2021 Award Winners of the Aerospace Medical Association

Twenty awards for outstanding contributions in aerospace medicine and human performance have been conferred to noteworthy members of AsMA (the Sidney D. Leverett Environmental Science Award will not be presented). The winners were recommended by the Awards Committee and approved by the Executive Committee of the Aerospace Medical Association. On September 2, 2021, at the Sheraton Dever Downtown, Denver, CO, a double Honors Night Awards Ceremony was held honoring those who received awards in 2020 as well as 2021.

LOUIS H. BAUER FOUNDERS AWARD

David Newman, MB, BS, DAvMed, MBA, PhD, Hon FRAeS, FAsMA, FACAsM, FAICD, FRSM

This award was established to honor Louis H. Bauer, M.D., founder of the Aerospace Medical Association. It is given annually for the most significant contribution in aerospace medicine. It is sponsored by the Mayo Clinic.

David Newman, MB, BS, DAvMed, MBA, PhD, Hon FRAeS, FAsMA, FACAsM, FAICD, FRSM, is the recipient of the 2021 Louis H. Bauer Founder's Award. Professor Newman's distinguished service to aerospace medicine as a researcher, educator, and flight safety advocate spans 30 years. He has taught aerospace medicine to thousands of civilian and military doctors, pilots, and accident investigators around the world. He has conducted significant, unique, and award-winning research with over 100 publications including 2 textbooks. He has been an expert consultant to 26 accident investigations in 4 countries involving a range of aircraft types from light aircraft through to commercial jet airliners. In recognition of his extensive and significant contributions to aerospace medicine, Professor Newman was admitted to Honorary Fellowship of the Royal Aeronautical Society in 2020. He is the first aerospace physician to receive this honor, conferred on those whose careers, leadership, inspiration, and impact mark them out as among the most eminent and influential aerospace professionals of their generation.

Dr. Newman is Visiting Professor of Aerospace Medicine at King's College London. An internationally-recognized aerospace medicine researcher, his widely cited research covers the full spectrum of aerospace physiology, clinical aerospace medicine, aerospace biomechanics, and flight safety. He is an authority on the effects of G force in pilots, having published extensive research on G-related issues. Dr. Newman is actively involved in air accident investigations, and his specialist expertise has been sought by several international investigative agencies. In 2020 he was a member of the UK expert review panel inquiry into G-related cognitive impairment. He has dedicated his career to improving human performance in flight and enhancing flight safety.

Dr. Newman holds a medical degree from Monash University, a PhD from the University of Newcastle, an MBA from Deakin University, and a Diploma in Aviation Medicine from the Royal College of Physicians of London. He is a qualified USAF Flight Surgeon, and a pilot with flying experience in a range of civilian and military aircraft including the F/A-18 Hornet, the Hawk T1 and the Harrier.

Upon graduating from the Faculty of Medicine at Monash University in 1989, Dr. Newman entered full-time service in the Royal Australian Air Force (RAAF). His career as a military medical officer and aviation medicine specialist included 3 yr in support of tactical fighter operations. In that capacity, he regularly flew with all four on-base fighter squadrons. In October 1994 he was called upon to help rescue and recover two fighter pilots who had ejected following a mid-air collision. In 1995 he was posted to the U.S. and undertook the USAF Flight Surgeon training program. In 1997 he was selected to undertake an RAF exchange posting in the U.K., where he completed the Diploma in Aviation Medicine and won the Stewart Prize for the best student. He then stayed in the U.K. for another 7 months as an aviation medicine instructor, where he taught aviation medicine to RAF aircrew. His final posting was 2 yr as the Chief Instructor at the RAAF Institute of Aviation Medicine, where he was responsible for the training of all Australian Defence Force aircrew and medical officers in aviation medicine. During his tenure as Chief Instructor he was the Australian representative for several international working parties of the 5-nation Air Standardization Coordination Committee.

After leaving the RAAF in 2000, he founded the Aviation Medicine Unit at Monash University, where he later became Professor of Aviation Medicine. In that capacity he developed, coordinated, and taught a range of aerospace medicine courses. In 2020 he was appointed to his current role as Visiting Professor of Aerospace Medicine at King's College London.

In addition to his academic work, Dr. Newman is the founder and Managing Director of Flight Medicine Systems Pty Ltd, a globally-focused company which has been providing highly specialized aerospace medicine research, training, consultancy, and accident investigation services for over 21 years. He has provided high-level consulting and advisory services to various national and international government agencies, regulatory bodies, airlines, and corporate entities in over 25 countries. He has taught aerospace medicine and human factors to thousands of doctors, pilots, and accident investigators around the world.

Professor Newman is an authority on the effects of G forces in pilots, having published extensively on G-related

research, including his two textbooks: "Flying Fast Jets" and "High G Flight". In 2020 he was a member of the expert review panel for a UK enquiry into G-induced cognitive impairment. Prof Newman is the author of more than 100 scientific papers, books, book chapters and technical reports. He is a long-standing reviewer and member of the Editorial Board of *Aerospace Medicine and Human Performance*, and is a reviewer for multiple international peer-reviewed journals, including *Anaesthesiology, Autonomic Neuroscience,* and *Occupational & Environmental Medicine*.

Dr. Newman's many international awards include the Stewart Memorial Prize from the RAF School of Aviation Medicine in 1997, the Royal Aeronautical Society's 2000 Buchanon-Barbour Award, and the Aerospace Medical Association's 2000 Arnold Tuttle Award and 2014 John Paul Stapp Award. He is a Fellow of the Aerospace Medical Association and the Australasian College of Aerospace Medicine.

ADMIRAL JOHN C. ADAMS AWARD

Mark McPherson, M.D., M.P.H.

This award was established by the Society of US Naval Flight Surgeons in honor of Admiral John C. Adams. The award is given annually for the most significant contributions to operational Aerospace Medicine, either during a single defined period (e.g., deployment), or over a career.

Mark McPherson, M.D., M.P.H., COL, MC, USA, is the 2021 recipient of the Admiral John C. Adams Award. He is recognized for a career of strategic-level impact and enduring contributions to operational Aerospace Medicine. He is internationally lauded as an expert in rotary-wing accident investigation, crew safety, aeromedical policy, and force health protection. He has authored numerous scientific abstracts, military regulations, textbook chapters, technical guides, and journal articles. He has excelled at senior-level assignments including safety, research, policy, and command—all with focus on the aviator and human operator ensuring operational readiness, optimal aircrew performance, and mission- effectiveness. COL McPherson has made significant and enduring strategic-level contributions to the operational aeromedical community through individual accolades, combat deployments, senior staff-level achievements, and DoD-wide aviation strategic wins—all with focus on the aviator and human operator.

As the Commander of the Army's Aeromedical Research Laboratory, COL McPherson has spearheaded efforts in support of Future Vertical Lift. As the DoD prepares for next generation rotorcraft, Mark has expertly positioned the Lab to support critical aeromedical and human factors integration within S&T efforts. This has included upgrades to state-of-the-art simulators, academic and industry partnerships, and research including workload, fatigue, ergonomics/anthropometrics, virtual reality, life support, biomechanics, head-mounted displays, and en route care.

As Dean of the U.S. Army School of Aviation Medicine, COL McPherson was responsible for the training of 2,500 aircrew per year through 45 programs of instruction and 162 aeromedical courses annually. He was responsible for initiatives that completely renovated training and led efforts to fundamentally address how the Army teaches and mitigates spatial disorientation. This initiative garnered the recognition and support up to the Chief of Staff of the Army level. Mark has served as either a board member or key medical liaison in more than a hundred mishaps—more than any physician within the Army. He authored investigation handbooks and fostered many key safety relationships within the aeromedical community. He is the co-developer of the eSRP system and writes extensively on accident investigation. He served as a medical SME for multiple updates and revisions to regulations and policy. He is routinely requested to lecture to the international aerospace medical community at national scientific conferences and symposia.

