactical mission of the Agency's human space flight missions. Her ability to think through problems from first principles and to fight for what is right was illustrated in the days following the loss of the Columbia crew. In the hours after the accident, she provided compelling external voice and video data to suggest that Columbia had begun to break up during reentry over the U.S. along the STS-107 ground track. These efforts led to groundbreaking work for all entry ballistic breakup trajectory analyses and tracking system searches.

Further, Ms. Conover has advanced the idea that the ISS is the model for exploration, commercial development, and international cooperation. She managed the vast business portfolio of the ISS Vehicle Office during the completion of ISS assembly. She was instrumental in the first major procurement activity of the Commercial Resupply Services Program, bringing the American launch vehicle industry back. She managed the ISS Research Office and led the Program-wide effort to Revolutionize the ISS for Science and Exploration (RISE). Today, she is leading the charge to enable a true transition of ISS to a commercial platform, where NASA is one of many customers for a burgeoning low-Earth orbit (LEO) economy, serving with distinction as the ISS Vehicle Office Acquisition Manager for the Commercialization of LEO and Human Space Flight Habitation Demonstrations on the ISS.



Distinguished Service Medal

Dr. James H. Crawford

For sustained distinguished service, leadership, and scientific contributions to NASA's Tropospheric Composition Program.

Dr. James Crawford has over 30 years of distinction, integrity, and professional excellence in myriad roles within the Tropospheric Composition Program (TCP), including graduate student, Principal Investigator (PI), flight planner, platform scientist, deputy and mission scientist, data manager, program manager, and mission PI.

As a graduate of West Point and an Army field artillery officer with deployments to Korea, Thailand, and Australia, he has used his leadership skills and early life experiences to respect diverse viewpoints. His influence grew with his responsibilities in the TCP, where he led teams through all aspects of a mission from formulation, field deployment, data submission, and reporting.

As the TCP Program Manager (2006-2008), he wrote the Arctic Research of the Composition of the Troposphere from Aircraft and Satellites (ARCTAS) solicitation, supervised the selection of investigators, and established collaborations with National Oceanic and Atmospheric Administration and the Department of Energy to deploy aircraft to Alaska for the winter campaign. He further leveraged the ARCTAS payload to collaborate with the California Air Resources Board to execute local flights from the DC-8 base in Palmdale, CA, to focus on California air quality issues.

Dr. Crawford is a highly respected team member and an excellent ambassador for NASA to the national and international scientific communities, producing over 160 refereed publications. His vision to change the focus of the TCP from examining background global atmospheric chemistry to preparing airborne experiment operations concurrently with geostationary satellite air quality observations has informed decisions addressing critical societal needs around the world. This vision was manifested in his DISCOVER-AQ flight campaign, the first Earth Venture-Suborbital (EVS) mission awarded. His \$30 million proposal attracted an additional \$14.1 million in funding and added 53 largely self-supported research groups from 39 different institutions to the science team. He led highly successful P-3B deployments to four different sites within a 3-year span, which produced over 150 publications, multiple student theses, and is generally considered to be the most collaborative and scientifically productive EVS mission to date.

He followed a similar path with KORUS-AQ, establishing collaborations with local scientists and air quality experts. The four-aircraft mission resulted in 79 peer-reviewed papers in 23 journals so far. His leadership of KORUS-AQ served as the basis for a scientific synthesis report that is being used to guide Korean national air quality policies. His vision, leadership, and scientific excellence have characterized pollution sources, significantly improved local air quality assessments for populations living in areas not covered by monitoring networks.

In addition to his accomplishments within the NASA airborne sciences focus area, Dr. Crawford is a tireless contributor to the international scientific community. He served as editor of the Journal of Geophysical Research from 2013 to 2019 and since 2015 he sits on the International Global Atmospheric Chemistry (IGAC) Steering Committee, the Texas Air Quality Research Program Advisory Committee, and the National Center for Atmospheric Research, Atmospheric Chemistry Observations & Modeling Advisory Panel. He currently serves as the IGAC Co-Chair, where he is promoting international collaborations in advancing air quality research.



Distinguished Service Medal

Erik C. Denson

For long-term dedication, technical leadership, and expertise in electrical and electronic systems, ensuring safe and successful support of space flight programs and projects.

Mr. Erik Denson has provided superior dedication to space flight programs and projects for the past 31 years. He has proven himself as the key technical expert for electrical and electronic systems at Kennedy Space Center (KSC). His distinguished service and consistent technical excellence have ensured

electrical systems have been designed, developed, and operated safely and meet or exceed all technical requirements.

Mr. Denson has steadfastly gone above and beyond in his previous positions, including manager of electronic systems design, and in his current position as Chief Engineer for the Electrical Discipline. His electrical engineering knowledge and experience is well known, and his expertise is sought after on a regular basis. He currently supports a variety of customers across KSC including the Exploration Ground Systems (EGS) Program and has tirelessly supported hundreds of Chief Engineer Tabletop Reviews, Design Reviews, Test Readiness Reviews, and numerous other subsystem and technology program reviews, providing critical assessments and engineering concurrences to ensure the electrical systems are robust and ready to operate in a safe manner.

Significant milestones Mr. Denson approved recently, all in support of a successful Artemis I mission, include KSC Ground Control System, Hazardous Gas Leak Detection System, Thermal Control System, Transport Vehicle Purge Monitor System, and Sensor Data Acquisition System, as well as systems approvals including the Electrical Ground Support Equipment and Support Systems for the Multi-Payload Processing Facility and Vehicle Assembly Building.

Mr. Denson has been instrumental in the qualification of electric field effects, natural and induced environments, and vibration. This work impacts every critical ground subsystem for the EGS Program including pneumatics, cryogenics, hydraulics, umbilical arms, and all electronic subsystems. Key to Mr. Denson's performance impact is his cooperative and collaborative nature that builds teamwork across organization, directorate, Agency, Government, and industry levels to accomplish extraordinary results.

As the Electrical Discipline Chief Engineer, he was responsible for developing the Electromagnetic Interference (EMI) characterization assessment that greatly enhanced the throughput of EMI assessments and properly placed an emphasis on operational controls when design solutions were unavailable or cost-prohibited. This was an extremely challenging task with technical challenges and sometimes high emotions. He is the glue that pulls opposing positions together, seeking common ground and finding alternate solutions to ensure project success.

His proficiency in electrical systems has earned him several important roles across the Agency in addition to his chief engineer position. He serves as KSC Technical Authority for the Electrical Specifications and Standards. This responsibility is extremely important, as it provides an independent and necessary valuation for electrical specifications and standards on behalf of the KSC Engineering Directorate. He is also the KSC representative for the NASA Electronic Parts Assurance Group, the Electrical, Electronic, and Electromechanical (EEE) Parts Community of Practice, NASA EEE Parts Advisory Team, and NASA EEE Parts Standard Development Team. In addition, he is also the author of the electrical and electronic sections of NASA-STD-5005, the Agency standard covering all aspects of ground system design.



Distinguished Service Medal

Dr. James L. Green

For outstanding leadership, dedication, and commitment to NASA's program and mission benefiting the Nation for generations to come.

NASA's Chief Scientist, Dr. James (Jim) Green, had over 40 years of service at NASA. From starting up NASA's first Internet to conducting groundbreaking research to hosting NASA's popular podcast "Gravity Assist," Dr. Green's contributions to the Agency are countless and varied.

Over his more than four decades at NASA, Dr. Green successfully led teams to accomplish incredible missions – including the New Horizons spacecraft flyby of Pluto, the Juno spacecraft to Jupiter, and the landing of the Curiosity rover on Mars. His contributions helped NASA gain a better understanding of our solar system and our place in it.

Dr. Green began his NASA career at the Magnetospheric Physics Branch at Marshall Space Flight Center (MSFC). There, he developed and managed the Space Physics Analysis Network (SPAN), which was NASA's first version of an Internet. SPAN helped to herald the era of open science, in which scientists worldwide could rapidly access data and information, as well as communicate with each other. Dr. Green also served as a safety diver at the MSFC Neutral Buoyancy Simulator and made more than 150 dives, working with astronauts and engineers training to fly on Shuttles, perform space walks, and make repairs in orbit on satellites including the Solar Maximum Mission and Hubble.

In his science career, Dr. Green specialized in the study of magnetic and electric fields and low energy plasma in the solar system. At NASA Goddard Space Flight Center, he served as the co-investigator and deputy project scientist on the Imager for Magnetopause-to-Aurora Global Exploration (IMAGE) mission, the first spacecraft dedicated to imaging Earth's magnetosphere. He also became the deputy project scientist for mission operations and data analysis for two heliophysics missions that studied solar activity in the near-Earth environment: Wind and POLAR. Dr. Green's contributions went on to expand far beyond magnetospheric science. His passion for space and thirst for knowledge led him to write more than 125 scientific articles in refereed journals covering many different topics across planetary science and astrophysics. He has also written over 50 technical articles on various aspects of data systems and computer networks.

In 2006, Dr. Green became the director of the Planetary Science Division at NASA Headquarters, a role he held until 2018. He counts among his biggest highlights the landing of the Curiosity rover on the surface of Mars in 2012, employing a risky and complicated maneuver involving a "sky crane" for the first time. Under his leadership, NASA also successfully saw Juno investigate Jupiter, MESSENGER study Mercury, Dawn orbit both Vesta and Ceres, New Horizons fly by Pluto, and much more. Dr. Green also approved plans for the Perseverance rover, which landed on Mars in February 2021.

Dr. Green helped develop a new way to engage the public in 2016 when he was invited to host a NASA podcast. After becoming the Agency's Chief Scientist in 2018, he continued writing scientific papers and played a key role in generating excitement about space exploration. His accolades and accomplishments precede him, and his contributions were crucial to the success of the missions, allowing us to learn more about our solar system to the benefit of our country and humanity.



Distinguished Service Medal

David A. Herda

For exemplary leadership and distinguished service to NASA in support of the Space Launch System and Space Shuttle Main Engine Programs.

Mr. David Herda has demonstrated exemplary leadership for over 15 years as Manager of the Resident Management Office (RMO) at Aerojet Rocketdyne (AR) in support of the Space Launch System (SLS) Program and Space Shuttle Main Engine (SSME) Project. During that time, his dedication, leadership, engineering and programmatic expertise, and attention to detail made a significant impact to NASA human space flight.

Mr. Herda retired at the end of September 2020 with 35 years of service to NASA. During his career in the RMO, Mr. Herda's technical leadership and other contributions have contributed to the success of over 44 Space Shuttle missions, countless SSME/RS-25 ground tests, and the successful design and test of the J-2X engine, and helped lay the groundwork for successful flight of the SLS. As RMO Manager, he showed exemplary leadership in the manufacturing and evaluation of RS-25/SSME engines.

Mr. Herda fostered and maintained a trusting working relationship with the RS-25 prime contractor, making the RMO a resource to help navigate NASA demands while maintaining a healthy tension to facilitate Government oversight. He represented the "eyes and ears" of the Liquid Engine Office at the contractor site, served as the NASA Chairman of the local Material Review Board, and provided customer leadership to the contractor's Failure Review Board, Engineering Change Board, Corrective Action Board, and the Senior Quality Council. His technical leadership contributed immensely to the resolution of a broad range of complex engineering problems on arguably the world's most complex machine. He made key contributions to engine failure investigations, flight and test anomaly investigations, the redesign of the high-pressure pumps, and the evolution and growth of engineering expertise and applications in the area of stress analysis, with particular emphasis on fracture control.

In all of his efforts, Mr. Herda demonstrated an understanding of engineering risk and judgment that is second to none. He was responsible for leading the team of onsite NASA employees, support contractors, and the local Defense Contract Management Agency delegation. He managed the team through multiple difficult transitions, first as the Space Shuttle Program retired, then to the Constellation Program, and finally into the SLS Program. Throughout the execution of each program, Mr. Herda maintained an expectation of technical excellence from his team while being deeply committed to helping each employee maintain a proper balance between home and work. He was a dedicated mentor to all young engineers within his office and established a program to provide early career engineers an opportunity to detail up to a year with the RMO in Canoga Park, CA. The program has provided valuable development to over a dozen early-career engineers while significantly diversifying the skills and knowledge of engineering support to the SLS Liquid Engine Office.

Mr. Herda's exceptional leadership at the RMO at AR has contributed greatly to the success of SSME/RS-25 engines, the SLS Program, and advancement of human exploration. Thanks to his dedication and steady guidance, the RMO has transitioned from support of the continued safe flight operation of the SSME to a new era of human space flight where the RS-25 engines stand ready to support Artemis-I.



Distinguished Service Medal

Thomas J. Horvath

For distinguished service to the success of human space flight including ground and flight testing in the field of aerothermodynamics.

Mr. Thomas Horvath is an internationally recognized expert in aerothermodynamics, performing comprehensive, benchmark research over the past three decades, with resulting applications that have made significant, sustained, and enabling contributions to high-priority, fast-paced Agency access-to-space and planetary programs.

Drawing upon his vast knowledge and expertise of complex, high-energy, chemically reacting, viscous-dominated hypersonic flow physics phenomena and the cause-and-effect on vehicle surface temperatures, Mr. Horvath provided critical support to the Columbia Accident Investigation, studying damage scenarios to the shuttle's leading-edge thermal protection system (TPS). He applied state-of-the-art hypersonic wind tunnel testing methodologies and measurement techniques to develop tools to detect TPS damage. During the first Return to Flight mission (STS-114), he was an integral part of the team exercising these damage assessment tools that presented analyses, tool uncertainties, and recommendations to the Agency Mission Management Team and were instrumental in the decision to perform a risky astronaut spacewalk to repair damage, ensuring the safe reentry of Discovery.

He advocated for and established an aircraft-based infrared imaging capability for obtaining critical thermal measurements during a shuttle's descent through the atmosphere. Persevering against initial resistance from the technical and management communities, the NASA Engineering and Safety Center (NESC)-sponsored Hypersonic Thermodynamic Infrared Measurements (HYTHIRM) team led by Mr. Horvath provided the first-ever global surface temperature mappings on the Shuttle during seven reentry opportunities. This collective flight data set directly contributed to a better characterization of reentry environments from a damaged thermal protection system. The reduction in tool uncertainty would have rendered unnecessary the risky spacewalk to repair damage during STS-114. Through technical excellence and skilled advocacy, HYTHIRM has grown into Scientifically Calibrated In-Flight Imagery (SCIFLI), the Agency's go-to scientific imaging capability. SCIFLI delivered 43 of the last 60+ observation campaigns in support of NASA's Commercial Crew Program. High-resolution ground and aircraft imaging has been critical path for the development and certification of parachute recovery systems essential for astronaut safety and assured access to and from space.

