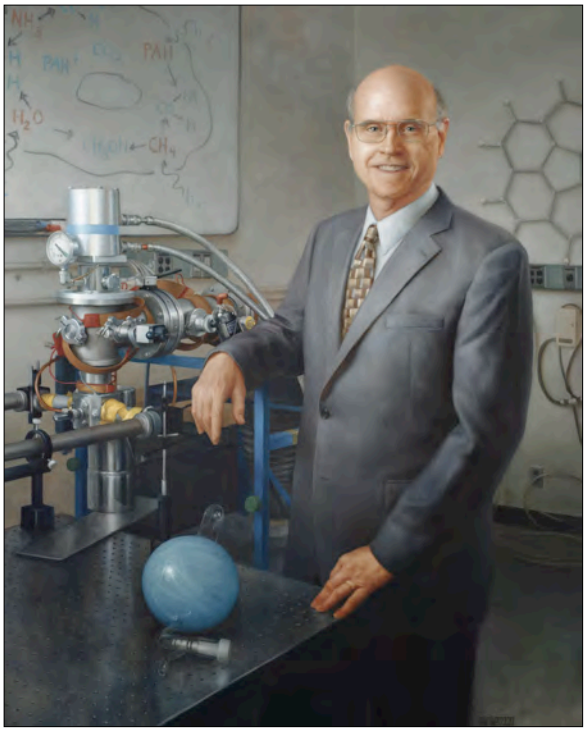
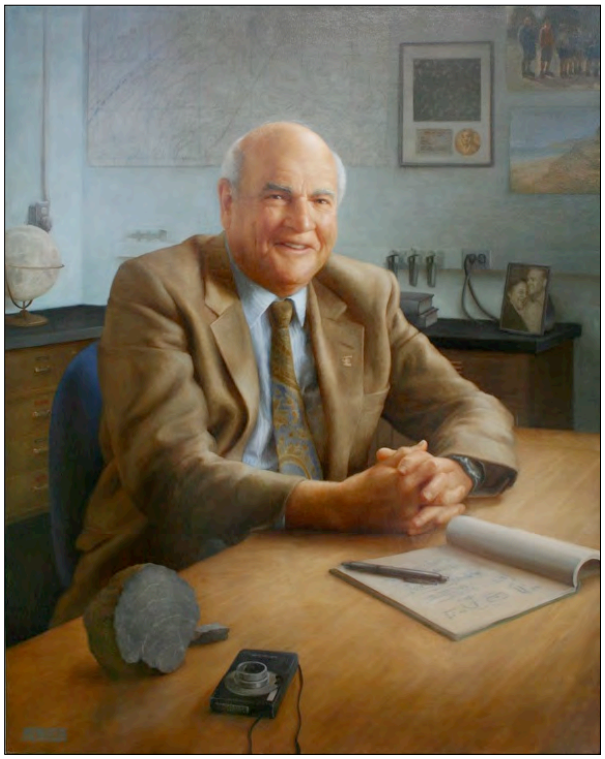
NASA Ames Fellows
Class of 2011



Louis J. Allamandola

Dr. Louis Allamandola is an internationally acclaimed scientist whose work revolutionized human understanding of materials in the Universe. Dr. Allamandola has stood on the forefront as our understanding of the universe evolved from a hydrogen-dominated physicists' view in the early 1970s to the chemically rich and diverse molecular universe we know today. In 1976 when he entered this field, the composition of interstellar dust was largely guessed at, the concept of ices in dense molecular clouds ignored, and the notion of large, abundant, gas phase, carbon-rich molecules widespread throughout the universe considered impossible. Beginning in 1983, as founding director of the Ames Astrochemistry Laboratory, he pioneered techniques that realistically mimicked the extreme temperatures and harsh radiation fields in our solar system and deep space to interpret infrared observations made with NASA's Kuiper Airborne Observatory (KAO). He has used this laboratory work to understand the breakthrough astronomical observations being made on the KAO and in turn revolutionized our understanding of the chemistry, composition and spectroscopy of the cosmos. Highlights include introducing new spectroscopic units to bridge the communication gap between chemists and astronomers; proving that ices are present where stars and planets form and identifying the molecules frozen in those ices; demonstrating that biogenic organics can be made in deep space; and recognizing that polycyclic aromatic hydrocarbons (PAHs), large and complex molecules by astrochemical standards, are widespread and abundant across the universe. Dr. Allamandola has been a key driver of the interstellar PAH model and has overseen the creation of the world's largest collection of PAH spectra at Ames to interpret the observations. Thanks to this spectral collection, astronomical PAH spectra are now becoming new probes of the physical and chemical conditions throughout our local universe.

Dr. Allamandola has interpreted data from NASA's ground-, air- and space-based telescopes to guide his scientific studies and, in the process, helped shape future NASA science missions. He mentored the next generation of space scientists, has been accorded many honors and twice won the NASA Ames H. Julian Allen Award. He authored more than 220 peer-reviewed publications, and is one of the world's most-cited space scientists.