COL McPherson was commissioned in 1991 after graduating from the Citadel, Military College of South Carolina. He received his Medical Doctor degree from the University of South Carolina in 1995 and graduated from residency in Family Medicine in 1998 after serving as Chief Resident at Martin Army Community Hospital, Fort Benning, GA. He served as Officer in Charge and Commander of Babenhausen Health Clinic, Germany from 1998-2001. He returned to Fort Benning as Family Medicine teaching faculty and deployed as Battalion Surgeon, 203rd Forward Support, Battalion 3rd Brigade Combat Team, 3rd Infantry Division. McPherson completed his faculty development fellowship at the University of North Carolina in 2004. He deployed as a Subject Matter Expert with the Secretary of the Army Inspector General in support of inspections in Detainee Operations. He served as Assistant Residency Director of Family Medicine at Fort Belvoir, VA, from 2006-2007 before deploying as the Brigade Surgeon with 1st Brigade Combat Team, 10th Mountain Division in support of Operation Iraqi Freedom. Following his deployment, he served as Director of Medical Readiness and Standards - Office of the Surgeon General. He completed his Master of Public Health at the University of Texas Health Science Center and Aerospace Residency through the U.S. Air Force School of Aerospace Medicine at Brooks Air Force Base in 2011. He subsequently served as Chief Review and Disposition at the U.S. Army Aeromedical Activity and Command Surgeon, U.S. Army Combat Readiness Center before appointment as Dean of the U.S. Army School of Aviation Medicine. His next assignment was with the Office of the Surgeon General as action officer for General Officer Readiness and Executive Health and consultant for Aerospace Medicine.

Dr. McPherson is board certified in Aerospace Medicine and Family Medicine, a Fellow of the American

Academy of Family Physicians, and a graduate of U.S. Army War College. He is the recipient of the Bronze Star Medal, Meritorious Service Medal, Army Commendation Medal, Air Force Commendation Medal, and the Army Achievement Medal. He is the recipient of the Order of Military Medical Merit, Aeromedical Order of Merit, the Order of Saint Michael, and the Surgeon General's "A" proficiency designator.

BOOTHBY-EDWARDS AWARD

Ries Simons, M.D.

Established in memory of Walter M. Boothby, M.D., pioneer aviation medicine researcher, and Howard K. Edwards, M.D., clinical practitioner of aviation medicine, this award is presented annually for outstanding research and/or clinical practice directed at the promotion of health and prevention of disease in professional airline pilots. (The separate Boothby and Edwards Awards were given annually 1961–73, and then alternately until 1985.) Sponsored by Harvey W. Watt and Company.

Ries Simons, M.D., is the 2021 recipient of the Boothby-Edwards Award for his wide-ranging contributions to the field of Aerospace Medicine. The award recognizes his research and efforts in preventing disease in professional pilots. His expertise and current research include: 1) medical and human factor aspects of aerospace medicine and working under extreme conditions; 2) effects of operational and environmental factors on health and performance of aviators and astronauts; 3) fatigue risk management for aircrew and military missions; 4) effects of alcohol, drugs, and medication on crew alertness and performance.

Dr. Simons is a consultant Aerospace Medicine and the co-founder of the European Pilot Peer Support Initiative (EPPSI).

After earning his M.D. degree from Utrecht University in The Netherlands, Dr. Simons was licensed to practice medicine in 1973. He worked as General Practitioner, Senior Resident Internal Medicine, and practiced several years as Medical Officer in Zambia and Chad. In 1985 he became Senior Research Physician at the National Aeromedical Institute, and since 2002 has worked as Medical Advisor at the Netherlands Organisation for Applied Scientific Research (TNO).

Dr. Simons is co-chairman of the Advisory Board of the European Society of Aerospace Medicine (ESAM), chair of the ESAM-Academy board, and a member of several ESAM working groups (Cardiology, Mental Health, Human Factors, Space Medicine). As a contract-expert he has been involved in EASA's rulemaking concerning use of alcohol and drugs. He was the leading investigator in the EASA study of age limitations for commercial Air Transport Pilots. He has also been a lecturer at several EASA workshops and international training courses. He is Chair of the Board of the Training Academy of the European Society of Aviation Medicine (ESAM). He chaired the Scientific Committees of five European Congresses of Aerospace Medicine. He was the key leader of the excellent scientific program for the joint AsMA-ESAM congresses at Oslo in 2016 and Prague in 2018, which were both highly successful.

Dr. Simons is a member of the AsMA Air Transport Medicine Committee and Aerospace Mental Health Working Group, and the Editorial Board of *Aerospace Medicine and Human Performance*. He is a Past President of Netherlands Society for Aviation Medicine, a Board Member of the European Pilot Peer Support Initiative (EPPSI), and a member of the Royal Medical Society of the Netherlands and the Netherlands Society of Tropical Medicine and International Health.

He is lead author on nearly 50 scientific publications and co-author on a further 30 or so. His scientific publications include effects of fatigue, alcohol, drugs, medication, and operational factors on performance and health, and cardiological risk assessment of pilots. He authored book chapters on assessment for fatigue among pilots and physiology in different microgravity environments.

Dr. Simons is Chevalier in the Order of ESAM, and previously received the Boothby-Edwards Award from AsMA in 2017 as member of the AsMA Aerospace Mental Health Working Group.

DAVID M. CLARK AWARD

Medlock Consulting
Nyla Medlock, Founder
Posthumously

This award was established by the Aerospace Medical Association to honor an AsMA corporate member who has made significant contributions to the advancement of aerospace medicine. The award is given for contributions in a single year or over a defined period.

The 2021 David M. Clark Award was presented to Medlock Consulting for their support of the aerospace medicine community. Medlock Consulting was founded in 1990 solely to address physician executive needs. The company's founder, Nyla Medlock, passed away unexpectedly earlier this year and her sister Gayle Medlock Reese is now representing the company. Throughout the years, Nyla developed one of the few search firms that focuses solely on physician searches. Medlock consulting has developed one of the largest physician networks and databases in the country and knows where physician executives and leaders are located and how to connect them with top clients around the globe.

"Defining the Future of Physicians Globally" is the mission and vision that drove Nyla Medlock. As founder and owner of Medlock Consulting, Nyla celebrated close to 30 years in the search industry specializing in the recruitment and placement of corporate medical directors, global med-

ical directors, and preventive and occupational medicine physicians. Nyla's passion for the industry inspired the international expansion of her Medlock Consulting Companies through, GlobalMedicalDirector.com and MDOHC.

Medlock Consulting has earned kudos from clients in every region of the country. Their open book of references verifies their exceptional track record of producing for clients. Medlock Consulting lives and breathes professional Physician placements. They understand who physicians are, how they think, what they want, where to find them, and how to achieve the right "fit" between client and candidate. They work globally and in every region of the nation. Medlock Consulting has a grip on such diverse markets as the U.K., France, Canada, Philippines, Texas, Florida, and California.

Graduating with honors from Texas Tech University in 1976 with a degree in Psycholinguistics, Nyla's commitment to pursuing knowledge and encouraging leadership have been recognized within the industry and with major Universities such as Harvard, who named the Harvard School of Public Health "Nyla Medlock Occupational and Environmental Medicine Fellowship Fund." Nyla was the honored recipient of the American College of Occupational and Environmental Medicine Presidential Award, and a proud Tony Robbins Platinum Partner. Nyla's generosity has been recognized internationally with the Royal House Grand Officer/Cross. Named as one of the Nation's Fifty Most Influential People in Worker's Compensation and Occupational Medicine, Nyla touched the lives of hundreds of talented medical professionals and corporate organizations around the world.

JOHN ERNSTING AWARD

Thomas G. Smith, MBBS, DAvMed, DPhil, FRCA, FAsMA

Established and sponsored by Environmental Tectonics Corporation in memory of Professor Ernsting. It is given for outstanding research in altitude physiology, and/or longstanding exceptional performance in the education, development, and administration of Aerospace Medicine and related specialties.

Thomas G. Smith, MBBS, DAvMed, DPhil, FRCA, FAsMA is the 2021 recipient of the John Ernsting Award. Dr. Smith is a physiologist and anesthetist, expert in cardiopulmonary and hypoxia physiology with a particular interest in aerospace medicine and physiology who founded the Aerospace Medicine Research Group at the University of Oxford. As an educator he has directed the internationally unique MSc in Space Physiology and Health run in collaboration with ESA. He is currently Head of Aerospace Medicine Research, King's College London, and a Consultant Anaesthetist, Guy's and St Thomas' NHS Foundation Trust, London, UK.