Under his influence, NASA and Armstrong Flight Research Center (AFRC) collaborated with the Department of Defense for 5+ years (~\$100 million in reimbursable work for NASA) to develop and implement next-generation imaging technologies on NASA Global Hawks that will provide cross-cutting flight data invaluable to the design and performance assessment of existing and future nationally sponsored launch, flight, and reentry systems.

Mr. Horvath's dedication and passion has facilitated a transformational shift in flight test measurement methodology, providing invaluable data required for safer and more robust operation of human-rated spacecraft. His pioneering SCIFLI team has set a new standard for in-flight measurement capability. An American Institute of Aeronautics and Astronautics (AIAA) Associate Fellow and Engineer of the Year, he has published over 120 technical publications and won the AIAA best-paper in Thermophysics. He has been recognized by numerous national and Agency/Center Group Achievement Awards and is the recipient of 4 NASA medals (1 Exceptional Engineering Achievement, 2 Exceptional Achievement, and 1 Exceptional Service), a Silver Snoopy, and the NESC Directors Award in 2020.



Distinguished Service Medal

David Jarrett

For distinguished service during a long career as an engineer, program manager, and program executive supporting NASA's science and human exploration programs.

In 2020, Mr. David Jarrett retired from NASA after 34 years of distinguished service, completing a long and productive career of making extraordinary contributions to NASA's mission to expand the frontiers of knowledge and understand and protect our home planet. His career spans multiple NASA Centers, supporting four different NASA science divisions as well as human exploration.

Mr. Jarrett began as a spacecraft systems engineer at the Jet Propulsion Laboratory (JPL) in 1986 where he provided significant contributions that enabled the Mars Observer and Magellan Radar Mapper projects. He took a detail at NASA Headquarters in the Office of Space Science and Applications, where he led several Space Shuttle science missions, including the Lidar In-Space Technology Experiment, United States Microgravity Payload series, Space Station Heat Pipe Advanced Radiator Element experiment, Shuttle Test of Relativity Experiment, third Atmospheric Laboratory for Applications and Science, and Control, Astrophysics, and Structures Experiment in Space.

This detail led to a permanent assignment as the Program Manager for Space Shuttle Science Mission Management and Integration at NASA Headquarters, serving from 1990 to 1997 and managing science missions and investigations on Spacelab and the Space Shuttle. Mr. Jarrett then moved to Marshall Space Flight Center from 1997 to 1999 as the Manager for the Flight Planning and Requirements Integration Office in the Microgravity Research Program Office. He managed the NASA-sponsored physical research and commercially sponsored physical, biological, and technical experiments flown on all carriers including the Space Shuttle, the ISS, the Russian Mir Space Station, suborbital rockets, expendable launch vehicles, and parabolic aircraft. In 1999 Mr. Jarrett moved to the NASA Management Office at JPL to become the Discovery Program manager for Planetary Science. Under his leadership, NASA developed and launched missions to all parts of the solar system including the Stardust, Genesis, MESSENGER, Deep Impact, Dawn, and Kepler missions.

In 2003 Mr. Jarrett returned to Headquarters as Program Executive for Physical Sciences Flight Projects, leading the formulation and development of flight projects on the Space Shuttle, ISS, robotic exploration vehicles and/or international spacecraft. He took on an additional assignment to become Program Executive for Extravehicular Activity Systems and Altair Lunar Lander, serving in that role for over 5 years. Mr. Jarrett then became Program Executive in the Earth Science Division for multiple missions including Landsat-8, GRACE-Follow On, Landsat-9, and PACE.

Mr. Jarrett used his diplomatic skills to building strong domestic and international partnerships that enabled the successful launch of Landsat-8 and the development of the Landsat-9 and PACE missions. The last stop on his journey took him beyond our solar system in 2020 as Program Executive in the Astrophysics Division for the Nancy Grace Roman Space Telescope.

Mr. Jarrett was inspired by the men who walked on the Moon. Throughout his long and illustrious career, he inspired many others, at NASA and around the world. He worked at JPL, MSFC, and Headquarters. He coordinated activities at nearly every NASA Center; supported multiple directorates; and built lasting collaborations with U.S. Government agencies, commercial industry, academia, and international space agencies and research organizations.



Distinguished Service Medal

Carl P. Jones

For 38 years of distinguished service that made a profound impact on NASA's mission success.

Mr. Carl Preston Jones' 38-year career with NASA has been characterized by remarkable achievements resulting in outstanding contributions to the Nation's space flight, science, and exploration missions. His leadership skills and ability to manage complex, multifaceted engineering, science, and

technology programs are recognized Center-wide, Agency-wide, and Nationwide.

Since joining NASA in 1982 as an engineer in the Structural Dynamics Laboratory at NASA Marshall Space Flight Center (MSFC), he progressed through increasingly responsible assignments requiring a unique combination of technical expertise and strategic organization alignment, resource management, and process improvement skills. He was the Liquid Engine Systems Branch Chief in MSFC's Propulsion Laboratory from 1994 to 1997 and Propulsion Test Division Chief from 1997 to 2000. He moved from the Engineering Directorate to serve as the Engine Systems Team Lead in the Space Shuttle Main Engine Project Office from 2000 to 2002.

Mr. Jones was appointed to the Senior Executive Service in 2002 when he returned to lead the Engineering Directorate's Propulsion Systems Department. In 2007 he transferred to the Spacecraft and Vehicle Systems Department. He was then promoted to Deputy Director of the Engineering Directorate in 2011, and in 2016 was named Director. In this role, he led the design, development, and testing of numerous NASA space systems, including life support hardware for the ISS, multiple flight vehicles, spacecraft and lander hardware, and software systems. Under his guidance, critical support was provided to the Space Launch System, the world's most powerful rocket that will send astronauts to the Moon and ultimately to Mars; the Imaging X-ray Polarimetry Explorer, which will aid understanding of X-ray production in neutron stars, supermassive black holes, and other exotic objects in space; and numerous small payloads and flight support hardware systems.

In 2018, Mr. Jones was appointed to the position of Associate Director, Technical, where he provides expert technical assistance and advice to the Center Director. This appointment supports the full spectrum of NASA engineering, science, and technology work at MSFC, including nearly 6,000 civil service and contract personnel and an annual budget of approximately \$2.8 billion. He works closely with senior managers across the Center by performing special studies, advising and assisting in policy reviews, and developing benchmarking strategies, ensuring MSFC's work is technically sound and achieves the goals and requirements of NASA and the Nation through a wide range of propulsion, space transportation, and scientific programs.

Mr. Jones' technical and managerial experience and knowledge of NASA's missions and programs are highly valued, and he is frequently called upon to serve on Agency-level boards and committees. Within MSFC, he has established effective governance models, led multiple strategic organization realignments, streamlined processes resulting in reduced cost, established valuable internal and external partnerships, and effectively balanced Center resources. His unparalleled dedication to the execution of NASA's mission and his allegiance and commitment to public trust have resulted in a legacy of extraordinary achievement and distinguished service to the Nation, and his dedication to advancing the Agency's goals has positioned MSFC and NASA for a new era of space exploration and scientific discovery.



Distinguished Service Medal

Stephen G. Jurczyk

For distinguished, sustained leadership of the Agency and NASA's workforce.

Mr. Stephen (Steve) Jurczyk's 32-year NASA career encompassed a broad range of strategically important positions of increasing responsibility across a variety of critical Agency functions by leading several NASA organizations, and served as Associate Administrator, the Agency's highest ranking civil servant position.

Mr. Jurczyk was responsible for integrating the technical and programmatic elements of the Agency to ensure accomplishment of its mission. He drove consistency and stability in technical and programmatic operations by overseeing the Agency's mission directorates, Centers, and Headquarters technical functional support offices, including Office of Safety and Mission Assurance, Office of the Chief Engineer, and Office of Chief Health and Medical Management.

Mr. Jurczyk was an inspirational, servant leader who inspired his team to put the workforce first as we achieved historic, first-of-their-kind missions in the midst of a global pandemic and cries for social justice. By putting the health and safety of the NASA team first, he led NASA to safely navigate the challenges of Coronavirus Disease 2019 (COVID-19) and kept the missions moving forward. Under his leadership, NASA will hit several key milestones, including launching astronauts on American spacecraft from U.S. soil for the first time in 9 years, sending a car-sized rover to Mars, and conducting major tests of our Space Launch System (SLS) rocket.

Mr. Jurczyk demonstrated an unwavering commitment to deliver the most value for the Nation's investment in NASA by developing innovative approaches to implementing the Agency's programs. He fostered an atmosphere where all employees felt valued for their accomplishments and supported in their personal and career development. He skillfully designed and implemented strategies that maximized employee potential, connected the organization horizontally and vertically, and fostered high ethical standards to meet the organization's vision, mission, and goals. Mr. Jurczyk provided an inclusive workplace that fostered the development of others to their full potential; allowed for full participation by all employees; facilitated collaboration, cooperation, and teamwork, and supported constructive resolution of conflicts. A champion of the Agency's Unity Campaign, he cultivated a culture of inclusion that is united and diverse. Mr. Jurczyk consistently demonstrated exceptional leadership as evidenced by NASA's ranking as the Best Place to Work in the Federal Government for 9 straight years.

Mr. Jurczyk successfully led the implementation planning for the Exploration campaign, including a concept of operations for human lunar orbital and surface missions. He established initial requirements for the Gateway outpost, and conducted an Agency Acquisition Strategy Meeting to ensure plans met requirements and optimized the participation of NASA Centers, U.S. industry, and international partners.

Before his appointment as Associate Administrator, Mr. Jurczyk led several NASA organizations to successfully implement policies pushing the boundaries of aircraft research, Earth science, and space technology and systems. Mr. Jurczyk served as Deputy Director (February 2005 to October 2013) and then Director (October 2013 to March 2015) of NASA Langley Research Center, where he led an organization of world-class scientists and engineers in meeting the objectives of programs in aeronautics research, space technology, space exploration, and science research.



Distinguished Service Medal

Dr. Jack A. Kaye

For an outstanding career in service to our Nation as a respected scientist in support of Earth Science and remote sensing.

Dr. Jack Kaye is the Associate Director for Research and Analysis (R&A) in the Earth Science Division (ESD) in NASA's Science Mission Directorate. Dr. Kaye's 37-year record of national and international accomplishment is as impressive as it is sustained.

Dr. Kaye is responsible for managing an annual budget of approximately \$400 million and covering the broad spectrum of scientific disciplines that constitute it. The current NASA ESD portfolio includes more than 22 operating satellites and instruments aboard the ISS; more than 16 satellites in formulation and development; and 20 airborne missions. He has distinguished himself as a visionary and inclusive leader within the interagency community, among international partners, and with a multidisciplinary scientific program, managing 29 civil servants and contractors at NASA Headquarters and a large cohort of researchers at NASA Centers, other U.S. Government agencies, and in academia.

As a steward of the U.S. taxpayers' investment in science, Dr. Kaye's expertise in judiciously managing a changing budget with ramifications for remote sensing activities, research, and planning has been exemplary. He is credited with ensuring that the R&A Program exceeds its objectives, even in times without sustained budget growth. He ensured the continuation of essential research in support of long-term programs without terminating any previously approved multiyear endeavors, even with an unexpected 10 percent budget reduction in 1 year.

His creativity brought together different research areas—beyond the historical collaborations—with new scientific ideas leveraging the different R&A portfolios to achieve greater objectives with the same budget. He has leveraged complementarity among planned satellite programs and competed research programs for dedicated funding availability to support research based on newly launched satellite platforms of NASA and its interagency and international partners. Dr. Kaye has stabilized the investigator community by helping to sustain and advance the scientists' careers, further increased national knowledge of the Earth, and allowed U.S. taxpayers maximum benefits from the satellites the Nation launches. Dr. Kaye's vision as a leader in Federal interagency groups has resulted in positive improvements to collaborations. He has made an enduring contribution to interagency product development, to identify the full value of the national effort, and to ensure sponsor and stakeholder confidence in the efficient use of resources and the resulting outputs.

Dr. Kaye has also advanced Earth Science worldwide by showcasing NASA's research and expertise to the world, and he has enabled NASA dialogue on the plans, processes, and accomplishments of other space agencies, United Nations System organizations, and Earth observing systems. Throughout his distinguished career, Dr. Kaye has earned recognition and awards that bespeak his contributions to public stewardship in science and remote sensing. He has built ties to global research communities and has exemplified excellence in leadership for the NASA scientists and engineers he leads and the entities in which he has been honored to serve and contribute.

Fundamental to his vision of the science and technology of tomorrow, Dr. Kaye has also focused his efforts, and those of the scientists and engineers he leads, to inspire and strengthen student interest in and commitment to Science, Technology, Engineering, and Mathematics (STEM).



Distinguished Service Medal

Ginger Kerrick

For distinguished service as a key leader and visionary to the Agency.

Over a 27-year career at NASA Johnson Space Center (JSC), Ms. Ginger Kerrick has provided steadfast leadership from the first Space Shuttle mission to the ISS to the Artemis program.

As the Deputy Director for JSC Exploration Integration and Science Directorate, she leveraged the responsibilities and insights of the role to integrate JSC's expertise into Artemis. Ms. Kerrick represented JSC on two Independent Review Teams (IRTs), first the Exploration Systems Development Integration Review to confirm that NASA was ready to proceed with assembly, integration, and test activities for the Artemis I mission, and the Artemis I Operations Readiness Review to determine if the mission was ready to proceed to the operations phase. During the first IRT, she influenced enterprise-level managers to provide additional resources and focus to assess risk aggregation and risk interaction. Because she drew early attention to this matter, the risk team was able to provide an in-depth assessment of the schedule and operational risk during the second review.

As the very first Division Chief for the Flight Integration Division in the Flight Operations Directorate (FOD), she provided the vision, long-term strategy, and goals to enable the new division to meet the integrated needs of key stakeholders. She successfully led the division for 4 years, consolidating 160 FOD employees working on crew and vehicle safety, training, payload integration, vehicle integration and testing, flight product development, software integration and testing, and launch, landing, and recovery.

Ms. Kerrick served in the critical role of Flight Operations Assistant Director for ISS for 4 years, providing leadership as the primary interface to ISS management for operations resource, technical, strategic, integration, risk, and budgetary decisions, managing an ISS FOD budget of ~\$210 million and overseeing the work of 1,100 personnel and the facilities that enabled FOD to plan, train, and fly ISS missions. She facilitated procurement of a new Gulfstream-V aircraft to provide for a more efficient return of ISS crew members from the Kazakhstan landing site. This procurement involved a partnership between FOD, the ISS Program, and NASA Headquarters which met the needs of not only the ISS Program but NASA's aeronautical science program at a significant \$20 million savings to the ISS Program. She also oversaw the completion of the Mission Control Center MCC-21 project in 2015 which, by the end of the ISS Program in 2024, will yield \$420 million in savings from a 50% reduction in annual sustaining costs.