Baruch S. Blumberg

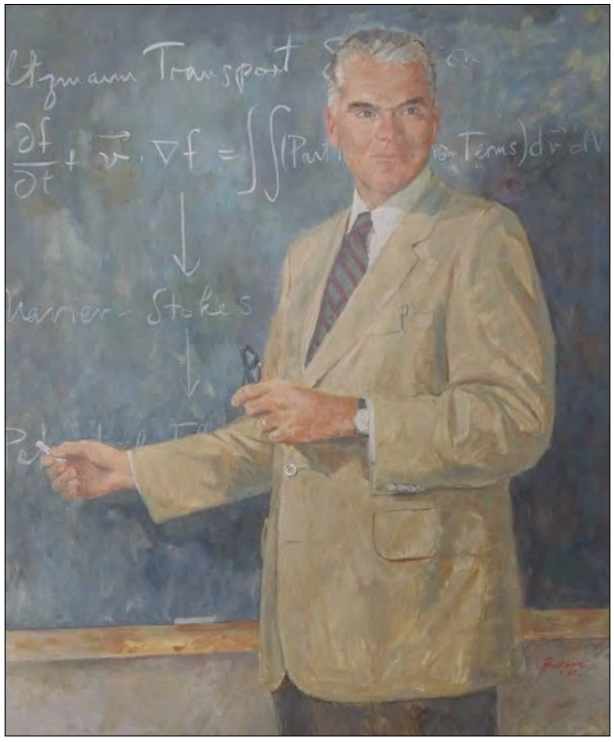
Dr. Baruch Blumberg, a pioneer in astrobiology, was one of history's greatest explorer-scientists. In 1999, Dr. Blumberg became the founding director of the NASA Astrobiology Institute (NAI). He joined NASA because of his abiding interest in the nature of life and his strong belief in the breakthrough value of interdisciplinary research, extraordinary endeavors, and the unique perspective that space exploration offers humanity. As director he forged an effective balance between competition and cooperation among scientists and placed the emerging discipline of astrobiology on a firm foundation. He served as the NASA Administrator's senior advisor on biology, and chaired key meetings on the International Space Station as a national laboratory. In 2008 Dr. Blumberg became the first Distinguished Scientist of both the NAI and the new NASA Lunar Science Institute.

In 1976, Dr. Blumberg shared the Nobel Prize with Carlton Gajdusek for "discoveries concerning new mechanisms for the origin and dissemination of infectious diseases." Through his field expeditions to remote areas Dr. Blumberg discovered the antigen of the virus that causes hepatitis B, a deadly infection of the liver affecting about one-third of the Earth’s population. Dr. Blumberg and his team also developed the first diagnostic test to detect the hepatitis B virus in blood plasma, and led the team that invented the vaccine to prevent the disease. Today, the hepatitis B vaccine is one of the most widely used vaccines in the world; Dr. Blumberg's discoveries and inventions saved and will save tens of millions of lives.

Wayne R. Johnson

Dr. Wayne Johnson has done research on rotorcraft at NASA Ames of fundamental importance to the U.S. Army and to the international rotorcraft community. His tenure with the U.S. Army Aeromechanics Laboratory at Ames and with the Ames Aeromechanics Branch coincides with the Center becoming the world's leader in rotary wing technology. His contributions over four decades have spanned aeromechanical theory, computational codes, design tools, and wind tunnel and flight testing. His theoretical work on the development of a comprehensive analysis for rotorcraft earned him the Ames H. Julian Allen Award. He wrote a series of detailed computer codes: *CAMRADII* for comprehensive analysis and *NDARC* now used worldwide as the primary design tool for rotorcraft. He spawned a new area of research by coupling the computational fluid dynamics of rotors with their aeroelastic structural dynamics. With Dr. Johnson's contributions to tilt rotor aircraft, especially the design of a wing-pylon-rotor system to avoid whirl flutter, NASA Ames validated the tilt rotor concept and enabled the success of the V-22 *Osprey*.

Dr. Johnson received many awards from the U.S. Army, NASA, and aerospace professional societies. He is a Fellow of the American Institute of Aeronautics and Astronautics and won its 1986 Pendray Aerospace Literature Award for his comprehensive and classic textbook, *Helicopter Theory*, that remains widely used in industry and academia. He is a Fellow of the American Helicopter Society, which awarded him its highest honor, the 2010 Alexander A. Nikolsky Honorary Lectureship for a distinguished career in vertical flight research. By bringing the power of physics-based and comprehensive analysis to the design of rotorcraft, no single individual in the world has had a greater impact on rotary wing technology than Dr. Johnson.



Hans Mark

Dr. Hans Mark is a leading expert in the fields of aerospace design and national defense policy. From 1969 to 1977 Dr. Mark served as Director of the NASA Ames Research Center. During his tenure, Ames became the lead NASA center for tiltrotor aircraft development and formed a continuing partnership with the U.S. Army in helicopter research. Ames led research in short haul aircraft and built two key experimental aircraft, the C-8A and the Quiet Short Haul Research Aircraft (QSRA). With the Illiac IV computer, Ames established a heritage in supercomputing and, with the Institute for Advanced Computation, Ames established a leadership role in computational fluid dynamics. Ames initiated an airborne astronomy program with the outfitting of a Lockheed C-141 and other research aircraft. Ames led the design and testing of the thermal protection system for the Space Shuttle Orbiter. Pioneer 10 became the first spacecraft to fly past Jupiter and leave our solar system and Pioneer 11 became the first spacecraft to encounter Saturn.

Prior to his service at NASA Ames, Dr. Mark was associated with the nuclear weapons laboratory in Livermore and was a professor of nuclear engineering at the University of California, Berkeley. Dr. Mark left Ames when named Under Secretary of the Air Force and Director of the National Reconnaissance Office. Then as Secretary of the Air Force, he established the U.S. Air Force Space Command. As Deputy Administrator of NASA from 1981 to 1984, Dr. Mark oversaw the first eleven Space Shuttle flights and led efforts toward the American space station program. Dr. Mark served as Chancellor of the University of Texas System from 1984 to 1992 and remains actively involved in research and teaching at the University of Texas Cockrell School of Engineering. From 1998 to 2001, Dr. Mark served in the Pentagon as Director of Defense Research and Engineering. He has been a member of the National Academy of Engineering since 1977.