Dr. Smith has extensive experience across a wide variety of respiratory physiology research studies. Through his experiments in healthy volunteers and patients, his work has provided evidence that the transcription factor hypoxia-inducible factor (HIF), which coordinates cellular responses to hypoxia, also plays a major role in regulating the cardiopulmonary organ systems upon which cellular oxygen delivery ultimately depends. This includes an important link between HIF regulation and hypoxic pulmonary vasoconstriction in humans. This work has further established the existence of a novel and substantial interaction between iron, hypoxia, and the pulmonary circulation that is consistent with the known biochemical interaction between iron and HIF. These findings have introduced the possibility that iron could be an important factor in cardiopulmonary disease and in the aeromedical setting. Dr. Smith conceived and led the first studies to use echocardiography on commercial airline flights. This included a series of studies exploring whether the mild hypoxia experienced during commercial air travel is sufficient to trigger hypoxic pulmonary vasoconstriction in humans. Using in-flight echocardiography, these studies established that pulmonary artery pressure increases in healthy passengers, and that this can develop into flight-induced pulmonary hypertension in a susceptible passenger.

Dr. Smith obtained an M.B.B.S. from the University of Adelaide, Australia, in 2000 and an Australian Certificate of Civil Aviation Medicine from Monash University, Australia, in 2002. He then commenced training in anesthesia. In 2003 he undertook an aerospace medicine rotation at NASA under a Churchill Fellowship before moving to Oxford under a Rhodes Scholarship for his D.Phil. (Ph.D.) in cardiopulmonary physiology, which he earned in 2008. He subsequently established and led the University of Oxford's aerospace medicine research group. In 2017 he was recruited by King's College London to lead research in aerospace medicine and physiology and run their internationally renowned master's degree in Space Physiology and Health, in collaboration with ESA's European Astronaut Centre.

Dr. Smith's research has been published in high-impact journals such as JAMA and features in several textbooks. His 50 research publications have generated 1,300 citations in the scientific literature, leading to new insights and research techniques in both aviation and space medicine. Dr. Smith is an Academician of the International Academy of Aviation and Space Medicine, and a Fellow of the Aerospace Medical Association (AsMA) and the Royal College of Anaesthetists. His honors include the Sir John Vane Award for Innovation in Pulmonary Vascular Research, the Ellingson Award for Published Research from AsMA's Associate Fellows Group, and the President's Prize for Research from the Australasian Society of Aerospace Medicine. He was selected to present on the 'Ernsting Panel' at the International Congress of Aviation and Space Medicine in 2015 and was chosen to give the John Lane Oration in Aerospace Medicine at the 2019 Annual Scientific Meeting of the Aviation Medicine Society of New Zealand. In 2019 Dr. Smith received AsMA's Eric Liljencrantz Award.

KENT K. GILLINGHAM AWARD

John R. Rollin Stott, M.A., M.B.B.Chir., MRCP, D.Av.Med.,

This award was established and sponsored by the AMST Group of Companies in Austria and the United Kingdom to honor the memory of Kent K. Gillingham, M.D., Ph.D. The award is presented annually to an individual who has made a significant contribution in the field of spatial disorientation and situational awareness related to flight.

John R. Rollin Stott, M.A., M.B.B.Chir., MRCP, D.Av.Med., is honored posthumously with the Kent K. Gillingham Award based on his significant contributions to ground-based pilot spatial disorientation (SD) training for the U.K. and NATO. He was recognized as an international expert on situation awareness (SA) and SD issues at the highest levels for over 30 years. He was a highly respected accident investigator for the U.K. and identified lapses in SA and SD that resulted in military and general aviation mishaps. His contributions saved lives.

Dr. Stott was renowned in the field of human perception mishaps in aviation. He helped develop ground-based and in-flight SD training for pilots. He helped draft the landmark NATO Technical Report "Spatial Disorientation Training: Demonstration and Avoidance." He was the author of two chapters in the standard reference in aerospace medicine, "Ernsting's Aviation and Space Medicine". Early in his career, while working with Dr. Alan Benson at the Institute of Aviation Medicine, he helped revise the now universally accepted theory of spatial disorientation in aviation. More recently he improved the human perception model of spatial orientation, noted in U.S. Army Aeromedical Lab report "Understanding of a Key Aspect of Situation Awareness." Working with Col. (Ret.) Dr. Geoffrey McCarthy (USAF) in the Hunter aircraft, he proved the Inversion Illusion and wrote a computer program to illustrate the actual sensations on the vestibular organs. He later developed a syllabus of in-flight illusions for demonstration to pilots. More recently collected numerous pilots' experiences of spatial disorientation, from which he concluded that teaching SDO as named illusions was not helpful to pilots, who experienced them as confusing situations. He was one of the first invited contributors to the new, online journal, *Extreme Physiology and Medicine*. He was called upon to investigate numerous military and general aviation mishaps. Two notable Boards he served on included the Morecambe Bay helicopter crash in 2006 and the Gulf Air crash of 2000.

Dr. Stott qualified in medicine from Cambridge University, receiving his B.A. in 1960 and his M.B.B.Chir. in 1963. He studied engineering applied to medicine at Imperial College, London in 1979. After a variety of hospital appointments, he joined the RAF Institute of Aviation Medicine, Farnborough, working on the effects of motion on man; in particular, spatial disorientation in flight, airsickness in trainee aircrew, and the effects of whole body vibration. He also worked as a trusted expert for QinetiQ plc and was an Honorary Senior Lecturer at King's College London. He was awarded his Diploma in Aviation Medicine in 1986. He became a CAA Aeromedical Examiner in 1990 and joined AsMA in 1991. Dr. Stott passed away in January 2021 at the age of 82.

WALTER AND SYLVIA GOLDENRATH AWARD

Vincent Musashe, M.S., CAsP, FAsMA, CAPT, MSC, USN(Ret.)

Established in memory of CAPT Walter L. Goldenrath, MSC, USN(Ret.), this award is presented for the most significant contribution in the field of aerospace physiology. It was created at the bequest of CAPT Goldenrath and is funded by the Walter and Sylvia Goldenrath Endowed Fund.

Vincent Musashe, M.S., CAsP, FAsMA, CAPT, MSC, USN(Ret.), received the 2021 Walter and Sylvia Goldenrath Award for his unmatched accomplishments as an aerospace physiologist. He was tapped to lead the aerospace physiology career field, providing management to over 100 naval physiologists. He has continued mentoring younger physiologists within the Aerospace Medical Association (AsMA), spent 20 years representing Aerospace Physiology on the AsMA Council, and is a Past President of the Aerospace Physiology Society. He developed and instituted the Marine Corps Aeromedical Safety Enlisted program, which was the first of its kind, and led the oversight of the residency program in aerospace medicine and the Naval Operational Medical Lessons Learned Center. He also directed a task force to turn the aerospace medicine residency program into an all-inclusive operational medicine advanced program designed to improve the operational culture of senior medical personnel.

CAPT Musashe holds a Bachelor of Science degree in Education with an emphasis in Physiology from Valdosta State College, GA, USA, and a Master of Science degree in Physiology from the University of Tennessee. He also attended the Naval Postgraduate School, where he completed the Aviation Safety Officer course; Marine Corps Command and Staff College non-residence course; and Armed Forces Staff College, where he completed the Joint and Combined Staff Officer School. He is a board-certified aerospace physiologist (CAsP) and is a Fellow of the Aerospace Medical Association (AsMA).

Retired after 30 years (1979–2009) of active duty in the U.S. Navy, he served operational tours with the Navy, Army, and Marine Corps. He served his joint tour as Director, Joint Regional Medical Planning Program, at U.S. Army Forces Command, U.S. Atlantic Command, before it was renamed U.S. Joint Forces Command. During that assignment he was the Department of Defense Emergency Preparedness Course Director. He has served on the staff of both the Chief of Naval Operations and Commandant of the Marine Corps. He commanded the Naval Operational Medicine Institute in Pensacola, FL,

USA, and was the Navy Deputy Director of the Military Health System Office of Transformation before assuming his last active duty assignment as the J5–Director, Plans and Policy, at Joint Task Force National Capital Region Medical. As a civilian joint warfighter, he previously served as the Director, Plans and Policy, assigned to the National Capital Region Medical Directorate located on Naval Support Activity, Bethesda, MD, USA, and the Defense Health Agency, Operations Division, Falls Church, VA, USA.

His personal decorations include the Defense Superior Service Medal with one leaf, Legion of Merit Medal with two gold stars, Defense Meritorious Service Medal, Meritorious Service Medal with one gold star, Navy Commendation Medal, and Navy Achievement Medal. He was selected as the 1980 Naval Aerospace Physiologist of the Year and received the 1991 Special Award in Aerospace Physiology. In 1999 he received the Fred A. Hitchcock Award for Excellence in Aerospace Physiology and in 2000 he received the Harry G. Moseley Award for significant contributions to flight safety.