As an ISS flight director, she chaired multinational Joint Operations Panel meetings to integrate requirements and constraints, identify issues, and resolve issues to optimize the design of joint Shuttle and ISS mission profiles and assure safe completion of ISS assembly. She championed integrated risk management efforts, leading postflight discussions to identify and document lessons learned. She took on additional responsibility as the Assistant to the Chief of the Flight Director Office for ISS.

Ms. Kerrick established the initial processes and positions for integrating Russian training for our crews before the first ISS crew mission, Expedition 1. She served as the first liaison between the Gagarin Cosmonaut Training Center and NASA providing oversight for the integration of preflight training and mission execution products for all ISS crews.



Distinguished Service Medal

Dr. Caroline A. Kilbourne

For enabling new space missions and making NASA the world-class leader in broad-band, high-resolution X-ray spectroscopy.

Dr. Caroline Kilbourne is the key person in developing and implementing detectors which are crucial for modern astrophysical x-ray spectroscopy. The quantum calorimeters developed by Dr. Kilbourne and her team are and will be the standard-setting technology in this field for decades.

Dr. Kilbourne has managed the detailed day-to-day work associated with fabricating, testing, packaging, and operating these detectors. Dr. Kilbourne and her team have produced all of the x-ray calorimeters that have flown in space or in suborbital payloads over the past 20 years. Her contributions have kept NASA at the leading edge of x-ray detector research and will continue to advance x-ray astronomy well into the future.

Dr. Kilbourne has been involved in every step of a systematic and rigorous research and development program, which has steadily improved the capability and performance of x-ray microcalorimeter arrays. As a result, it is now possible for astronomers to obtain celestial x-ray spectra comparable to what had been recently only been available at longer wavelengths. Dr. Kilbourne also pioneered low temperature sensors to detect cosmic rays for use as anti-coincidence detectors. This work has enabled numerous astrophysical studies, by significantly reducing the background rate, permitting study of diffuse sources such as supernova remnants and clusters of galaxies.

Dr. Kilbourne has been the technological leader on two NASA suborbital payloads, and on instruments on the Japan Aerospace Exploration Agency (JAXA) Astro-E, Suzaku, and Hitomi missions. She is the Instrument Scientist for the state-of-the-art JAXA-NASA XRISM Resolve cryogenic calorimeter (launch in 2022) and a leader in developing an ambitious x-ray spectrometer for the European Space Agency (ESA) ATHENA flagship mission (launch in 2031). These sensors are not only the coldest detectors ever developed for flight applications but are the highest spectral resolution instruments in the high-energy x-ray band.

Dr. Kilbourne overcame major challenges along the way, having worked through a launch failure and spacecraft mishaps, and has always recovered and prepared for the next opportunity while making steady progress in advancing detector performance. She has consistently demonstrated innovation and creativity in characterizing the instrumental background, developing models that are now being used by the ESA-NASA ATHENA calorimeter team and has also overseen assembly of the required thermal blocking filters and assessed the impact of cryocooler microvibrations on detector performance.

The Hitomi spectrometer provided the first direct measurement of the turbulence in the intracluster medium of the Perseus cluster of galaxies, one of the largest gravitationally bound structures in the universe. This led to the surprising result that the 50-million-degree, x-ray emitting gas in the cluster exhibits a remarkably low degree of turbulence. During the analysis of the data, Dr. Kilbourne proved to be the crucial person with knowledge of the detector performance, electronics and data acquisition hardware, and issues associated with telemetry and spacecraft operations. As a result, Dr. Kilbourne, more than almost any other individual, deserves credit for enabling science results from the Hitomi mission.



Distinguished Service Medal

James T. Lawrence

For outstanding achievements in successfully leading Agency-level electrical power systems integration of multi-Center teams for human space flight exploration programs.

Over the past 15 years, Mr. James (Tim) Lawrence has performed in an Agency-level power systems integration leadership role for both the Constellation Program and the Gateway Program. In this role, he has used his 37 years of multi-program power systems knowledge to establish power systems requirements for the exploration vehicles and for portable loads

to enable the vehicles and loads to be successfully designed, built, tested, and integrated, both on the ground and on-orbit.

Launching multiple programmatic power elements requires establishing two overarching types of power quality requirements. The first set of requirements defines those related to the vehicle power generation, distribution, regulation, and conversion. These requirements facilitate the ability for commonality, interchangeability, and interoperability between various vehicle power systems and between vehicle and ground power systems. Establishing these requirements enables on-orbit mass savings and contingency operations with power that can be transferred between the vehicles. The second set of requirements defines those related to connecting or “plugging in” portable loads, such as those that the crew might use onboard the vehicle. The failure to correctly define either of these two types of power quality requirements results in vehicles that are not able to meet their human space flight objectives of interoperability between vehicle power systems or support of portable power loads. Either of these failures could be devastating.

Mr. Lawrence was the Johnson Space Center lead of a small team of multi-Center and industry experts who successfully originated these two sets of power quality requirements at multiple voltage levels for the Constellation Program. He also led the effort to define the verification methodologies, such as testing or analyses, which would be used to ensure that the Electrical Power System met the specified power quality requirements. Since various vehicles, extravehicular activity suits, and portable loads operated at different voltage levels, Mr. Lawrence led the effort to generate requirements documents for voltage levels for the Constellation Program and integrated with the International Partners (IPs) to ensure their understanding, incorporate any necessary changes, and gain their acceptance of the power quality requirements.

The effort that Mr. Lawrence led was so successful that after the Constellation Program was canceled, several of the applicable requirements documents and their verification methods were still applied to Orion. Furthermore, when the Gateway Program started, Mr. Lawrence was personally enlisted by the Program Manager to help lead a multi-Center effort to make modifications to these requirements documents and their verifications to ensure their applicability to the specific architectures of the U.S. and IP Gateway vehicles. Due to the heavy workload and multiple voltage levels that came from the Constellation team, the Gateway effort was a unique but substantially more abbreviated effort to come to fruition.

Mr. Lawrence’s dedication to the success of human space flight power systems, and in particular utilizing his 37 years of power systems expertise and rigorous engineering principles to establish power quality requirements for the integration of multiple programmatic element power systems designed and built by the U.S. and the IPs, exemplifies the profound impact that Mr. Lawrence has had.



Distinguished Service Medal

David A. LeDoux

For significant career contributions to NASA's Langley Research Center and the Office of the Chief Human Capital Officer.

Mr. David LeDoux had a long history of distinguished public service and made numerous contributions to NASA mission success. He served as an executive at NASA Langley Research Center (LaRC) as LaRC's Human Capital Director and senior advisor to the Center Director and senior leadership team from 2009 until his retirement in December 2021.

Mr. LeDoux was a respected leader in the Human Capital (HC) community and played a key role in the transformation of HC services for NASA. As the co-lead for NASA's HC Business Services Assessment (BSA) Team, he identified opportunities for more effective and efficient human resources operations. He streamlined how HC services are provided, consolidated and centralized position classification, instituted an Agency-wide workforce planning process, restructured NASA's training and development programs, and refocused how NASA recruits, onboards, and develops new employees.

Following his successful HC BSA leadership, Mr. LeDoux focused on transforming LaRC's long-term workforce planning strategy. He designed an innovative "complement grouping" approach, whereby permanent positions would be strategically managed by groups of organizations rather than by individual supervisors. His approach facilitates the Agency's desire to forward-fill vacancies to meet emerging mission requirements rather than backfilling positions aligned with legacy work. This strategic and collaborative approach resulted in a shift in priority hiring toward clearly defined critical long-term mission needs, while less critical but necessary short-term work is contracted out or filled under time-limited authorities.

Mr. LeDoux' contributions extend beyond HC and LaRC. He was integral in the establishment of NASA's Voluntary Leave Bank Program for all Agency civil service employees. Launched in 2013, initial enrollment exceeded expectations with almost 1,000 members and nearly 18,000 hours of leave donations. As the only NASA HC official on the first Leave Bank Executive Board, Mr. LeDoux ensured a solid foundation for the program. In the years that followed, thousands of NASA employees have become members, tens of thousands of hours of leave have been donated, and hundreds of employees received the gift of much-needed paid leave during medical emergencies.

Wanting to enhance NASA's ability to attract the nation's top talent, Mr. LeDoux helped formulate a business case to the Administration, Office of Management and Budget, and Office of Personnel Management for increased HC flexibilities, leading to NASA receiving new and expanded direct hiring authorities. His contributions to delivering efficient and effective HC services were also evident in his leadership of LaRC's administrative support consolidation project. Through attrition, this effort reduced the number of administrative support professionals needed to perform administrative functions and saved LaRC more than \$200,000 in contract costs.

Mr. LeDoux' unwavering passion for, and dedication to, NASA's mission have been both long-lasting and impactful.



Distinguished Service Medal

Ricardo A. Machin

For outstanding contributions to parachute systems design and application, advancing the state-of-the-art for parachute application to all crewed spacecraft.

Mr. Ricardo (Koki) Machin, a nationally recognized expert in parachute technology, serves as the Parachute Discipline Technical Lead and Parachute Subsystem Manager within the Commercial Crew Program (CCP). He strives daily to develop, monitor, and improve the parachute systems used by NASA's commercial partners and to characterize and mitigate risks associated with this critical subsystem. This latest assignment continues in a tradition of steadfast dedication to technical and engineering excellence honed over the entirety of his career.

His previous assignment was Chief Engineer and Parachute Subsystem Manager for the Orion Capsule Parachute Assembly System (CPAS) Project, a Government-furnished equipment initiative led by NASA Johnson Space Center to provide a robust, reliable parachute system for the Orion capsule. Mr. Machin's parachute experience dates to the mid-1990s during design and development of the X-38 Crew Return Vehicle. This ambitious project's goal was automated landing of a crewed spacecraft under restrictive timeline requirements, precluding the use of a traditional runway. The system architecture ultimately required a substantial investment in parachute decelerator technology, resulting in a 7,500-square-foot steerable parafoil, the largest parachute of its kind ever flown. Despite project cancellation, the advances made in parachute design and testing technology during this time proved hugely beneficial for the technology.

From 2004 to 2018, Mr. Machin led the parachute design and integration for the Orion spacecraft, serving as Chief Engineer for the CPAS Project. In this role, he continued to advance parachute technology, with contributions ranging from design modifications and advancements to achieve improved system reliability, to improved modeling and simulation capabilities for improved test operations. More than most technical disciplines, parachute technology relies on empirical evidence in the design process. Mr. Machin's expertise in test architecture design and analysis, coupled with critical insights and hard-earned intuition matured through countless hours spent at remote test sites around the country, have been crucial in gathering this data.

Over the past several years, Mr. Machin has focused his skills and technical expertise toward CCP Parachute Systems, designed largely by SpaceX and Boeing with significant NASA involvement in independent performance assessment, risk characterization, and risk mitigations. These activities have been nearly all-consuming for more than 3 years, as multiple challenges were identified and mitigated (and in some cases are still being dispositioned). His experience, intuition, and collaborative approach to these challenges were instrumental to the realization of CCP's crewed flight goals.

His numerous contributions range from project-centric initiatives such as design trade studies, architecture advancements, and risk-reduction development activities, to discipline-centric roles such as being a member of the American Institute of Aeronautics and Astronautics Aerodynamic Decelerator Systems Technical Committee. His professionalism and integrity have earned him considerable influence, as he is simultaneously respected by the parachute technical community and trusted by the spacecraft design community. He has consulted with virtually every recent spacecraft parachute design, for human and robotic applications, on Earth, Mars, or Venus, in both NASA and the commercial sector.



Distinguished Service Medal

Roy W. Malone

For distinguished service that has profoundly impacted the effectiveness of NASA with other federal agencies, ensuring mission success for critical Agency programs.

Mr. Roy Malone led a distinguished 38-year career serving the United States (U.S.) Government. Throughout his career he demonstrated a commitment to servant leadership, innovation, and partnerships, which have had a profound impact on the mission success of Marshall Space Flight Center (MSFC), the Agency, and the Nation.

After graduating from Georgia Tech University, he joined the U.S. Navy, serving on active duty for 11 years. During this period, he served on three different Navy destroyers, which included a tour as Combat Systems Officer on the USS Caron (DD-970) during Operation Desert Storm and a 2-year tour at the Pentagon in Washington, where he served on the Joint Chiefs of Staff and in the Office of the Chief of Naval Operations.

Mr. Malone joined MSFC in 1994 from private industry, where he supported MSFC as a Senior Quality Engineer on the Safety and Mission Assurance (S&MA) support contract. While at MSFC he also served as the MSFC Logistics Services Department Manager, Director and Deputy Director of S&MA Directorate, Manager of the Shuttle-Ares Transition Office, and Director of the Michoud Assembly Facility in New Orleans, LA. Mr. Malone was named to the Senior Executive Service in 2010.

Beginning in April 2015, he served as the Director of the Office of Center Operations Directorate. He managed the organization of over 120 specialized civil service employees and more than 700 contract employees with an annual budget of approximately \$100 million.

Mr. Malone's servant leadership style is unparalleled. His positive attitude, attention to detail, and can-do spirit built partnerships and a workforce with the confidence to achieve more and ensure success. Using the balanced scorecard approach, Mr. Malone was purposeful to take care of his team members, foster more efficient and improved processes, and focused on customer satisfaction and reduction in budget and footprint. As a result, his approach along with his environmental stewardship led to the development of the innovative Master Concept Plan's LEAP initiative. The initiative ensures the Center focuses on infrastructure that is: Lean by reducing excess infrastructure and creating an opportunity to focus limited operational and maintenance funds on critical assets; Efficient in energy use by taking advantage of the latest energy-saving materials, equipment, and practices; Aligned with Agency and mission priorities; and Positioned to adapt to future requirements.

Mr. Malone was instrumental in the development of the Capturing it Now Award (CINA), a peer-nominated internal award process designed to recognize employees who go above and beyond their normal job duties. During his career at MSFC he received numerous awards, including the Presidential Rank Award for Meritorious Executives. He sought innovative opportunities that have a lasting impact on NASA and Federal partner mission success that spans the Government to save money and improve efficiency. He has been a significant force in developing partnerships across the Government, and his distinguished service reflects great credit on himself, MSFC, the Agency, and the Nation.



Distinguished Service Medal

Cathy H. Mangum

For distinguished service to NASA in providing pioneering information technology leadership, center operations management, and infrastructure/resource guidance ensuring the Agency achieved substantial mission needs.

Ms. Cathy Mangum served NASA for 38 years. She began her NASA career in 1983 as a contractor for the Science Mission Directorate at NASA Headquarters. In 1988, she was hired as an information technology manager for the Aeronautics Mission Directorate and progressed to director of the

Management Operations Division in the Office of Aeronautics in 1994. In 1996, she transitioned to NASA Langley Research Center (LaRC), where she helped to institute the newly established role of a Federal Chief Information Officer (CIO). In 2003, Ms. Mangum was named as the acting CIO and became LaRC's CIO a year later.

From March 2011 to June 2012, she also served as special assistant to the LaRC Director, managed the Vibrant Transformation to Advanced Langley efforts, and led LaRC's 20-year revitalization effort including the demolition of aging structures and construction of six state-of-the-art facilities.

In the 9 years that followed, Ms. Mangum served in two significant leadership roles with progressive responsibility. She was the Director of the Center Operations Directorate at LaRC, responsible for managing, applying, and overseeing the Center's integrated infrastructure management, research support, and Center operations services. She then served as the LaRC Associate Director, where she was the chief operating officer managing day-to-day operations and overseeing the alignment of LaRC's resources and infrastructure to meet current and future NASA mission needs.

In February 2020, Ms. Mangum was named as NASA's Acting Deputy Associate Administrator, serving in this role until her retirement in 2021.



Distinguished Service Medal

Monica Y. Manning

For distinguished service to NASA in providing transformative and strategic leadership of procurement functions, policies, and workforce.

Ms. Monica Manning served as the NASA Assistant Administrator for Procurement, Senior Procurement Executive, and Deputy Chief Acquisition Officer, overseeing a diverse procurement portfolio of goods and services which translated to nearly \$19.5 billion in obligations and 36,000 contact actions.

She also served on the Federal Acquisition Regulation (FAR) Council and represented one of only three signatory authorities that execute procurement policies and procedures on behalf of the Federal Government. Ms. Manning was also a member of the Federal Chief Acquisition Officers Council, the Federal Acquisition Institute Board of Directors, and the National Contract Management Association.

Ms. Manning joined NASA in 2003, serving in several key executive leadership positions, including NASA's Deputy Assistant Administrator for Procurement, Agency Competition Advocate, Procurement Ombudsman, and Director of the Program Operations Division. Her leadership has resulted in processes and procedures that created an effective and efficient Agency Acquisition Operating Model and the implementation and execution of Strategic Sourcing Initiatives for NASA and across the Federal Government.



Distinguished Service Medal

Dr. Paul K. McConnaughey

For distinguished service that has profoundly impacted the effectiveness of NASA with other Federal agencies, ensuring mission success for critical Agency programs.

Dr. Paul McConnaughey's 34-year career with NASA has been characterized by remarkable achievements resulting in outstanding contributions to the Nation's space flight, science, and exploration missions. His leadership skills and ability to manage complex, multifaceted engineering, science, and technology programs are recognized Center-, Agency-, and Nationwide.

Since joining NASA in 1986 as a mathematician in the Systems Dynamics Laboratory, he progressed through increasingly responsible assignments requiring a unique combination of technical expertise and strategic organization alignment, resource management, and process improvement skills. Three years after starting at Marshall Space Flight Center (MSFC), Dr. McConnaughey began his long supervisory career in multiple leadership roles, including: Fluid Dynamics Division Chief, Engineering Directorate Associate Director of Technical Management, MSFC Associate Director, Technical, and MSFC Deputy Director. In these leadership positions, he was responsible for ensuring the performance of Marshall's programs and technical activities with respect to cost, schedule, and mission success. He also managed MSFC strategic discretionary and technology investments and shared the responsibility for leading MSFC installation of a broad spectrum of human space flight, science, and technology development.

Throughout his career, Dr. McConnaughey also demonstrated cross-Agency collaboration by serving as NASA Deputy Manager of the Military Spaceplane Technology Office, where he worked on space vehicle technologies of joint interest to NASA and the U.S. Air Force. He was assigned as Chief Engineer, Exploration Systems Development Division at NASA Headquarters where he oversaw the integration of the Space Launch System, Orion spacecraft, and Ground Support Development and Operations programs. His Cross-Program Systems Integration model has been extended to other Human Exploration and Operations (HEO) programs across NASA.

Dr. McConnaughey's technical and managerial experience, as well as knowledge of NASA's missions and programs, are highly valued by the Agency. As a result, he is frequently called upon to serve on Agency-level boards and committees, such as Chair of the James Web Space Telescope Standing Review Board and leading the National Institute of Rocket Propulsion Systems, a joint NASA/Department of Defense partnership addressing industrial base and programmatic issues in propulsion. Recently he was assigned as Special Advisor to NASA Headquarters HEO Mission Directorate. He has established effective governance models, led multiple strategic organization realignments, streamlined processes resulting in reduced cost, established valuable internal and external partnerships, effectively balanced Center resources, and supported mentoring and minority advancement.

Dr. McConnaughey's unparalleled dedication to the execution of NASA's mission and his allegiance and commitment to public trust have resulted in a legacy of extraordinary achievement and distinguished service to the nation. His development and execution of the DNA of NASA ensures we retain the rich history of NASA for generations to come. His tireless dedication to advancing the Agency's goals have positioned MSFC and NASA to usher in a new era of space exploration and scientific discovery.



Distinguished Service Medal

James W. Morhard

For distinguished service to NASA that has made a profound impact on the Agency's strategic vision and mission success.

Mr. James Morhard was nominated by President Trump and confirmed as NASA's 14th Deputy Administrator, serving with former NASA Administrator James Bridenstine. He was sworn in on October 17, 2018, and left the Agency in January 2021. Mr. Morhard brought his diverse skills, leadership, education, and integrity to NASA and helped provide overall guidance, planning, and policy direction. He helped formulate the Agency's strategic vision and mission and run the day-to-day operations.

Prior to his tenure with NASA, Mr. Morhard was the U.S. Senate Deputy Sergeant at Arms, responsible for the security and operations of the U.S. Senate. He began his career as an analyst for the Secretary of the Navy, where he reviewed procurement and research and development programs. Beginning in 1991, Mr. Morhard served on the staff of the Senate Appropriations Committee, working with the Defense and Military Construction and Commerce, Justice, State, and the Judiciary subcommittees.

In 2003, he became Chief of Staff of the Senate Appropriations Committee, where he worked with House and Senate leadership, the Office of Management and Budget, and the White House to pass the 2004 and 2005 omnibus appropriations acts.



Distinguished Service Medal

Altonell L. Mumford

For extraordinary leadership and resource administration that set a strategic foundation and charted the future course of human space flight exploration.

Recognized across the Agency as a key leader and expert advisor on a wide variety of cross-cutting issues affecting NASA's human exploration endeavors, Ms. Altonell (Toni) Mumford provided the highest-level advice and direction to human space flight programs in support of policies of national importance.

Delivering sustained extraordinary program results throughout her 41-year Federal career, she provided strategic executive leadership and incomparable institutional guidance in support of NASA's missions. Most recently, as the Deputy Associate Administrator for Management and the leader guiding and advocating all phases of budget formation and execution, she directed the administration of a \$10.5 billion budget that equated to nearly 45% of the NASA budget while providing programmatic and institutional leadership to the Human Exploration and Operations Mission Directorate's (HEOMD's) high-visibility programs and projects. Senior leaders from Congress, Executive Office of the President, foreign officials, Government Accountability Office, NASA Inspector General, media, senior leaders across NASA, and Department of Defense regularly sought her advice and guidance on a range of issues due to her extensive knowledge of NASA, outstanding leadership skills, program and project management expertise, and success in advocating for NASA programs.

In 2019, she was handpicked to lead the transition to a new Associate Administrator of HEOMD, and in 2020, when this official abruptly resigned, she was again called on to direct the transition for his replacement. Ms. Mumford's knowledge and decisiveness in managing leadership change were critical to HEOMD's ability to seamlessly continue the evolution of the Moon to Mars campaign. Comprising sophisticated rockets, capsules, landers, and spacecraft, Artemis was established under the previous Administration. Embraced by the new Administration, and to continue to find efficiencies and opportunities to reduce costs, NASA chartered the Artemis Review Team. Ms. Mumford was specifically requested by the Acting NASA Administrator, the Associate Administrator for HEOMD, and NASA's senior political representative to serve as the HEOMD lead for this review due to her extensive knowledge of human space flight.

Previously, she was requested to take the lead in providing strategic guidance and Agency-level leadership for the formulation of the human lunar and Mars exploration portfolios. Stepping up, she worked with the Deputy Associate Administrators in the Science Mission and Space Technology Mission Directorates as a founding member of the Cross-Directorate Exploration Campaign Federated Board, directing Moons to Mars integration. Her efforts ensured that architectures and planning were efficiently integrated across 3 Mission Directorates, multiple programs, 10 Centers, and Agency leadership. Ms. Mumford worked with her team to draft the goals and objectives of the Federated Board and Artemis. She coordinated architecture trades and studies across the Mission Directorates, formulated budget plans, and crafted messaging to educate and influence key staff members of Congress and stakeholders from the National Space Council and the Office of Management and Budget to support funding NASA missions. Despite an austere funding environment, Artemis received full bipartisan support, supplemental budget requests from the Administration, and increased appropriations from Congress, keeping the mission on track.



Distinguished Service Medal

Dr. Ramakrishna R. Nemani

For visionary leadership using global satellite observations to understand critical ecosystem processes vital to NASA's advancement of science and human welfare.

Dr. Ramakrishna (Rama) Nemani is an internationally recognized pioneer and visionary leader in the innovative use of satellite observations and modeling to understand globally significant critical Earth ecosystem processes.

In his groundbreaking 2003 study published in *Science*, Dr. Nemani and his team demonstrated—for the first time—that growth of tropical rainforests is limited by the amount of sunlight received, not by rainfall as previously believed. This finding, now standard textbook material, fundamentally revised the scientific understanding of changes to global biological productivity and carbon balance in response to climate change, essential to determine our planet's ability to support human life.

His collaborative research culminated in the NASA Earth Exchange (NEX), a new paradigm for analyzing global observations and creating predictive models in a transparent collaborative environment for research and applications to address global environmental challenges. NEX's success story is an exemplary model for merging technology and science into a leading science-enabling capability for NASA. NEX is unique—it unites state-of-the-art supercomputing, Earth system modeling, workflow management, remote sensing data sources, and a social networking platform into a complete work environment. NEX data underpins the United States (U.S.) Global Change Research Program's 3rd National Climate Assessment and is used by Federal and state agencies, academia, and companies addressing climate change-induced risks in agriculture, water resources, energy, and public health.

Dr. Nemani initiated an international collaboration of global space and meteorological agencies to create a seamless near-real-time virtual geostationary Earth observatory, fusing data from geostationary satellites to complement NASA's polar orbiters. This first-of-its-kind global collaboration significantly advances NASA's mission to understand and protect Earth by leveraging non-NASA data and furthers U.S. strategic interests.

Dr. Nemani is recognized as an encouraging leader and mentor and is widely respected by colleagues in over 30 research teams, 6 federal and 6 state agencies, and industry (e.g., Google, Amazon, NVIDIA, and Facebook). He served as a team member on three NASA missions, including Earth Observing System/Moderate Resolution Imaging Spectroradiometer, National Polar-orbiting Operational Environmental Satellite System Preparatory Project, Landsat Data Continuity Mission, and three Japanese space agency missions. Since 2009 he has received six NASA honor awards for groundbreaking projects, including quantum computing and machine learning and Terrestrial Observation and Prediction System software to ingest, process, and analyze satellite data to integrate observations and climate data with simulation models, providing nowcasts/forecasts of key ecosystem indicators used by many agencies. His productivity is documented in over 250 peer-reviewed papers. He is one of the most highly cited researchers in the history of NASA Ames Research Center, recognized through over 47,000 peer citations.

Dr. Nemani's continuous innovations in Earth science and knowledge sharing have had an immeasurable impact on the understanding of our planet. His collaborations contribute to NASA's charter to improve our quality of life, advance economic opportunities, foster planetary stewardship, and contribute to greater public awareness of the Earth system and global habitability.



Distinguished Service Medal

Melanie W. Saunders

For distinguished service and extraordinary contributions to NASA and the Agency's coronavirus response.

Ms. Melanie Saunders has shown exemplary leadership in her role as NASA's chief resilience officer. In this role, she focuses on the Agency's Coronavirus Disease 2019 (COVID-19) response and implementation of requirements related to the pandemic.

Ms. Saunders also oversees and integrates NASA's Future of Work program as it ties to the pandemic, including the return to more onsite work. She is responsible for the continued development and implementation of NASA's pilots, policies, and strategies, enabling a hybrid workforce and innovation in the workplace. Ms. Saunders reports to NASA's Deputy Administrator.

She previously served as NASA's Deputy Associate Administrator, assisting the NASA Administrator and senior managers in implementing all aspects of the Agency's functions, policy, and integration of programs.

Prior to her move to NASA Headquarters, Ms. Saunders was the acting Deputy Director of NASA's Johnson Space Center in Houston, from February to June 2018, and the Associate Director since 2009, managing one of NASA's largest installations, with nearly 11,000 civil service and contractor employees – including those at White Sands Test Facility in Las Cruces, New Mexico – and an annual budget of approximately \$5 billion. She oversaw a broad range of human space flight activities. Prior to being named Associate Center Director, Ms. Saunders served as Associate Manager of the ISS Program from 2005 to 2009 during the most intensive phases of ISS assembly.

Ms. Saunders joined NASA in 1994, negotiating international agreements and managing export control for the ISS Program.



Distinguished Service Medal

Gabe Sherman

For distinguished service, as advisor and leader, to NASA's mission and the core values of the Agency's programs.

Mr. Gabe Sherman served NASA as Chief of Staff from 2018 to 2021. He was the principal advisor to the Administrator and Deputy Administrator. Mr. Sherman helped lead the Agency to successfully return human space flight to American soil and in securing international and bipartisan Congressional support for NASA's Moon to Mars efforts, including the Artemis program.