WON CHUEL KAY AWARD

Robin F. Griffiths, M.B.Ch.B. (Hons.), FAFPHM, FAFOEM, FFOM, FFOM(I), FACOEM, MPP, D.Av.Med., DIH, FAsMA

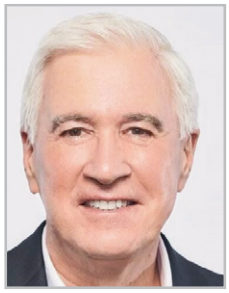
Established and sponsored by the Korean Aerospace Medical Association in honor of Won Chuel Kay, M.D., the former Surgeon General of the Korean Air Force, founder and first Medical Director of Korean Airlines and first President of the Korean Aerospace Medical Association. This Award is presented annually to a member who has made outstanding contributions to international aerospace medicine.

Robin F. Griffiths, M.B.Ch.B.(Hons.), FAFPHM, FAFOEM, FFOM, FFOM(I), FACOEM, MPP, D.Av.Med., DIH, FAsMA, was honored with the 2021 Won Chuel Kay Award for his achievements in educating the next generation of aerospace medicine physicians. He established the first distance learning teaching program in aviation medicine over 30 years ago in New Zealand. This program, which he still leads, has grown to well over 1000 doctors graduating with certificate, diploma, Masters, and even Ph.D. qualifications from all over the English-speaking world. Many of those graduates have become leaders in the field, including doctors in many major airline medical departments.

Dr. Griffiths is the Director of Occupational and Aviation Medicine at the University of Otago Wellington, New Zealand. He also holds adjunct academic positions at the University of Washington, West Virginia University, and the American College of Occupational and Environmental Medicine. Before emigrating to New Zealand to become the Chief Medical Officer of the Ministry of Transport, he was a lecturer in aviation medicine in the British Royal Air Force. He set up and leads an international distance learning program in aviation medicine, aeromedical retrieval and transport, and occupational medicine, with staff and around 90 students each year, based globally. He has been a member and is now a Fellow of the Aerospace Medicine Association for nearly 40 years.

Dr. Griffiths received his M.B.Ch.B.(Hons) from Bristol Medical School in 1978 and then earned a Master of Public Policy from Victoria University of Wellington in 1994. He earned a Diploma of Industrial Health at the University of London in 1984 and then a Diploma in Aviation Medicine in 1983. From 1984-1989, he was Chief Medical Officer at the Ministry of Transport, New Zealand. In 1989, he took his present position. In 1992, he became Medical Advisor, Accident Rehabilitation and Compensation Insurance Corporation, in Auckland, a position he still holds today. From 1994-1996, He served as Manager, Health Services Planning, at the Central Health Authority and then became Senior Medical Advisor and Acting Programme Director for the National Health Committee until 2000.

Dr. Griffiths is a Fellow of the Australasian Faculty of Public Health Medicine, Royal Australasian College of Physicians, the Australasian Faculty of Occupational & Environmental Medicine, Royal Australasian College of Physicians, the Faculty of Occupational & Environmental Medicine, Royal College of Physicians, London, the Faculty of Occupational Medicine, Royal Irish College of Physicians, Dublin, and the American College of Occupational & Environmental Medicine. A Fellow of AsMA, he is a Past President of the Aviation Medical Society of Australia & New Zealand and of the Australia and New Zealand Society of Occupational Medicine, and a member of the Royal Aeronautical Society, the Scientific Committee of the International Academy of Aviation and Space Medicine, and the Council for Education and Academic Affairs, American College of Occupational & Environmental Medicine. His awards and honors include three Education Export Innovation Programme Awards, Seriously Asia Visiting Academic Award, the Stewart Memorial Prize, the Suple Surgical Prize, the Russell Cooper Anaesthetics Prize, and a Gold Medal, University of Bristol Medical School.



JOE KERWIN AWARD

Smith L. Johnston, III, M.D., M.S., FAsMA

Established and sponsored by KBR in honor of Joseph P. Kerwin, the first physician/astronaut. It is presented for advances in the understanding of human physiology during spaceflight and innovation in the practice of space medicine to support optimal human health and performance in space.

Smith L. Johnston, III, M.D., M.S., FAsMA, received the 2021 Joe Kerwin Award for his contributions to the international space medicine and science communities. He has served as a NASA flight surgeon for the past 25 years as a crew surgeon for numerous Space Shuttle and International Space Station missions. His medical care of astronauts and their families has been second to none.

Additionally, he led NASA's Medical Selection-Retention Standards, and the Fatigue Management and Human Health, Performance, and Longevity Program.

A native of Woodstock, GA, Dr. Johnston received a Bachelor of Science in biology in 1976 and a Doctor of Medicine in 1981 from Emory University in Atlanta, GA. From 1984 to 1990, Dr. Johnston completed residencies in Internal and Aerospace Medicine from Wright State University, as well as a Master's of Science in Aerospace and Preventive Medicine and was Chief Resident in Internal Medicine from 1989-1990.

Dr. Johnston has served as a member of the Associate Clinical Faculties, at the University of Texas Medical Branch, Dept. of Preventive, Occupational and Environmental Medicine in Galveston, TX, and Wright State University, Dept. of Aerospace Medicine in Dayton, OH. He has served on the Advisory and Oversight Committees for the National Science Foundation's American Polar Medicine Program, Washington, DC, the Board of Directors for Houston Medical Centers Hospice and Palliative Care System, and has held staff positions with the Veterans Administration Medical Center Emergency Department and Department of Internal Medicine, Kelsey-Seybold Clinic, Inc., in Houston, TX. He also served on the Medical Advisory Board of Virgin Galactic, and the Scientific Advisory Board for Lighting Sciences, Inc, and Timeshifter, Inc.

Dr. Johnston started his Space Medicine career in 1990 to 1994 at KRUG Life Sciences/Wyle/KBR in Houston, TX, and transitioned to NASA Johnson Space Center as a Medical Officer/Flight Surgeon. Over the past 25 years he has supported the medical care of the active Astronaut Corps, their families, and the retired Astronauts. He has been the lead physician for the International Space Station (ISS) Emergency Medical System and Crew Return Vehicle development and has supported two Expedition ISS missions and over 16 Shuttle missions, including the tragic STS-107 Columbia mission. Over the last 5 years and before retiring from NASA, he served as the Medical Director of NASA-JSC Aerospace and Occupational Medicine Clinics, and was the lead of NASA's Astronaut Medical Selection and Retention Standards, and the Fatigue Management and Human Health, Performance, and Longevity Programs.

In addition to over 100 scientific publications, book chapters, and keynote speaker presentations, Dr. Johnston has been the recipient of numerous awards including the NASA Space and Life Science Performance Award, the NASA Superior Service Award, the NASA Exceptional Service Medal, and recently in 2020 received NASA's Distinguished Service Medal. He is a member of and received the Society of NASA Flight Surgeons' Lovelace Award in May 2011, and the Space Medicine Association's Lifetime Achievement Award in May 2012. He served as President of the Space Medicine Association in 2005 and President of the Society of NASA Flight Surgeons in 2006. Dr. Johnston is a Fellow of the Aerospace Medical Association.

Dr. Johnston's expertise centers on taking the innovations discovered from the U.S. and International Space Programs to benefit, not only the lives of the Astronauts and Cosmonauts, but also his Earth-bound patients. He gives educational presentations on Space Medicine, and its terrestrial applications for Human Health, Performance, and Longevity and has been featured in various media including NOVA, Discovery Channel, Scientific America, The New York Times, The Wall Street Journal, The Houston Chronicle, Consumer Reports, and USA Today.

Dr. Johnston recently retired from NASA in 2019 and is now the Chief Medical Officer for Axiom Space, Inc. in Houston, TX. Axiom Space, Inc. is building the next generation commercial Space Station to replace the ISS after its decommissioning in 2028.

MARY T. KLINKER AWARD

Benjamin Johansen, M.D., M.P.H.

Established by the Flight Nurse Section in 1968, this award became an official AsMA award in 1972. In 1978 it was renamed in memory of Mary T. Klinker, who was killed in a C-5A crash while performing a humanitarian mission. The award is given annually to recognize significant contributions to, or achievements in, the field of aeromedical evacuation. Sponsored by ZOLL Medical Corporation.

Benjamin Johansen, M.D., M.P.H., was the 2021 recipient of the Mary T. Klinker Award for his research efforts dedicated to addressing use of thoracic ultrasound to evaluate aeromedical injury prior to evacuation in the case of commercial spaceflight mishap. His study into novel sonographic approaches to triage and examination of commercial spaceflight participants following a mishap has the potential to improve pre-evacuation triage, advance field medical support, and provide insight for aeromedical evacuation to appropriate tertiary care. He has spent the last 2 years in an exhaustive review of the literature about and technique required for ultrasound evaluations, gathering knowledge and understanding from those at the forefront of the field.

Dr. Johansen graduated in 2011 from the Arizona College of Osteopathic Medicine at Midwestern University. Following medical school, he completed Internal Medicine residency training at Banner University Medical Center and Carl T. Hayden VA in Phoenix, AZ, in 2014. He went on to complete a second residency in Aerospace Medicine, as well as a Master's of Public Health at the University of Texas Medical Branch (UTMB) in 2016. During his Aerospace Medicine training, he completed the Air Force Aerospace Medicine Primary Course, earning Air Force Flight Surgeon Wings. For 6 weeks he provided medical care in Antarctica at both McMurdo and South Pole Stations. He completed a 1-month rotation at SpaceX, where he learned about suit thermal systems. He also completed the Joint Enroute Care Course at Ft. Rucker, AL, in which he trained to provide helicopter transport for wounded patients. In his final months of residency training, he was hired as a NASA Flight Surgeon to

support medical operations. He is board certified in Internal Medicine and Aerospace Medicine.

Dr. Johansen has completed three deployments to Star City, Russia, in support of astronaut training. During his time there, he provided medical support for Soyuz simulations, centrifuge runs, and pressurized suit checks. He served as Deputy Crew Surgeon for Expedition 53/54 and Expedition 58/59, providing medical care to NASA astronauts during 6-month missions to the International Space Station. He served as the Program Medical Officer for the NASA Commercial Crew Program, overseeing a team of 12 flight surgeons working SpaceX and Boeing missions to transport astronauts to the International Space Station. Working from SpaceX mission control, he provided medical care to NASA astronauts onboard the SpaceX Demo-2 Dragon Capsule that successfully landed off the Florida coast August 2, 2020. He is currently assigned as the lead Flight Surgeon for the NASA/SpaceX Crew-1 mission that launched November 15, 2020.

In addition to his NASA duties, Dr. Johansen continues to work regular urgent care shifts at UTMB and works as a Flight Surgeon in the Air Force Reserves assigned to the 45th Operations Group Detachment 3 at Patrick Space Force Base, FL. He is a member of the American College of Physicians, Aerospace Medical Association (AsMA), Space Medicine Association, and the Society of NASA Flight Surgeons. His honors and awards include the Arizona State Legislature's Doctor of the Day, Internal Medicine Annual Best Team Player Award, the Jeffrey R. Davis, M.D., Aerospace Medicine Endowed Scholarship from AsMA, and the William K. Douglas Aerospace Medicine Award.

ERIC LILJENCRANTZ AWARD

Leonid Hrebien, Ph.D., FAsMA, FAsHFA

The Eric Liljencrantz award was established in memory of CDR Eric Liljencrantz, MC, USN, whose brilliant career in aviation medicine was cut short by his death in an airplane accident in 1942. It is given annually to honor excellence as an educator in aerospace medicine, or basic research into the problems of acceleration, altitude, or weightlessness. Sponsored by the Aerospace Medical PLC.

Leonid Hrebien, Ph.D., FAsMA, FAsHFA, was honored with the 2021 Eric Liljencrantz Award for his ground-breaking research, devotion to students, and his service to the aerospace medical and engineering community since about 1974. He is currently a Professor of Electrical and Computer Engineering and continues his research on the measurement and mitigation of the physiological and cognitive responses to stressful environments and pattern recognition of biological data (proteomics, cytometry) for potential application in predictive toxicology. His research findings have been presented and published in multiple scientific journals and meetings and he is often an invited speaker on acceleration physiology and biomedical engineering.

A native of Regensberg, Germany, Dr. Hrebien graduated with a B.S. in Electrical Engineering from Drexel University, Philadelphia, PA, USA, in 1972. He then earned an M.S. in Biomedical Engineering, also at Drexel, in 1975. From 1977-1979, he was Chief Engineer, Manufacturing and Quality Control, at Biotron Inc., Bristol, PA, USA. He completed his education with a Ph.D. in Biomedical Engineering from Drexel in 1980. From 1980–1981, he was a Visiting Assistant Professor in the Electrical Engineering Department of Drexel. In 1981, he became Adjunct Professor of Electrical and Computer Engineering Department, Evening College, also at Drexel, a position he holds today. Also in 1981, he took a position as Research Electronics Engineer at the U.S. Naval Air Development Center in Warminster, PA, USA. In 1983, he became Leader of the Acceleration Physiology Research Team in Warminster and then the Manager of the Environmental Effects Research Branch from 1986–1989.

At Drexel, from 1985-1986, Dr. Hrebien was Assistant Head of the Evening College, Electrical Engineering Department, and then became the Liaison and Academic Advisor for the Electrical and Computer Engineering Department. In 1989 until 1996, he was Executive Officer and Associate Professor, Electrical and Computer Engineering Department and a member of the Biomedical Engineering and Science Institute. During that time, in 1995, he served as a Consulting Engineer, Quality Control Instrumentation Design, at Alphamedics Manufacturing Corp., Levittown, PA, USA. From 1996 to 2000, he was Associate Dean and Director of the College of Engineering Office of Student Services. From 1998–2000, he became Assistant Liaison and Academic Advisor, Electrical and Computer Engineering Department, for the College of Evening and Professional Studies. In 1989-2008, he was Associate Professor, Electrical and Computer Engineering Department and Affiliate Faculty School of Biomedical Engineering, Science and Health, and from 2004-2008, he was Assistant Department Head for Graduate Affairs, Electrical and Computer Engineering Department. He took his present positions as Assistant Department Head for Special Programs and Professor of Electrical and Computer Engineering in 2008.

Dr. Hrebien's honors and awards include the 1987 Laura S. Campbell Excellence in Teaching Award from Drexel University, the Stanly J. Gwiazda Professorship in 1994, the 1999 Joseph S. Mozino Blue and Gold Award from the Evening College Alumni, the 2003 Professional Excellence Award from the Life Sciences and Biomedical Engineering Branch (LSBEB) of the Aerospace Medical Association, the 2007 Martin N. Kaplan Distinguished Service Award from Drexel University, the 2007 LSBEB Research and Development Award, and being elected to the Drexel 100 Society in 2017. He is a Fellow of the Aerospace Medical Association and the Aerospace Human Factors Association, and a member of LSBEB, the American Society for Engineering Education, the American Association for Higher Education, the Biomedical Engineering Society, the Institute of Electrical and Electronic Engineers, and the SAFE Association.

RAYMOND F. LONGACRE AWARD

Robert Mulcahy, M.D., M.P.H.

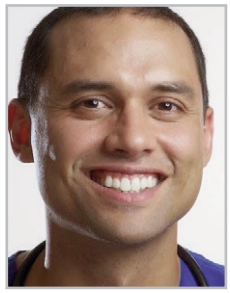
Established to honor the memory of MAJ Raymond F. Longacre, MC, USA. It is given annually for outstanding accomplishment in the psychological and psychiatric aspects of aerospace medicine. Sponsored by the Aerospace Human Factors Association.

Robert Mulcahy, M.D., M.P.H., was the 2021 recipient of the Raymond F. Longacre Award for his research efforts dedicated to addressing the issue of layperson psychological intolerance and anxiety caused by the acceleration exposures anticipated in commercial spaceflight. His work directly addresses this problem, helping to expand commercial spaceflight to laypersons who may find the stressors of spaceflight particularly challenging. The results of his research have provided much needed psychological insight for the burgeoning commercial space industry.

Dr. Mulcahy studied chemical engineering at Rice University in Houston, TX, earning a B.A. in 2008. He then enrolled in medical school at the University of Texas Medical Branch (UTMB) in Galveston, TX, and received his M.D. in 2012. Following medical school, he completed a combined residency in Aerospace Medicine and Internal Medicine at UTMB from 2012-2016. During this time at UTMB, he earned a Master of Public Health degree in 2015. His unique experiences during residency included a deployment to McMurdo and South Pole Stations in Antarctica, familiarization with the White House Medical Unit, USAF flight surgeon training, and commercial spaceflight experience at SpaceX.