He effectively communicated the vision and priorities of NASA leadership to officials in charge, creating alignment across the Agency. He spearheaded NASA's strategic communications efforts, establishing a team comprising representatives from the Administrator's suite; offices of Communications, Legislative Affairs, STEM Engagement, International and Interagency Relations; and all four mission directorates spanning all of NASA's missions – Aeronautics, Science, Space Technology, and Human Exploration and Operations. This resulted in unparalleled planning, communication, and collaboration around Agency priorities and produced measurable increases in support for NASA's Moon to Mars efforts among the NASA workforce, industry, Congress, international partners, academia, the media, and the general public.

Mr. Sherman actively shaped NASA's response to the Coronavirus Disease 2019 (COVID-19) pandemic, serving on the leadership team responsible for formulating and communicating the Agency's plans. He guided NASA's response to the social unrest in 2020, collaborating with the Office of Diversity and Equal Opportunity to develop real, meaningful actions to promote unity and diversity across the Agency that resulted in adding "Inclusion" to the core values of NASA.



Distinguished Service Medal

Mark A. Skoog

For decades of exemplary work towards the development of advanced automated technologies that have already proven to save lives and aircraft.

Recognized as one of the Nation's leading innovators in the field of aerospace safety and autonomy, Mr. Mark Skoog has worked passionately for over 25 years on developing, testing, and fielding ground- and air-collision avoidance systems and related technologies. He has worked tirelessly with industry and Government to ensure this vital technology gets implemented into the Nation's fighter aircraft.

Mr. Skoog's vision for these technologies has been realized through the Ground Collision Avoidance System (GCAS) technology's current fielding in the F-16 fleet. To date, GCAS is credited with saving 10 aircraft and 11 lives. The F-22 and F-35 aircraft will soon receive GCAS technology, further advancing United States (U.S.) interests. The National Aeronautic Association awarded the Automatic Ground Collision Avoidance System (Auto GCAS) team the 2018 Robert J. Collier Trophy "for the greatest achievement in aeronautics or astronautics in America, with respect to improving the performance, efficiency, and safety of air or space vehicles." Mr. Skoog and his team also won the 2020 U.S. Geospatial Intelligence Foundation's achievement award for his work on the terrain system development and evaluation for Auto GCAS.

Throughout his career, Mr. Skoog has worked to bring these capabilities to other military platforms through his automatic ground- and air- collision avoidance systems and civil applications for commercial, remotely piloted aircraft, and general aviation, and has pursued implementations in the automotive arena and the nascent Advanced Air Mobility domain of electric aircraft and rotorcraft.

His maturation of the original GCAS technology revealed a need for greater modularity and adaptability, the incorporation of which allowed for its use in several applications. When using the collision avoidance modules with other safety systems such as Geo-Fence and a forced landing system, the Expandable Variable Autonomy Architecture (EVAA) was born. The EVAA software system prioritizes human safety over preventing property damage and prioritizes preventing damage over the completion of the mission by following a set of programmed rules of behavior. These rules allow EVAA to manage the flight's mission intent better while maneuvering within the acceptable performance limits of the aircraft, much like how a pilot manages a safe flight.

Leveraging this new architecture, Mr. Skoog applied for a Department of Defense Joint Capabilities Technology Demonstration (JCTD) project in 2018. JCTD projects develop technologies that have the greatest promise to advance new capabilities across many agencies within the DoD. Mr. Skoog's Resilient Autonomy (RA) Project, which employs EVAA, was selected as the highest-ranking project funded that year. The many years of EVAA's development served as the foundation for the RA Project.

Mr. Skoog has worked diligently to ensure that NASA Armstrong Flight Research Center's first JCTD project ran effectively and efficiently. When the pandemic vastly changed the very essence of work, Mr. Skoog demonstrated his ingenuity and ability to keep the mission moving forward by quickly changing the project's focus from flight activities to simulation and software development. Team members were able to work independently and remain very productive. Mr. Skoog's continued contributions to the safety of the Nation's airspace have poised this technology to be a candidate for a standard safety feature on all aircraft.



Distinguished Service Medal

Dr. H. Philip Stahl

For outstanding contributions to science and technology development in the optical sciences that facilitate enduring U.S. and Agency leadership in space telescope design.

Dr. Philip Stahl has been an exceptional contributor to NASA's optical space sciences. He has led the design, analysis, calibration, and testing of monolithic and segmented, large, ground-based telescopes such as the Multiple Mirror Telescope and the W.M. Keck; the space-based James Webb and Nancy Grace Roman instruments; and mission concepts like the

Habitable Exoplanet Observatory and the Large Ultraviolet Optical Infrared Surveyor.

His achievements in the field of optics and its impact to furthering NASA science cannot be overstated. His work focuses on optical sciences engineering, metrology, phase-measuring interferometry, thermal effects on mirrors and supporting structures, and advancing lightweight mirror technology for spaceborne systems.

In the late 1990s, Dr. Stahl helped pioneer new lightweight mirror technologies as principal investigator for the Next Generation Space Telescope Mirror System Demonstrator and the multi-agency (NASA/Air Force Research Laboratory/National Reconnaissance Office) Advanced Mirror System Demonstrator programs, developing design approaches and manufacturing processes that resulted in mirrors that met the needs of the James Webb Space Telescope and were successfully applied to other national programs. Dr. Stahl promoted the development of a high-fidelity optical test facility at Marshall Space Flight Center (MSFC) that enabled critical testing capability to validate the properties of new materials, performance of new design approaches, and effectiveness of new fabrication techniques.

More recently, Dr. Stahl led, with industry, the Advanced Mirror Technology Demonstrator program, developing thermally stable, lower cost, stacked core lightweight mirror technologies demonstrated using a 1.5-meter pathfinder, the positive results of which enabled spaceborne glass mirrors larger than 4 meters with very deep cores. He also led an effort to develop the use of thermal input into a mirror to maintain uniform temperature during a spacecraft slew, resulting in increased science time. In the last 10 years, his team at MSFC has been able to secure highly competitive NASA Strategic Astrophysics Technology grants to advance the fields of design, manufacturing, testing, and ultra-stable high precision telescope systems for upcoming NASA missions.

Dr. Stahl has generously shared his expertise by serving in multiple NASA peer-review optics panels for mission concepts, optical components, mirror designs, and experimental laboratory investigations. Throughout his career, he has advanced national capabilities in optical sciences and technology as a result of his work across industry, academia, NASA, and multiple Government agencies. His breadth of knowledge, insights, and achievements in the field of space optics have furthered the readiness of several mirror technologies.

Under his leadership, the annual Mirror Tech Days conference, initiated and frequently chaired by Dr. Stahl, has become a well-attended, prominent national forum for the advancement of mirror design, fabrication, support systems, and testing. This forum encourages collaborative research and development opportunities between high-tech startups, small and large national and international industry partners, NASA Centers, and other agencies. He is a national and international leading authority with recognized fellowships from the Optical Society of America (OSA) and the International Society for Optics and Photonics (SPIE), the latter he served as President.



Distinguished Service Medal

Patrick C. Stoliker

For 27 years of extraordinary and distinguished service to NASA, culminating as Armstrong Deputy Center Director.

Mr. Patrick Stoliker continuously took on roles of more significant technical and management responsibility since beginning work for NASA in 1994 – culminating in his assignment as Deputy Center Director of Armstrong Flight Research Center (AFRC) in March 2010 through February 2022 when he

retired.

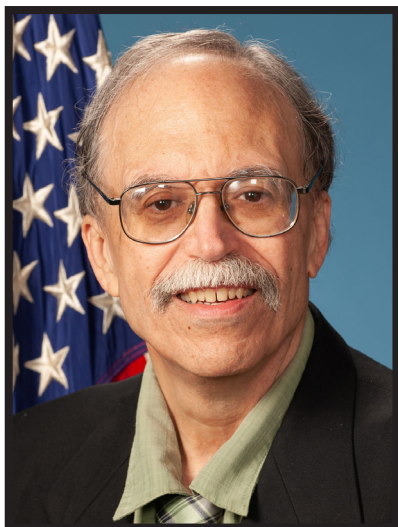
He excelled at leading the technical and mission support responsibilities as the Center conducted missions for every Agency Mission Directorate. His credibility and proactive approach made him a respected representative for the Center at Headquarters (HQ). He was an active and respected member of the Council of Deputies since its inception. He took to heart the assignments from the Associate Administrator to increase the efficiency of Agency processes.

Prior to his assignment as Deputy Center Director, Mr. Stoliker filled a critical void in the Center leadership team as the Deputy Associate Director for Operations and Associate Director for Operations from February 2009 through March 2010 when key personnel retired. He provided the leadership and oversight of the Center's technical organizations (Flight Operations, Test Systems, Safety and Mission Assurance, and Research and Engineering) during the safe execution of the Orion pad abort test and SOFIA first flights. His first senior leadership position was Director for Research Engineering from October 2005 to February 2009 where he formulated research activities and coordinated the research and support engineering for all AFRC projects including advocacy of a large-scale blended wing body aircraft. He emphasized technical and leadership development of the 200-person engineering staff.

In his four significant and increasingly challenging SES leadership positions at AFRC – Director for Research and Engineering, Deputy Associate Director for Operations, Associate Director for Operations, and Deputy Director, he annually demonstrated the ability to improve his performance and increase his engagement as a Center leader.

Mr. Stoliker accepted details to support Agency initiatives. He served as the chairman of the Mobile Launch Pad technical review. From 2004 to 2005 he served a detail to the Crew Exploration Vehicle Program Office at NASA HQ as the Test and Evaluation Development Lead. He stepped up to the responsibility for leading the Integrated Financial Management Program from 2002 to 2003 as AFRC's Program Manager, contributing to the string of clean financial audits. He is a respected authority in unique aircraft configuration airworthiness, having served as Chair of the X-43 Vehicle 1 and X-38 Vehicle 132 flight readiness reviews and Co-chair for the Global Observer flight readiness review. As a U.S. representative and Chairman of the NATO Flight Test Technology Team, he received the 2007 NATO/Research and Technology Organization Scientific Achievement Award recognizing the advancement of flight test knowledge across NATO countries.

Throughout his NASA career, Mr. Stoliker was a tireless champion for diversity and inclusion in the Agency and as a member of the Advisory Board for the Aerospace Engineering Department at California Polytechnic University, San Luis Obispo. He fostered communication and teamwork by example. He demonstrated the ability to reach out across NASA, openly encouraged dissenting opinions, and publicly praised those who present alternate or opposing points of view. His work ethic and leadership skills clearly contributed to Center and Agency success in all mission areas.



Distinguished Service Medal

Dr. David A. Tipton

For distinguished, sustained commitment and leadership of KSC's health and medical program, including during an unprecedented pandemic, enabling mission success.

Dr. David Tipton's exceptional commitment and contributions to the health and safety of the world's preeminent launch complex workforce have profoundly enabled continuity of operations for Government and commercial space access.

At Kennedy Space Center (KSC), he serves as the Chief Medical Officer and the Health and Medical Technical Authority for all programs, overseeing medical services for all civil servant, contractor personnel, concessionaires, guests, and visitors. That includes planning and managing onsite clinic operations, occupational medicine services, aerospace medicine support, medical consulting services, emergency medical services, wellness and employee assistance program support, fitness center operation, musculoskeletal rehabilitation services, and clinical laboratory services. He closely collaborates with KSC and programs to ensure comprehensive environmental health services including industrial hygiene, public health and sanitation, and health physics support.

To ensure the health and safety of the flight crew for every mission, Dr. Tipton diligently supervises and collaborates with medical professionals in aerospace operations and systems. This includes the flight crew health stabilization program, flight crew medical support, launch and landing emergency medical care coordination, survival and rescue, emergency evacuation planning, and identification and mitigation of potential hazards.

Dr. Tipton was instrumental in the success of several of NASA's highest profile programs and launches in the middle of the worst pandemic in 100 years. During this unprecedented period, he led a team of radiation protection professionals for the Mars 2020 major radiological source launch contingency planning, prelaunch payload processing, and launch activities. He oversaw medical operation preparations and support of SpaceX Demonstration Mission-2, Crew-1, and Crew-2, updating medical plans, establishing medical screening and certification requirements, and coordinating the outfitting and patient loading procedures for medical evacuation. He also supported numerous Health and Medical Technical Authority activities for Exploration Ground Systems spanning readiness reviews from stacking, integrated testing, and checkout along with design reviews for Mobile Launcher-2 and Emergency Egress System. He and his team influenced several design changes to make the system safer and easier to use.

Dr. Tipton spent tireless days, weeks, and months leading and supporting critical activities in response to the Coronavirus Disease 2019 (COVID-19) pandemic. His exceptional attention to detail and promulgation of Centers for Disease Control and Prevention guidelines were critical in minimizing KSC's onsite risk of infection. As a pivotal member of the KSC Coronavirus Executive Integration Team, his steadfast leadership and meticulous use of 100% contact tracing of all cases likely resulted in a significant avoidance of human health consequences. Leveraging his in-depth knowledge of occupational and aerospace medicine, Dr. Tipton has provided unparalleled service to all KSC organizations in matters of compliance with health laws, standards, and practices. From the Space Shuttle Program to present day, Dr. Tipton's contributions have preserved the health of personnel while enabling mission critical activities and launches. His contributions to space exploration resonate with the well-being and productivity of every spaceport employee.



Distinguished Service Medal

Bobby J. Watkins

For exceptional leadership in the evolution of the Human Exploration Development and Operations Office and management of Agency future program and projects.

Throughout his 34-year career, Mr. Bobby Watkins has held several significant leadership positions at NASA and currently serves as the Director of the Human Exploration Development and Operations (HEDO) Office at Marshall Space Flight Center (MSFC).

Mr. Watkins has demonstrated sustained extraordinary service and exceptional leadership in the evolution of the HEDO organization, providing project management and execution of the Agency's future program and projects. His current responsibilities include leading MSFC's role in development of habitation systems for NASA's Artemis program; ISS performance of round-the-clock payload operations; development and sustainment of the station's Environmental Control and Life Support System; Human Landing System activities for NASA's Commercial Crew Program and the Orion Launch Abort System; and development and operation of ground support systems.

From April 2015 to January 2017, Mr. Watkins served as director of the NASA Michoud Assembly Facility in New Orleans. This multi-tenant manufacturing facility is also where the Space Launch System (SLS), the most powerful rocket in history, and the Orion spacecraft are being developed for NASA's next step in space exploration.

From 2010 to 2015, Mr. Watkins was the director of the Office of Strategic Analysis and Communications at MSFC. In 2014 he served a 1-year special assignment to NASA Headquarters as director of the Legislative Liaison Division. Prior to joining MSFC, he served as chief of staff at NASA Johnson Space Center (JSC) from 2007 to 2010, and was JSC's chief engineer from 2005 to 2007. From 2001 to 2005 Mr. Watkins served at NASA Headquarters as manager of the Space Shuttle Planning and Evaluation Office and as the Space Shuttle Orbiter Element technical liaison. Mr. Watkins began his NASA career in JSC's Mission Operation directorate in 1986, and from 1995 to 2001, he held increasingly vital leadership roles in the Space Shuttle Program at JSC.

He received the 2016 Presidential Rank Award of Meritorious Executive, NASA Exceptional Achievement Medal, NASA Outstanding Leadership Medal, Exceptional Service Medal, and several group awards. He also served on NASA's Astronaut Selection Board in 2009, 2013, and 2017.

Mr. Watkins is a member of the National Space Club, American Astronautical Society, National Society of Black Engineers, International Astronautical Federation Space Operations Committee and the National Technical Association. He has moderated panels and spoken at many conferences and events, including the International Astronautical Congress, ISS R&D, and the Von Braun Symposium. Mr. Watkins earned a bachelor's degree in mathematics in 1986 from Albany State University in Albany, GA.

As the Agency moves away from traditional programs and projects with heavy Government insight and oversight toward a model with shared industry assurance and industry-led missions, Mr. Watkins has embraced this culture change, and he is the leader with the vision, passion, and drive to enable these changes, not only within MSFC but also across the Agency. His peers and subordinates naturally gravitate to his energetic, enthusiastic, style and look for him to set a vision for culture change. Mr. Watkins is a well-respected Agency role model due to his vision, passion, outstanding leadership, integrity, and dedication to safety.



Distinguished Service Medal

Dana J. Weigel

For extraordinary strategic leadership, demonstrated most profoundly during environments of change, uncertainty, or crisis, in the service of NASA's human space flight mission.

With over 27 years of service, Ms. Dana Weigel has distinguished herself as one of the preeminent risk management leaders in the Agency while conducting herself with extraordinary integrity, technical brilliance, and compassionate leadership.

As a decorated Extra-Vehicular Activities (EVA) Officer, Flight Director, and Program Manager, she has had principal roles in the resolution of the most significant existential risk items in the Space Shuttle, ISS, exploration, and commercial space flight programs. Ms. Weigel is renowned for strategic brilliance in the mitigation of risk and in the formulation of approaches to manage through uncertainty in times of political, technological, and economic change.

She began her career in Flight Operations, from EVA operator to her principal involvement in developing EVA techniques to mitigate potential failures of the Space Shuttle Thermal Protection System, including failure modes that doomed the Space Shuttle Columbia. These techniques were in the critical path for NASA's Return to Flight efforts and were maintained for the remainder of the Space Shuttle Program. She was also a principal EVA lead for the final flight to the Hubble Space Telescope (HST), enabling repair and maintenance techniques that enabled the HST to provide world-changing astrophysical observation beyond its planned lifetime.

Ms. Weigel was then asked to serve in the critical risk management role of ISS Flight Director. With the looming retirement of the Space Shuttle fleet and capability to resupply the ISS with critical spares and supplies, she led a team in the development of the robotics-assisted rendezvous and capture techniques for the first visiting vehicle that employed this approach, the H-2B Transfer Vehicle (HTV). The success of the HTV program enabled subsequent successes with U.S. commercial partners developing cargo vehicles using the same flight profile, providing a critical lifeline to extend the life of the ISS platform.

She was chosen by the ISS Program Manager to lead the investigation into water in the helmet of an EVA crewmember as part of leading the EVA anomaly resolution team. through a year-long investigation and developed mitigation strategies that remain in place today.

After the EVA investigation concluded, Ms. Weigel was asked to manage the ISS Vehicle Office. In this role she has been the pre-eminent leader in management of existential risk to the ISS. She led the team through the response to the failure of three consecutive cargo vehicles and developed a procurement strategy to allow the ISS to continue with an adequate supply of critical spares. She also led the team through the response to the Soyuz 56 anomaly, which presented a risk to continuous U.S. crew presence on ISS. Ms. Weigel also enabled continuous operations of ISS supply chains during disaster responses to Hurricane Harvey, the Coronavirus Disease 2019 pandemic, and Government shutdowns.

As Vehicle Manager Ms. Weigel was the architect of the visionary ISS plans for the implementation of a full-scale upgrade to the ISS life support system, with an eye toward informing the designs of spacecraft and platforms in the Agency's exploration programs. She provides significant leadership to enabling the ISS to lead through the Agency's push for the commercialization of low-Earth orbit, leveraging her partnerships to enable private astronaut missions to the ISS.



Distinguished Service Medal

Dr. Gloria K. Yamauchi

For transforming NASA's urban air mobility vehicle development and making critical research contributions to the Nation's vertical lift technology program.

Dr. Gloria Yamauchi is a leader in NASA's vertical lift technology program and has conducted groundbreaking rotary wing aerodynamics and acoustics research for over 38 years. Over the past 5 years, she developed and implemented research strategy for the Agency-wide Aeronautics Research

Mission Directorate (ARMD) Revolutionary Vertical Lift Technology (RVLT) Project, and completely transformed the research portfolio for vertical lift vehicles.

The RVLT Project executes the only vehicle-centric technology portfolio for all ARMD work in urban air mobility (UAM) across four NASA Centers. Under Dr. Yamauchi's direction and guidance, an overarching strategy of transformation was implemented from large, piloted turboshaft rotorcraft to an all-electric Vertical Takeoff and Landing (eVTOL) responding to emerging market needs of the UAM market, estimated to grow to \$15.5 billion by 2027 from \$2.6 billion in 2020. Her actions will enable United States (U.S.) companies to have the technological competitive edge to make a short-duration, readily available, affordable air travel for the public. She conducted two RVLT Conceptual Design Toolchain Workshops that will enable U.S. industry to incorporate NASA's design and analysis technology for eVTOL aircraft to achieve community acceptance for noise emissions.

Over her career, Dr. Yamauchi has collaborated and conducted national and international team research in small-scale rotor and rotorcraft hover wind tunnel testing; full-scale isolated helicopter main and tail rotor testing; isolated tilt rotor performance, acoustics and full tilt rotor aircraft flow fields, including mutual aerodynamic and flow field interactions between aircraft including shipboard operations; and multiple flight test programs for airloads, loads, and in-flight acoustics. She led the quarter-scale V-22 Osprey Tilt Rotor Aeroacoustic Model international test campaign in German-Dutch wind tunnels and enabled the first comprehensive understanding of the V-22 tilt rotor flow field during operation near ships. She conducted the largest far-field particle image velocimetry measurement inside the world's largest wind tunnel during the UH-60A Airloads Rotor test campaign. This resulted in Dr. Yamauchi's appointment as Rotorcraft Sector Lead from 2003 to 2005. She then served within the ARMD Rotary Wing/Vertical Lift Project in many leadership capacities including Project Manager, Project Scientist, Associate Principal Investigation, Discipline Lead, and Technical Lead.

In 2009 she co-edited the 394-page NASA Technical Publication (TP) that presented a comprehensive assessment of the Agency's rotorcraft research and established goals for NASA's rotorcraft technology research effort. Ten years later, Dr. Yamauchi edited the 538-page follow-up NASA TP, documenting ARMD accomplishments of the prior decade against goals set in 2009. These publications stand as the seminal reporting of over two decades of NASA's contributions to the Nation's vertical lift technology efforts. She currently serves as the Co-Lead for the joint NASA-Federal Aviation Administration UAM Aircraft Design and Development Working Group.

Dr. Yamauchi's contributions established NASA as a world leader in rotorcraft technology development. She mentors early careers guiding them on technical excellence in their research. Her programmatic leadership of the Agency's rotorcraft effort has sustained and ensured a vibrant future for the entire vertical lift community.



Distinguished Service Medal

Dr. Thomas H. Zurbuchen

For distinguished service, extraordinary contributions, and outstanding leadership to NASA's mission and the Nation's space program.

Dr. Thomas Zurbuchen has displayed visionary leadership with a track record of championing innovation to produce exceptional results. He rapidly transformed NASA's strategic approach to mission management to produce extraordinary science returns. He leads a portfolio of ~100 missions covering science and application topics around all disciplines.

He leads NASA in prioritizing science missions based on inputs from the National Academies, national policy and leadership objectives, and the desire for strong commercial and international partnerships. His leadership of the science portfolio has been instrumental in achieving important societal value such as improved weather and space weather predications, novel sensor technologies of broad applicability, and the development of economic opportunities of new and existing U.S. companies.

Since 2016, he has started nearly 30 missions and mission concept studies totaling over \$10 billion in development cost and research efforts, including: Dragonfly, SPHEREx, and the Mars Sample Return mission. During his tenure, the challenging Parker Solar Probe was put on orbit at ~\$75 million below cost, the first strategic mission by NASA to be developed below cost.

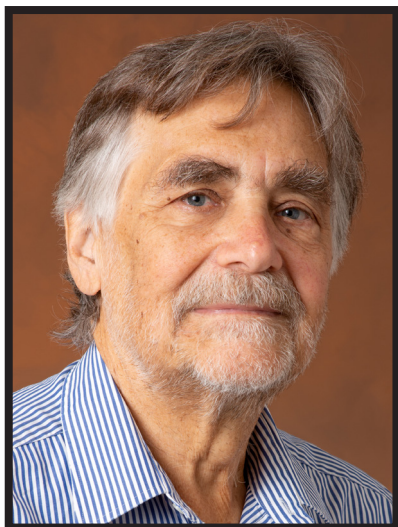
Even during the Coronavirus Disease 2019 pandemic, Dr. Zurbuchen enabled significant technical progress on all missions while simultaneously protecting the health of the NASA community. As a result of the management innovations he introduced during this challenging time, the Agency was able to successfully launch the Mars 2020 and Sentinel-6 Michael Freilich missions, conduct the OSIRIS-REx Touch-And-Go (TAG) sample collection event, and land the Mars 2020 Perseverance rover. Mars 2020 was the first multibillion-dollar Mars mission developed on schedule in NASA's history. By concentrating on performance, he masterfully brings missions in below cost and on schedule. The February 2020 launch of the Solar Orbiter was on time and 26% under its baseline cost. More recent launches during the pandemic all occurred on schedule as well. The Sentinel-6 Michael Freilich mission, the first of two Sentinel-6 satellites developed in partnership with the European Space Agency, launched in November 2020 at 13% under the baseline. While Mars 2020 did experience some cost increase, he balanced the priority to complete the mission in time to meet the 2020 launch window versus delaying to the next launch window 26 months later which would have cost 10 times more than the overrun.

In March 2018, he established an Independent Review Board (IRB) to evaluate all factors influencing the James Webb Space Telescope (JWST) program and to ensure that the approach to complete the integration and testing, the launch campaign, and the telescope's commissioning was appropriate for NASA's next flagship observatory. In August 2018, he re-enlisted the IRB to assess NASA's progress implementing the 32 recommendations from the initial assessment. He also instituted new processes that ensured transparent communications at all levels of the Agency and with its JWST commercial and international partners. Consistent with the new program plan under his direction, JWST launched in December 2021.

Dr. Zurbuchen also passionately developed a multipronged training and engagement activity to increase both quality and diversity of science and technology leadership throughout the U.S. and promote inclusion, equity, and accessibility across all elements of NASA's science portfolio.

*Distinguished
Public Service Medal
Recipients*





Distinguished Public Service Medal

Dr. Charles A. Beichman

For distinguished service, leadership, pioneering scientific contributions, and public engagement to NASA and the U.S. infrared astrophysics and exoplanet science communities.

Dr. Charles Beichman is an internationally known scientist and a visionary advocate for infrared astronomy and exoplanet science. He has made extraordinary scientific contributions to NASA astrophysics missions and provided leadership to the infrared astrophysics and exoplanet science communities.

Dr. Beichman has made major discoveries in the fields of solar-type star formation, debris disks, brown dwarfs, and the search for exoplanets, publishing over 300 refereed articles, 44 as first author, and setting new directions in the search for life elsewhere in the universe. He was the Project Scientist for the Infrared Astronomical Satellite (IRAS), the first space telescope to conduct an infrared all-sky survey, and had major responsibilities for the 2-Micron All-Sky Survey (2MASS). He was a key member of the Multiband Imaging Photometer for the Spitzer Space Telescope team, leads the exoplanet science program for the James Webb Space Telescope Near-Infrared Camera team, and serves on the Science Investigation Team for microlensing with Roman Space Telescope.

Dr. Beichman has held leadership roles ranging from science projects to national committees. He was lead editor of the IRAS Explanatory Supplement in 1988, which set the standard for modern releases of major data products from NASA Astrophysics missions. From 1988-1990 he joined Dr. John Bahcall as Executive Secretary of the Astrophysics Decadal Survey Committee which identified the Space Infrared Telescope Facility as the highest priority NASA astrophysics mission for the 1990s, and led to the development and launch of the Spitzer mission. From 1985 to 1989 he served as Project Scientist of the Infrared Processing and Analysis Center (IPAC). As Director of IPAC from 1991-1998, he led development of the data system for 2MASS, the first all-digital, high-resolution, all-sky survey, solving the daunting computing challenges of the largest processing task in astronomy at the time. It exceeded its requirements in calibration and calibration uniformity across the sky, even though the data came from two different ground-based telescopes, one in the Northern Hemisphere, one in the Southern.

In 1996 he led the development of A Road Map for the Exploration of Neighboring Planetary Systems (ExNPS) and was lead editor of the ExNPS Report leading to today's NASA Exoplanet Exploration Program and driving missions including Kepler, the Transiting Exoplanet Survey Satellite, coronagraphs on two James Webb Space Telescope (JWST) instruments, and the coronagraph instrument on the Roman Space Telescope. He also served as Chief Scientist of the Astronomy and Physics Directorate at NASA's Jet Propulsion Laboratory (2001-2003).

He is Executive Director of the NASA Exoplanet Science Institute (NExSci) at IPAC, which provides operational software infrastructure and support, archiving of and access to observational data, and consultation for all stages of a project, from concept development and proposal writing to implementation and analysis. More recently, Dr. Beichman's pioneering recognition of the importance of ground-based radial velocity measurements in determining the masses of exoplanets and as essential precursor measurements for major space missions drew a recommendation in the 2018 National Academies Exoplanet Science Strategy on the critical role of radial velocity measurements that led directly to NASA's Extreme Precision Radial Velocity Initiative.



Distinguished Public Service Medal

Dr. John M. Blaisdell

For exceptional public service in support of critical NASA Earth remote sensing research.

Throughout a long and distinguished career at NASA Goddard Space Flight Center (GSFC), Dr. John Blaisdell has made a long-lasting contribution to the Earth remote sounding science, demonstrating an extraordinary commitment to our Center's mission and the general scientific society.