After completing the residency in 2016, Dr. Mulcahy joined the NASA Johnson Space Center (JSC) as a Flight Surgeon. At JSC, his responsibilities have previously included astronaut selection medical examinations, support for the Fatigue Management Service, and clinical input to the Exploration Medical Capability research element. He is currently the Flight Medicine Clinic (FMC) lead surgeon, the pre-launch quarantine Health Stabilization Program (HSP) lead surgeon, and the alternate chair of the Aerospace Medicine Board (AMB). He also provides medical support for the NASA astronaut centrifuge training program at Wright-Patterson AFB, OH, and is a Federal Aviation Administration (FAA) Aviation Medical Examiner (AME).

Dr. Mulcahy's awards and honors include UTMB Outstanding First Year Resident for 2012-2013, twice being part of the winning team in the RAM bowl at AsMA's annual scientific meeting, the Jeff Myers Young Investigator Award, a co-recipient of the 2015 Arnold D. Tuttle Award from AsMA, the Society of NASA Flight Surgeons Outstanding Student Award, three JSC Group Achievement Awards and a JC Group Achievement Team Award, and the Robert H. Goddard Memorial Trophy.



THEODORE C. LYSTER AWARD

Anil S. Menon, M.D., M.P.H., M.S.

This award was established to honor the memory of Brig. Gen. Theodore C. Lyster, the first Chief Surgeon, Aviation Section, United States Signal Corps. It is given annually for outstanding achievement in the general field of aerospace medicine. Sponsored by the Army Aviation Medical Association.

Anil S. Menon, M.D., M.P.H., M.S., received the 2021 Theodore C. Lyster Award for his role in re-establishing human spaceflight originating from the United States as the single physician leading the SpaceX Commercial Crew team. He was instrumental in developing environmental control, medical systems, suits/seats/restraints, crew integration, landing/recovery, and medical selection for non-NASA passengers. He led the efforts at SpaceX to integrate with NASA medical operations through launch, on-orbit operations, and landing/recovery of successful commercial crew missions. He has also worked on the lunar/Mars programs, free flyers, and other commercial spaceflight issues.

Lt. Col. (Dr.) Anil Menon is currently the physician and medical director at SpaceX. He is residency trained and board certified in Emergency Medicine and Aerospace Medicine. Previously he worked at NASA as a flight surgeon, where he supported the International Space Station and traveled to Russia to support launch and landing. In recent years, he has lived at the Gagarin Training Center near Moscow for 6 months. He travelled to Baikanour, Kazakhstan, four times for launches and landings. At SpaceX, he has been working to develop the medical system of the future to enable us to travel to Mars in good health. He has also worked to develop a medical student training program, support the education of residents, and develop a medical organization.

In the military, he is a flight surgeon in the 45th Space Wing and is a member of the Critical Care Air Transport Team (CCATT). He has deployed three times with CCATT, transporting critically wounded soldiers from Iraq and Afghanistan to Germany. After his most recent CCATT deployment in April 2015, he and his wife flew to Bagdogra, India, to provide race support for an ultramarathon called Windchasers. Ten minutes after arriving at Bagdogra airport, they felt tremors from a 7.8 magnitude earthquake that struck Nepal. Menon and Anna made the decision to give up race support and venture to Kathmandu. After 24 hours of driving, they reached the outskirts of Kathmandu, found housing, and identified themselves to a Non-Governmental Organization (NGO) providing relief to disaster victims. Menon organized the early medical response amongst other volunteers, and Anna worked on waste and sanitation.

Dr. Menon is no stranger to medical humanitarian missions. He was also provided medical care at the Reno Air Race Disaster and in the Haitian 2010 earthquake, pro-

viding desperately needed medical care to earthquake survivors in austere conditions. He continues to work on translating those clinical skills into space medicine.

MARIE MARVINGT AWARD

Lindsey K. McIntire

Established and sponsored by the French Society of Aerospace Medicine in memory of Marie Marvingt (1875-1963), a pioneer French pilot and surgical nurse who, for more than 50 years, actively and untiringly involved herself in the conception and development of air ambulance services and in the education of the general public regarding their use and benefits. The award is presented annually to honor excellence and innovation in aerospace medicine.

Lindsey K. McIntire was honored with the 2021 Marie Marvingt Award for her research excellence and innovation accomplishments over the past decade in enhancing warfighter performance through non-invasive neuromodulation techniques. Her team was the first to bring these techniques to the Department of Defense (DoD) and apply them to improving cognition. She is leading the effort to find fatigue countermeasures that last longer with fewer side effects than chemical interventions. Her research has focused on transcranial direct current stimulation (tDCS), which has been found to sustain attention during sleep deprivation and enhance arousal longer than caffeine. This could revolutionize how the DoD approaches fatigue and performance enhancement.

Ms. McIntire is a senior research psychologist for Infoscitex, Dayton, OH, USA. She received her Master's Degree in April 2012 and is currently attending Wright State University for a Ph.D. in Human Factors Psychology. She has been working as a full-time contractor for the Air Force Research Laboratory (AFRL) since 2007, where she has been part of various human cognitive research and performance studies. She is part of the Non-Invasive Brain Stimulation (NIBS) team at AFRL that uses various stimulation technologies to augment human performance in the areas of attention, arousal, learning, and fatigue.

Most recently, Ms. McIntire has expanded this research into other novel technologies that are similar but quicker and easier to apply. She is currently leading a study funded by NASA to investigate a device that stimulates the cervical vagus nerve as a fatigue countermeasure. This device is FDA approved to treat migraines and cluster headaches and her team is the first to use this device to enhance performance in healthy individuals. Because the laboratory results of both devices have repeatedly shown large improvements in attention, learning, memory, and arousal, operational Air Force units have begun field-testing these devices to determine if they will work for training and fatigue mitigation from shift-work changes.

Ms. McIntire is a Member of AsMA, the Aerospace Human Factors Association (AsHFA), and the Life Sciences and Biomedical Engineering Branch (LSBEB). Her awards and honors include: Cross Collaboration Team Award (711th HPW), 2016; Research and Development Innovation Award (LSBEB), 2012; and William E. Collins Award for Publication of the Year (ASHFA), 2012.

HARRY G. MOSELEY AWARD

Lina Maria Sanchez Rubio, M.D., Ph.D., FAsMA, Col. (Ret.), COLAF

Established in memory of Col. Harry G. Moseley, USAF, MC, in recognition of his material contributions to flight safety. It is given annually for the most outstanding contribution to flight safety. Sponsored by the International Association of Military Flight Surgeon Pilots.

Lina Maria Sanchez Rubio, M.D., Ph.D., FAsMA, Col. (Ret.), COLAF, was the 2021 recipient of the Harry G. Moseley Award for her leadership and service in support of flight safety during both civil and military operations. Her expertise includes medicine, human factors, aeromedical certification, operational safety, aviation accident prevent and investigation, aeromedical evacuation, epidemiology, teaching theory, health resources management and aerospace medical research. Her 32 years of contributions to education include four academic appointments, three of which are still current. She has been a mentor of multiple residents in aerospace medicine. Her achievements as a woman in Latin America are unprecedented, including her appointment as Surgeon General of the Colombian Air Force.

Born in Ibague, Colombia, Dr. Sanchez Rubio earned a Bachelor´s degree with honors, receiving the Andres Bello Medal of the Colombian Ministry of Education in 1982. She received her Medical Doctor degree from Nueva Granada Military University Medical School, with honors at the top of her class, and was awarded the University Merit Medal in 1988. She completed her aerospace medicine education at the Colombian, Argentina, Brazilian, and the U.S. Air Forces; and further education at University of Texas Medical Branch (Aerospace Medicine Course), the Civil Aviation Medical Institute of the Federal Aviation Administration (International Rotation in Aerospace Medicine and Human Factors), and the ETC Aeromedical Training Institute (Aerospace Physiology Training Course). She earned a Ph.D. in Public Health, with honors, from National University of Colombia, which conferred the Merit Award on her in 2010. Her doctoral thesis on the Study of the Human Factor in Colombian Aviation Accidents helped to increase understanding of the role of human factors in aviation accidents and generated significant data that permit direct comparison with studies in several countries, contributing to aircrew performance, harmonization, standardization, and aviation safety.