He has set an inspiring example of ingenuity, integrity, and generosity for peers and younger generations of scientists. For the past 30 years, Dr. Blaisdell has been providing outstanding contributions critical to the continued success of NASA's use of satellite infrared and microwave observations for improving the study and understanding of climate and weather processes.

As part of the GSFC Sounding Research Team, he has played a key role in the development of the Atmospheric InfraRed Sounder (AIRS) Science Team algorithm, which set the foundation of modern hyperspectral remote sensing. Today, legacy algorithms of the AIRS Science Team software are operationally run in numerous academic, research, and operational agencies across the world, for the advancement of climate science and numerical weather prediction.

Thanks to his unique technical expertise, gregarious nature, and exceptional poise, Dr. Blaisdell has played a critical role in bringing together the complex and multidisciplinary dimensions of Earth remote sensing, integrating the theory of radiative transfer and inverse methods through high-computing information technology with scientific demonstrations and validation. His unwavering dedication was instrumental in turning the pioneering intuition of hyperspectral thermal sounding into practice, leading to a 20-year uniformly processed record infrared and microwave data from the Aqua satellite, now offered to the worldwide science community for nowcasting and regional forecasting, climate science, and numerous societal applications of high impact for human health and the economy.

Dr. Blaisdell is widely recognized as a well-regarded authority in his field. His expertise is helping shape the design and implementation of future generation sounding systems. At the culmination of a long and distinguished career, he remains curious and young at heart, always challenging himself and his peers with innovative ideas. He is wholeheartedly generous with his time and energy, happily mentoring younger colleagues and making sure that his expertise is passed on to a new generation of scientists. Dr. Blaisdell admirably embodies all the core values that make GSFC and NASA a unique, thriving scientific community.



Distinguished Public Service Medal

Colonel Robert P. Bongiovi

For creating a culture of cooperation that maximizes launch opportunities for National Security Space missions and NASA human and robotic space flight missions.

Colonel Robert (Rob) Bongiovi, Launch Enterprise Director for the United States (U.S.) Space Force (USSF), recognized the criticality of the Orbital Flight Test-2 (OFT-2) mission and its future of commercial human space flight to the ISS, a steppingstone to further human exploration with the Artemis program.

After resolving issues discovered in OFT-1, the OFT-2 mission was due to launch on an Atlas rocket in March 2021. This historic mission would help the Commercial Crew Program (CCP) to meet NASA's goal of robust commercial low-Earth orbit space transportation systems, carrying astronauts from U.S. soil to and maintaining presence on the ISS. Colonel Bongiovi was instrumental in enabling a launch opportunity of OFT-2 with minimal impact to important military and scientific missions.

The Atlas launch manifest was more congested in a 9-month period than in many years, with OFT-2, three National Security Space (NSS) missions, and Landsat 9, Lucy, and Geostationary Operational Environmental Satellites-T science missions. With little margin in the schedule, even a small ripple could cause missions to slip. Boeing realized it would not be able to achieve its March/April 2021 launch date, and the next chance would be March 2022, creating a significant risk to the human space flight program. Colonel Bongiovi, a strong partner with NASA for many years, worked with his team and NASA to find a sliver of opportunity in late July 2021 for the OFT-2 launch. By working this opportunity for OFT-2 and delaying an NSS mission, he managed to keep the remaining missions in 2021 without impacting Lucy's planetary window. He maximized opportunities for the overall launch industry and set a leadership example by stating his goal at the outset that it was not about individual missions, but about optimizing the overall capability of getting missions to space.

After this outstanding effort, an unexpected anomaly occurred with the Atlas vehicle for the first mission in the launch queue, which caused further disruption in the manifest. To protect the agreed-to launch date for OFT-2, Colonel Bongiovi again worked across the USSF to move two critical NSS missions, which were at the launch site. An added complexity was no place to leave the waiting NSS spacecraft because the facility was overbooked with fall missions and this additional manifest movement. Rob worked as a partner with both CCP and the Launch Services Program to understand all the complexities and minimize impact to their missions as well as the USSF missions.

Before OFT-2 was to launch, the ISS encountered a significant issue with a Russian module that had planned to dock to it. OFT-2 missed its launch opportunity; however, it had confirmed backup dates, which could keep the rest of the Atlas launch queue on a tight but achievable schedule through mid-2022. Those backup opportunities were no longer confirmed when a U.S. Navy (USN) priority operation came into conflict due to a schedule delay.

Prioritizing one mission over another is complex when weighing national security, space flight, and science missions with planetary window constraints. NASA once again called on Colonel Bongiovi to work to aggressively resolve this unacceptable situation. Through his initiative, USN personnel were briefed on the criticality and became part of the solution. Ultimately, the launch opportunities were "resecured," and OFT-2's 2022 uncrewed test flight will be a step toward a NASA certified crewed transportation system.



Distinguished Public Service Medal

Dr. James L. Burch

For outstanding and visionary science, mission, and community leadership that resulted in transformative advances in heliophysics, space weather, and planetary science.

Dr. James Burch, in his extraordinary career as a scientist and leader for some of NASA's most innovative space physics missions, embodies the NASA Distinguished Public Service Medal recognition of service, ability, and vision.

As an experimental space physicist, Dr. Burch devoted his career to investigating the interaction of the solar wind with the magnetospheres of the Earth and Saturn and with comets. His extensive body of published work helped establish the field of space weather and its importance in protecting our astronauts when working in space. Dr. Burch has served NASA as a Principal Investigator (PI) on numerous missions and research grants. His earliest instrument contributions were to the Dynamics Explorer and the Space Shuttle's ATLAS-1 missions. He conceived the concept for NASA's first medium-class Explorer, the Imager for Magnetopause-to-Aurora Global Exploration (IMAGE) mission. Pioneering several new observing techniques, IMAGE observed for the first time the global structure of plasmas in Earth's magnetosphere.

As PI, Dr. Burch provided both technical and scientific leadership, publishing numerous, definitive papers using observations from the mission, which profoundly changed our understanding of how space weather affects daily life on our planet. He also served as PI of NASA's Ion and Electron Sensor (IES) on the Rosetta mission, the first to escort a comet as it orbited the Sun. His instrument was the first to observe, up close, how the plasma environment on a comet changes as it is subjected to the increasing intensity of the Sun's radiation. This helped NASA learn about the origin and evolution of our solar system and the role comets play in the formation of planets.

Dr. Burch has devoted an extraordinary amount of time to NASA's most important advisory committees. His leadership and vision in no small part defined the course of NASA's space physics and aeronomy research for more than 2 decades. He chaired the NASA Space Physics Strategy Implementation Study in 1989 and later chaired the first-ever Sun-Earth Connection (now Heliophysics) Roadmap, followed by the first Space Physics Decadal Survey in 2003. He chaired the National Research Council's Committee on Solar and Space Physics and led more studies for NASA than any other chair, past or present. For his years of service, he was named a lifetime national associate of the National Academies. Dr. Burch currently serves as PI for the NASA Magnetospheric Multiscale (MMS) mission, comprising over 120 instrument components and bringing together co-investigators and collaborators from more than 30 institutions. Through his leadership, this NASA flagship mission has revolutionized the understanding of magnetic reconnection in space. This explosive process is responsible for space weather storms, the aurora, solar flares, and many other phenomena. When this mission is complete, Dr. Burch's work will effectively bring to fruition the extraordinary vision put forth by those first strategic plan panels he chaired.

In addition to his service to NASA, Dr. Burch has led many other community activities, including serving as editor of Geophysical Research Letters (1989–1993) and president of the American Geophysical Union (AGU) Space Physics and Aeronomy section (1996–1998). He received the Committee on Space Research's inaugural Jeoujang Jaw award in 2008. He was elected AGU Fellow in 1995 and received AGU's prestigious Fleming Medal in 2010 and its William Bowie Medal in 2021.



Distinguished Public Service Medal

Frank DeMauro

For exceptional leadership in the design and development of the Cygnus cargo vehicle, which has completed 13 successful missions to the International Space Station.

As Sector Vice President and General Manager for Tactical Space at Northrop Grumman, Mr. Frank DeMauro has led the design, development, and operation of the Cygnus commercial resupply vehicle for more than 10 years. Over the course of 13 missions, the Cygnus vehicle has delivered nearly 90,000 pounds of cargo to the ISS and removed more than 50,000 pounds of trash.

With innovative solutions, a focus on customer satisfaction and value, and attention to detail, Mr. DeMauro has helped to create and sustain a successful commercial market in low-Earth orbit. The Cygnus vehicle has been a vital addition to the ISS mission and program. Originally designing a vehicle to launch a diverse set of science experiments, spare hardware, astronaut supplies, and to dispose of trash from the ISS, the team has continuously made improvements and added capabilities. By extending Cygnus' reach to include the ability to launch powered payloads, accommodate live rodents, load cargo within 24 hours of launch, dispose of unpressurized payloads, reboost the ISS, and perform extended free-flight missions with additional science experiments, the team has shown a desire and ability to continue to improve, provide increased value to the Government, and push the industry forward.

Mr. DeMauro has been part of the Cygnus program from the beginning. His leadership and insight have overcome challenges including designing and manufacturing the Cygnus vehicle utilizing an international, cross-cultural team; integrating Cygnus with the simultaneously developed Antares launch vehicle; collaborating with the Mid-Atlantic Regional Spaceport launch site at NASA Wallops Flight Facility; and developing a new control center in Dulles, VA. Through each of these challenges, Mr. DeMauro's steady leadership has resulted in a highly functional and successful team and program.

The success of the Cygnus team has demonstrated to the United States Government and private industry that commercial cargo vehicles are a safe, efficient, and economically sound method of performing cargo resupply to the ISS. This success has further led to additional commercial partnerships across the industry including crew transportation, lunar resupply and logistics, and commercial satellite launch and operation.

Mr. DeMauro has proven to be a leader in the aerospace industry throughout his distinguished career. With nearly 30 years of aerospace experience in design, development, and operations of flight hardware programs, he has fielded assignments including thermal and systems engineering, engineering management, and program leadership of numerous major NASA, defense, and commercial programs.

Mr. DeMauro was the Vice President of Engineering for Orbital Sciences in 2008-2009, managing more than 800 engineers and engineering technicians across multiple disciplines and leading companywide major technical issue resolution. Managing the largest satellite system built by Orbital Sciences, he was responsible for the delivery of geosynchronous communication satellites based on the GeoStar-2 platform. He served as the Senior Program Director for the AMC-5R and Optus D satellite programs and was the Director of Advanced Programs from 2000-2004.



Distinguished Public Service Medal

Dr. Margaret A. Frerking

For distinguished leadership and service to NASA and the Nation in the pursuit and advancement of the field of astrophysics and technology development.

Dr. Margaret (Peg) Frerking has exhibited distinguished leadership through her career with NASA. Her influence is evident from the technologies she has developed, the projects she has run, and the processes she has championed.

She came to the Jet Propulsion Laboratory (JPL) from Bell Labs in 1980, with a focus on technology for science instruments. She developed JPL's science and technology capability in millimeter and submillimeter-wave sensors and was a pioneer in the burgeoning field of terahertz technology, easily attracting talented young researchers eager to work with her. As a Group Leader (1984) and Supervisor of the Advanced Devices Group (1989), she helped deliver an instrument for the Microwave Limb Sounder carried on the Upper Atmosphere Research Satellite that established JPL as a leader in the submillimeter characterization of the upper atmosphere.

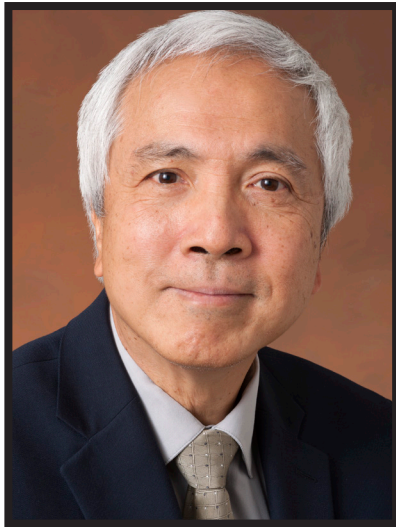
In 1982, the Astronomy and Astrophysics Decadal Survey recommended a Large Deployable Reflector (LDR) in space "to carry out spectroscopic and imaging observations in the far-infrared and submillimeter wavelength regions of the spectrum." Receiver technology was a key challenge. Dr. Frerking led the submillimeter technology program for the mission and built it into a world-leading effort. Recognizing the synergy between microfabrication and submillimeter-wave sensors, she hired and mentored Drs. Peter Siegel and Robert McGrath. She served as lead technologist for the pre-project of the LDR successor, the NASA submillimeter-wave telescope, which ultimately became the European Space Agency (ESA) Herschel Space Observatory. The Herschel HIFI instrument was the culmination of decades of studies and planning and showed the scientific power of high-resolution submillimeter spectroscopy from space.

Her reach as a technologist went beyond NASA. She co-created the Space Terahertz Conference, now in its 29th year of operation, and integrated into the IEEE with its own society, quickly bringing international recognition to JPL and NASA's submillimeter-wave technology efforts.

Dr. Frerking also took her technical, management, and partnership skills to the MIRO instrument project on ESA's Rosetta mission, this time as Project Manager. Under her leadership, JPL delivered an instrument that changed the way we view comets. Dr. Pierre Encrenaz of the French Academie des Sciences described her role as "enabling" for both HIFI and MIRO.

In 2006, Dr. Frerking was brought onto Kepler as Instrument Manager following a major cost overrun that nearly led to cancellation. She brought cost under control and resolved a serious electronics design flaw uncovered during observatory thermal vacuum testing. Later, as Associate Chief Engineer for JPL, she applied her knowledge as a technologist to define a technology readiness level evaluation process adopted by NASA, as a scientist to address how to flow science requirements effectively to create winning proposals, and as a manager to provide the interpretation of science and engineering requirements for inclusion in JPL's Flight Project Practices to optimize implementation by a project team while meeting the intent of the NASA Program Requirements.

Dr. Frerking has gone from science to technology development, to instrument development, to project management, and finally to JPL leadership. Throughout, she maintained her ability to publish scientifically relevant papers, with more than 100 publications between 1972 and 2015 and a citation list in the thousands.



Distinguished Public Service Medal

Dr. Fuk K. Li

For exemplary management of the Mars Exploration Program, including the successful execution of four orbiters, one lander, and four rover missions to Mars.

Dr. Fuk Li has guided the Mars Exploration Program for over 16 years, first as the Deputy Manager and then as the Program Manager of Mars Exploration Directorate at NASA Jet Propulsion Laboratory (JPL).