From 1998–2018, she was an Otolaryngology Specialist at the Colombian Air Force Aerospace Medical Center

and University Teaching Specialist (2013) from Nueva Granada Military University. She was Medical Officer of the Colombian Air Force (COLAF) for 30 years (1988–2018). There she served as flight surgeon, aviation safety officer, medical specialist, professor, researcher, Director of the Aerospace Medical Center, and Surgeon General. She was recognized as one of the best officers of the Colombian Air Force with the Excellence Award in 2009. Additionally, she has been aviation medical examiner and advisor of the Colombian Civil Aviation Authority since 1993; and adjunct professor at the Nueva Granada Military University, National University of Colombia and the COLAF Postgraduate School.

Dr. Sanchez Rubio led the scientific and technological development of the COLAF Aerospace Medical Center-CEMAE, contributing to development of the military and civil aerospace medicine in Colombia, and achieved the U.S. Air Force Certificate of Recognition to its Aerospace Physiology Training Program in 2013. She directed the multidisciplinary team that structured and implemented the COLAF Aerospace Medical Center Programs to generate optimal conditions for flight operations. As COLAF representative, she became part of the specialized team and advisory committee (formed by Dr. Jorge Behaine) that created the Aerospace Medicine Residency Program of the National University of Colombia in agreement with the COLAF and Civil Aviation Authority in 2002.

Dr. Sanchez is member of the Colombian Otolaryngology, Head and Neck Surgery Association (ACORL); a Fellow of Aerospace Medical Association (AsMA); a member of Aerospace Human Factors Association (AsHFA) and the International Academy of Aviation and Space Medicine (IAASM); Past President of the Colombian Aerospace Medical Association; and Past President of the Iberoamerican Association of Aerospace Medicine. At present, she continues working in academic and research activities and advising military and civilian institutions.

JOHN PAUL STAPP AWARD

Amanda M. Taylor, B.S., M.S.

This award was established and sponsored by Environmental Tectonics Corporation to honor Col. John Paul Stapp, USAF(Ret.). The award is given annually to recognize outstanding contributions in the field of aerospace biomechanics and to promote progress in protection from injury resulting from ejection, vibration, or impact.

Amanda M. Taylor, B.S., M.S., received the 2021 John Paul Stapp Award for her remarkable contributions to aviation safety over the past 14 years. These include outstanding investigation skills, being unequaled in mentoring and other outreach efforts, and having been a collaborator in the design and installation of the new Federal Aviation Administration (FAA) impact sled. She is also a sought-after aviation safety lecturer in the fields of biomechanics and injury research. Her development of quantitative injury metrics provided guidance in the use of anthropomorphic test devices for vertical impacts. In collaboration with others, she has additionally provided engineering requirements to support the revision of Technical Standard Order TSO-C100 and the standard regarding child restraint systems, and developed a proposed brace for impact position for transport category aircraft.

Ms. Taylor is a Research Engineer for the FAA Civil Aerospace Medical Institute's Protection and Survival Laboratory, researching in the area of occupant protection by conducting crash tests from components to full-scale impacts, overseeing various university research programs, working with the military, NASA, and other civil aviation authorities. She is called upon to assist in various types of accident investigations and presents research findings at various locations. Since December 2020, she has also been Deputy for the Innovation and Technology Advisory Council at the FAA's William J. Hughes Technical Center in Egg Harbor Township, NJ, USA. She has been with the FAA since 2006.

Ms. Taylor earned a B.S. degree in Biomedical Engineering from the University of Central Oklahoma in 2008, and a Masters in Engineering from Purdue in 2017. In 2006 she began her career as an intern a the Mike Moroney Aeronautical Center in Oklahoma City, OK, USA, conducting time and workload studies. Later in 2006, she became a biomedical Research Assistant in the Department of Engineering Physics at the University of Central Oklahoma, Edmond, OK, USA. She held that position until 2008. Also in 2006, she became a Clerk at the Mike Monroney Aeronautical Center, which she served as until mid-2009. For a short time in 2020, she served at the Office of Accident Investigation and Prevention in the FAA in Washington, DC, USA, participating in the safety risk management panels. At the end of 2020, she took her current positions.

Ms. Taylor is a member of the Society of Automotive Engineers (SAE), the Vertical Flight Society (VFS; formerly The American Helicopter Society), and the Aerospace Medical Association (AsMA). She serves on SAE's Aircraft Seat Committee and on VFS's Safety and Crash Dynamics Committees. She has authored or co-authored several papers concerning the safety of aircraft seats and restraint systems.

JOHN A. TAMISIEA AWARD

Warren Silberman, D.O., M.P.H.

This award was established and sponsored by the Civil Aviation Medical Association in memory of John A. Tamisiea, M.D. The award is given annually to an aviation medical examiner or other individual who has made an outstanding contribution to the art and science of aviation medicine in its application to the general aviation field.

Warren Silberman, D.O., M.P.H., FAsMA, was honored with the 2021 John A. Tamisiea Award for his outstanding contributions to the art and science of aviation medicine as

applied to general aviation. He is often featured as a speaker and author, and he provides regular content for Federal Aviation Administration (FAA) Aviation Medical Examiner (AME) courses, the Federal Air Surgeon's Medical Bulletin, and the FAA AME Minute video series. He also co-authored the civil aviation medicine chapter in the Fundamentals of Aviation Medicine textbook. He has written many general aviation and aeromedical related articles and has lectured internationally. He recently completed his term as President (2017-2019) of the Civil Aviation Medical Association (CAMA). Throughout his career, he has provided essential information to international AMEs in a thorough and often humorous manner.

Dr. Silberman is currently performing aviation medical examinations and consultations. He retired for the second time in late September 2020. Prior to that he was a Medical Officer in the FAA's Aerospace Medical Education Division. From December 2019 until June 2020, he was the medical officer responsible for performing the hazard analysis for all fatal aircraft accidents. He spent 2 years as the Manager of the Occupational Health Clinic at the FAA's Civil Aerospace Medical Institute. He moved from the Aerospace Medical Education Division where he was writing AME courses, teaching AMEs, international aerospace physicians, and residents in aerospace medicine. Prior to that he was working in retirement for 5 years as an AME and Consultant. From June 1997 until January 2012, he was the Manager of Aerospace Medical Certification for the FAA. In that position he ran the largest division in the Office of Aerospace Medicine, lectured extensively both in the United States and internationally, and wrote articles. During the same time, he was the Oklahoma State Air Surgeon responsible for the Air National Guard healthcare.

Dr. Silberman is currently the president of the Aerospace Medicine Division of the American Osteopathic College of Occupational and Preventive Medicine and Chair of the Fellows Group of the Aerospace Medical Association (AsMA) and Vice President of Education and Research. He is a member of the Aircraft Owners and Pilots Association, the American College of Osteopathic Internists. the American Osteopathic Association, the American Osteopathic College of Occupational and Preventive Medicine, CAMA, the Experimental Aircraft Association, the International Association of Aviation and Space Medicine, the Society of USAF Flight Surgeons, the Society of U.S. Army Flight Surgeons, and the Airline Medical Directors Association. His awards and honors include the U.S. Army Order of Aeromedical Merit; CAMI Employee of the Year; the Audie and Bernice Davis Award presented by CAMI; the Theodore Lyster and Boothby-Edwards Awards from AsMA; Office of Aerospace Medicine Flight Surgeon of the Year (twice); President's Commendation from CAMI for outstanding medical certification of airline pilots; and the Legion of Merit, awarded by U.S. Army Surgeon General Ronald Blanck for service at Raymond W. Bliss Army Community Hospital.

Nominate a Colleague for an AsMA Award!

The nomination form and rules are on our website at: https://www.asma.org/members-only/award-nominations. There is an online submission form linked on this page. For more information, you can contact the Chair, at: awards@asma.org. Deadline for submissions is January 15.

THOMAS J. AND MARGARET D. TREDICI AWARD

Ari Taniguchi-Shinojima, M.D., Ph.D.

This award was established by Thomas J. Tredici and sponsored by an endowment fund managed by the Aerospace Medical Association Foundation. It is given for the most significant contribution to aerospace ophthalmology and vision science.

Ari Taniguchi-Shinojima, M.D., Ph.D., was recognized for her contributions to aerospace ophthalmology, clinical ophthalmology, and vision science with the 2021 Thomas J. and Margaret D. Tredici Award. She has worked on the problem of spaceflight-associated neuro-ocular syndrome (SANS) affecting astronauts and vision impairment in commercial airline pilots. She has contributed to both aviation and space medicine and is frequently consulted regarding cases of pilots with central serous chorioretinopathy. She has also been appointed the Japanese representative to the International Space Station Eye Problem Working Group and has been active in educational activities for Japanese aviation medical examiners to renew their ophthalmological knowledge.