Under Dr. Li's leadership, several NASA missions were executed, including the Mars Global Surveyor orbiter, the 2001 Mars Odyssey orbiter, the Mars Exploration Rovers Spirit and Opportunity, the Mars Reconnaissance Orbiter, the Mars Phoenix lander, the Mars Curiosity rover, the Mars Atmosphere and Volatile Evolution (MAVEN) orbiter, and most recently the Mars Perseverance rover and Ingenuity helicopter.

Dr. Li has also led teams in the development of numerous Mars mission concepts, including those that led to the Mars Sample Return campaign. These missions are providing a greater understanding of Mars and will help lead to the achievement of NASA's science goals of determining if Mars ever supported life, understanding the processes and history of climate on Mars, understanding the origin and evolution of Mars as a geological system, to the ultimate goal of preparing to one day land a human on the surface of this planet.

Under Dr. Li's leadership, it is extraordinary that all nine of the missions executed during his tenure have achieved mission success. Dr. Li's steady stewardship of the Mars Exploration Program, including interfacing with the science community, NASA Headquarters and Centers, Congressional and Administration staff, and international partners, has ensured that NASA's Mars missions provide the maximum science value, technology infusion, and inspiration – not only to the American public, but to the world at large.

Processes and techniques that Dr. Li instantiated during his time as the Mars Exploration Program Manager relating to project management principles, interfacing with stakeholders, and the relationship between science, technology, and flight mission implementation will be used for decades in the future to extend upon his record of mission success. Dr. Li built the foundation for successful long-term relationship in Mars exploration between NASA and the European Space Agency (ESA).

Dr. Li faced and overcame significant challenges on the path to success. He recognized the need for an integrated Mars Relay Network that served United States and international providers of Mars orbiters, landers, and rovers. He directed the integration of the Ingenuity helicopter onto the Mars 2020 mission far later than new mission elements are typically incorporated into a mission. Dr. Li was instrumental in creating the architecture for the international Mars Sample Return campaign, bringing together a global science community and NASA-ESA implementation partnership that has enabled this very complex and challenging set of missions.

Dr. Li's ability to translate strategic objectives into clear tactical actions is superlative. His strategic vision has shaped the Mars Exploration Program in such a way as to advance the boundaries of knowledge of planetary geology, atmospheric science, and astrobiology while also maximizing the chances of mission success.



Distinguished Public Service Medal

David Parker (Awarded Posthumously)

For exceptional life-long dedication to Hubble operations and science objectives, satellite servicing technology developments, and the safety of the ISS and its astronauts.

Mr. Parker dedicated his life to NASA as a world-class multidiscipline engineer. He focused on maintaining science objectives by going above and beyond to ensure the performance and safety of NASA astronauts, assets, Hubble Space Telescope (HST), and the ISS.

From his vital contributions to HST to robotic satellite servicing as we know it today, Mr. Parker's engineering expertise and passion were second to none. He was a natural leader with an eye toward strategic systems engineering. His desire to learn and expand the field of engineering never waned over more than 30 years. His positive impacts on NASA projects were matched by his encouragement of coworkers and mentees. His creative processes guaranteed success on his projects, and his dedication to seeing tasks to closure was impeccable.

Among his greatest contributions to NASA was ensuring the continued success of HST. He worked on nearly every system and substantially upgraded and enhanced its solar array system, batteries, and diode box assembly; implemented voltage improvement kits that provided upgrades to HST's power system management; and supported the replacement of the entire power control unit (PCU) as it was dying on orbit with an electrical connection issue. Mr. Parker took on the challenge of working the PCU replacement—seen as the heart transplant for HST—with a spare unit. He led testing and developed schemes with the systems team to manufacture a first-of-its-kind bypass harness to ensure continued backup operations as needed. His vast experience with HST led him to assist NASA's international partners such as ESA with solar arrays and box assemblies.

Mr. Parker was critical to researching and developing the next generation of robotic servicing alternatives, which evolved into NASA's Exploration and In-space Services division, where he supported several critical missions, including the first-ever OSAM-1 robotic satellite refueling mission. He trained several NASA astronauts for HST servicing and ISS missions. His detailed sessions and calm but impactful demeanor established immense confidence in these unprecedented missions.

Even after his diagnosis of Amyotrophic Lateral Sclerosis (ALS), his dedication to NASA and his hardware engineering work never wavered. Despite the extreme physical limitations associated with ALS, Mr. Parker was an avid worker, developing groundbreaking technology for the robotic arms and electronic components on OSAM-1.

Like his approach to all engineering problems, Mr. Parker, with the help of his wife, utilized advanced technologies and commitment to continue his work. Using eye gaze computing, he continued to provide mentoring, creative contributions, and excellent service as an expert to many at GSFC. He led the design of the Robotic External Leak Locator, an ammonia leak location tool, and a separate calibration system used in thermal vacuum testing. He was responsible for the electrical design, integration, test, orbital checkout, and avionics for the Robotic Tool Storage aboard the ISS, which provides a conditioned space and easy robotic access to ensure the safety of the ISS, gaining gratitude from the astronauts onboard. He was instrumental in supporting the Robotic Refuel Mission for the ISS as a self-taught propulsion specialist utilizing only on-the-job training.

Mr. Parker's warmth, astounding engineering expertise, and enthusiasm are greatly missed, and he left an indelible impact on NASA and every person he worked beside.



Distinguished Public Service Medal

Lawrence L. Takacs

For outstanding contributions for over 40 years of NASA's efforts to better understand the Earth Systems through modeling and data assimilation.

Mr. Lawrence (Larry) Takacs was recommended for the Distinguished Public Service Medal at the 2021 NASA Agency Honor Awards by a number of his colleagues at NASA Goddard Space Flight Center (GSFC), Code 610.1, Global Modeling and Assimilation Office (GMAO). Mr. Takacs has provided

ongoing support to NASA Earth Sciences endeavors for over 40 years, and many of his colleagues have known and worked alongside him for much of that time.

Mr. Takacs joined the Global Modeling and Simulation Branch back in the mid-1980s, continued serving the same group as it became the Data Assimilation Office, and is engaged in related efforts in the present GMAO. His expertise is in modeling of Earth Systems. He has participated in and made major contributions to the development of uncountable versions of the General Circulation Model (GCM) used at GSFC for weather prediction, data assimilation, and climate research. His efforts started back in the days when such models worked at extremely coarse horizontal and vertical resolutions: 200 km and 20 vertical levels. Today, the Goddard Earth Observing System (GEOS) weather prediction GCM operates at 12.5 km with 72 vertical levels; 6 km products are regularly generated. With much assistance from Mr. Takacs, work is ongoing to increase vertical resolution to 181 levels. This requires skills and expertise in developing, testing, and tuning the supporting dynamical and physical components that underlie the realism of the model.

Mr. Takacs' abilities and dedication over the years to develop a state-of-the-art model go beyond normal duties. A number of years ago, he developed a machinery for examination of model results including diagnostic, verification, and cross comparison of experiments that exponentially increased the efficiency in GMAO's working practices; the tool, originally used for modeling development only, is presently employed across GEOS-based applications including data assimilation. This is one of many contributions from Mr. Takacs that go beyond regular assignments. Additionally, he has been a key contributor to three GSFC reanalysis efforts including the ongoing second version of the Modern-Era Retrospective analysis for Research and Applications (MERRA-2). He is actively engaged in the exercise to replace MERRA-2 with a 21st Century Reanalysis (R21C) using an upgraded version of the GMAO assimilation system. NASA's reanalysis efforts have benefited from his methodical evaluation of model simulations and data assimilation results. These include his implementation and refinement of a so-called Incremental Analysis Update technique that, among other things, renders Reanalysis products reliable for use in climate research.

Mr. Takacs' contributions are also revealed in authorship of GMAO NASA Technical Memoranda, being second in authorship count and having explicitly contributed to 10 out of the current 55 volumes. Some of his key contributions appear in peer-reviewed publications. Above all, Mr. Takacs has provided support to his GMAO coworkers, adding to the value of each of our contributions in ways that are impossible to describe objectively. His modesty and humble personality make him a most pleasant colleague to work with.



Distinguished Public Service Medal

Johann-Dietrich Wörner

For your leadership, dedication, and commitment to transatlantic cooperation in aeronautics and civil space.

Professor Johann-Dietrich Wörner was the seventh Director General of the European Space Agency (ESA), serving from 2015 to 2021. During his nearly 15 years first at the helm of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt, or DLR) as the Chair of the DLR Executive Board, and then as ESA's Director General, Professor Wörner has been a tireless advocate for transatlantic cooperation in aeronautics and civil space activities. Through his visionary leadership, sharp intellect, diplomatic skill, and persistence, he enabled European contributions to a multitude of programs and projects, all critical to the NASA mission. Professor Wörner's advocacy for innovative cooperation in human space flight and exploration, in Earth and space science, and in aeronautics while at DLR, has made a significant contribution to humanity's progress in aeronautics and space.



Distinguished Public Service Medal

Dr. Laurence R. Young (Awarded Posthumously)

For outstanding contributions as Research Institute director, educator, advisor, and investigator leading innovative and integrative research in the field of Bioastronautics.

Dr. Laurence Young was the Apollo Program's Professor Emeritus of Aeronautics and Astronautics and Professor of Health Sciences and Technology at the Massachusetts Institute of Technology (MIT), and his six decades of experience helped NASA solve crew health and performance challenges.

Dr. Young credited the launch of Sputnik for sparking his interest in space flight. Since that moment in 1957, it was his vision to understand the integration of biology, medicine, engineering, and space research, and apply this knowledge in the pursuit of space exploration and astronaut health.

Dr. Young was a distinguished NASA principal investigator beginning in the early 1960s with his work on human dynamic spatial orientation in support of Apollo guidance systems. He contributed to the advancement of NASA's life sciences program by engaging the international research community through his publications and direction of professional meetings, including leadership of the "The Role of the Vestibular Organs in the Exploration of Space" Symposia. Dr. Young was recognized for his expertise in aerospace human factors including application of modeling of human-machine interaction to understand the performance of pilots of space vehicles during landing.

His work on the vestibular system led to his role as principal investigator for experiments on vestibular adaptation to weightlessness conducted aboard five Spacelab missions. In 1991 Dr. Young was selected as a payload specialist for Spacelab Life Sciences 2 and served as an alternate payload specialist during the October 1993 Space Shuttle mission. He wrote more than 200 journal articles and contributed to key findings related to adaptation of visual and vestibular systems, space motion sickness, the feasibility of artificial gravity, flight simulation, and manual control and displays.

Dr. Young was the founding Director (1997-2001) of the National Space Biomedical Research Institute, which partnered with NASA, academia, and industry to mitigate the risks of long-duration human space flight while translating research findings to improve health on Earth. Dr. Young also served on multiple advisory panels for NASA including the Innovative Advanced Concepts External Council, Life Sciences Advisory Committee, and the Institute of Medicine (now National Academy of Medicine) Standing Committee on Aerospace Medicine and Medicine of Extreme Environments.

Dr. Young made a profound impact on shaping NASA's research vision for a multidisciplinary approach for human health and performance during space exploration. Dr. Young's legacy to NASA also includes his extraordinary role as an educator. He joined the MIT faculty in 1962 and co-founded the Man-Vehicle Laboratory – now the Human Systems Laboratory. As a professor, Dr. Young mentored nine astronauts as well as other key contributors at NASA, furthering their careers through the laboratory's undergraduate, graduate, and postdoctoral programs.

Dr. Young founded the Harvard-MIT Health Science and Technology Ph.D. program in Bioastronautics and served as head of science of education for the Translational Research Institute for Space Health. Dr. Young's impact on NASA's education programs brought together faculty and students from space life sciences, aerospace engineering, and space medicine to "challenge the state-of-the art in human protection and integrative physiology" (his Bioastronautics Ph.D. program mission statement).

Acknowledgements & Special Thanks



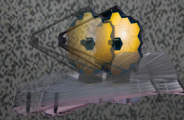
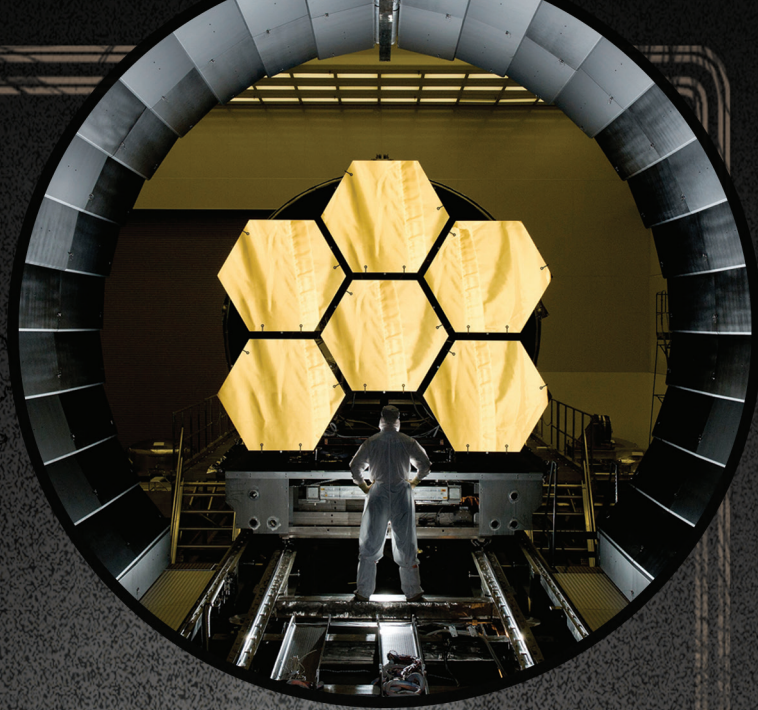
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To the extraordinary honorees, we wish you continued success in all of your endeavors. For the benefit of all, may you continue to give us a strong foundation to explore every phase of cosmic history and the endless possibilities we can unfold.

Ames Research Center
Armstrong Flight Research Center
Glenn Research Center
Goddard Space Flight Center
Jet Propulsion Laboratory
Johnson Space Center
Kennedy Space Center
Langley Research Center
Marshall Space Flight Center
NASA Headquarters
Stennis Space Center



James Webb Space Telescope



Gold-coated Primary Mirror Segment



James Webb Space Telescope's primary mirror segments are prepped to begin final cryogenic testing at NASA's Marshall Space Flight Center.



NASA engineer Ernie Wright looks on as the first six flight-ready primary mirror segments are prepped to begin final cryogenic testing.

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