After winning the Robert F. Kennedy Scholarship, awarded to only one person from 16 colleges with 87 departments at Nihon University in Tokyo, Japan, Dr. Taniguchi-Shinojima has been working on head-down tilt and other experiments related to ophthalmology. From 2017 to 2019 she worked at the Lariboisiere Hospital in Paris, France, while representing Japan at a meeting on SANS hosted by NASA. Since 2017 she has been working as a JAXA consultant and researcher. Since 2019 she has been affiliated with the Department of Ophthalmology at Keio University School of Medicine in Tokyo, Japan, as a Project Assistant Professor.

Dr. Taniguchi-Shinojima has received three awards from the Japan Society of Aerospace and Environmental Medicine regarding aerospace medical research, and an award from the Ministry of Education, Culture, Sports, Science, and Technology in Japan. She is also active as a clinician and researcher, and her research on vitreoretinal diseases has been recognized both domestically and internationally, receiving the Tokyo Retina League Young Investigator Award in 2016 and the EURETINA (European Society of Retina Specialists) Best Free Paper Award in 2018. After graduating from Nihon University in

2006, she worked at Nihon University as a surgical resident in order to gain a broad understanding of the whole body as a physician. She studied in the Department of Gastrointestinal Surgery, Orthopedics, Anesthesiology, Ophthalmology, Obstetrics, Gynecology, Pediatrics, Cardiology, and Neurology. Since 2008, she has been specializing in ophthalmology. From 2009 to 2010, she also performed ophthalmic surgery at the Department of Ophthalmology, National Hospital Organization Disaster Medical Center.

In 2012, Dr. Taniguchi-Shinojima earned her Ph.D. and worked as an ophthalmologist at Nihon University. In 2013, she became the head of the Department of Ophthalmology at Douaikai Hospital in Tokyo, and was mainly involved in surgery for vitreoretinal diseases at Nihon University Hospital since late 2014. Since 2018, she has been a lecturer at the Faculty of Engineering, Kyoto University, in Japan. She has been in her current position since 2019. She has also been involved in murine experiments, such as changing the concentration of vitamins and other ingredients in food to investigate retinal photodamage and engaged in the development of a device and research for non-invasively detecting metabolites in the aqueous humor. She has been an author on 37 papers and 63 books and other publications and has given over 100 presentations. She is a recipient of the Jeff Myers Young Investigator Award from 2014, the Tokyo Retina League 15th Young Investigator Award in 2016, and the European Society of Retina Specialists Best Free Paper Award in 2018.

ARNOLD D. TUTTLE AWARD

Karl Rickard Johan Ånell, M.D.

Established in memory of Col. Arnold D. Tuttle, USAF, MC. Awarded annually for original research that has made the most significant contribution toward the solution of a challenging problem in aerospace medicine and which was published in Aerospace Medicine and Human Performance. *Sponsored by KBR.*

Karl Rickard Johan Ånell, M.D., is the recipient of the 2021 Arnold D. Tuttle Award. He was recognized for his role as the lead author of "Evolution and Preservation of Venous Gas Emboli at Alternating High and Moderate Altitude Exposures" [Aerosp Med Hum Perform. 2020; 91(1):11-17]. He and his co-authors, Mikael Grönkvist, Ph.D., Mikael Gennser, M.D., Ph.D., and Ola Eiken, M.D., Ph.D., are from the Division of Environmental Physiology, Swedish Aerospace Physiology Centre, School of Chemistry, Biotechnology and Health, Royal Institute of Technology, Stockholm, Sweden. In their study they investigated the evolution and preservation of venous gas emboli (VGE), as markers of decompression stress during alternating high- and moderate-altitude exposures, simulating a fighter aircraft high-altitude flight, interrupted by refueling excursions to lower altitudes. Respiratory nitrogen exchange was measured continuously using a modified closed-circuit electronic rebreather. They determined that in normoxic conditions, long-duration flying at a cabin altitude of 24,000 ft is associated with substantial VGE occurrence, which is not abolished by intermittent excursions to a cabin altitude of 15,000 ft.

A member of the Swedish Armed Forces since 1990, Dr. Ånell became Military Flight Surgeon in 1997 and a Hyperbaric Medicine Physician in 1999. He became a pilot in 2008 and underwent space environmental training in 2012. He was deployed to Bosnia, Afghanistan, and Mail. He still serves part-time as a Senior Medical Officer and Flight Surgeon.

In his civilian career, Dr. Ånell served as an orthopedic surgeon for the County Council of Östergötland from 1998-2009 and then as an emergency physician. He is currently employed as a Global Medical Adviser for SAAB AB and has just finishing his Ph.D. at the KTH Royal Institute of Technology.

His honors and awards include the Armed Forces Service Medal in Silver, United Nations Medal in Bronze, NATO Medal for service in Former Yugoslavia, Armed Forces Medal in Bronze for international service (3), Exceptional actions in medical field SF/SIG, Farfarslänken Swedish Airborne Rangers Corps. and the Commanders Coin of Excellence Mali07.

JULIAN E. WARD MEMORIAL AWARD

Michelle Hong Chan, M.D., Pharm.D.

Established and sponsored by the Society of U.S. Air Force Flight Surgeons in memory of its first member to lose his life in an aircraft accident, and to honor all flight surgeons whose lives are lost in the pursuit of flying activities related to the practice of aerospace medicine. The award is given annually for superior performance and/or outstanding achievement in the art and science of aerospace medicine during residency training.

Michelle Hong Chan, M.D., Pharm.D., was the 2021 recipient of the Julian E. Ward Memorial Award for her superior performance as Chief Resident of the Aerospace Medicine Residency Program at UTMB as well as her significant contributions to the specialty. She is co-author on two published research papers, works in the UTMB hospital COVID clinic, teaches residents and students, and provides an example of leadership. She has also contributed to public health, preventive medicine, and space medicine through presentations, papers, and lectures.

Dr. Hong Chang is a graduate of the University of Texas, where she received her Doctor of Pharmacy. While in pharmacy school, she studied the effects of zero gravity on multidrug resistance by conducting experiments on NASA's KC-135. After graduating, she completed a pharmacy practice residency and served briefly as a clinical assistant professor for the University of Texas El Paso's Cooperative Pharmacy Program before practicing phar-

macy with a focus on pediatric hematology and oncology at Texas Children's Hospital. She later went on to earn her medical degree at the University of Texas Health Science Center. She then completed an emergency medicine residency at Baylor College of Medicine where she served as chief resident.

During residency, Dr. Hong Chang participated in prototype development of a trade space analysis tool for spaceflight medical resources at NASA and also began work developing an electronic medical record with Twin Sails Technology Group. She continued her work in medical informatics after residency while practicing community-based emergency medicine. Most recently, she completed a residency in aerospace medicine at the University of Texas Medical Branch, where she had the opportunity to practice remote medicine at McMurdo Station, Antarctica, and earn her flight surgeon wings from the U.S. Air Force School of Aerospace Medicine. She recently accepted a position as Mission Flight Surgeon with Axiom Space.

Dr. Hong Chan is an aviation medical examiner and certified open water scuba diver. She is a member of the Aerospace Medical Association, the Aerospace Medicine Student/Resident Organization (AMSRO), where she was Co-Chair of the 2020 AMSRO Elections Ad Hoc Committee, and the American College of Emergency Physicians. She is also a member of the Gold Humanism Honor Society, which recognizes physicians who demonstrate humanistic care). She has been a medical volunteer at the Houston Marathon 2020, the medical coordinator at Wings Over Houston Airshow in 2019 and has been a member of various groups and committees.

FELLOWS Class of 2021

Christopher Backus
Roderick Borgie
Raymond Clydesdale
Robert Elliott
Michael Harrison
Deborah Hoar
Wilfred Lim
David Miller
Justin Nast
Glenn Pascoe
James Pattarini
Sanjiv Sharma
Rahul Suresh
John Venezia
Robert York

Future AsMA Annual Meetings

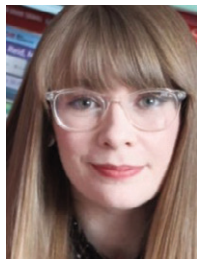
April 3–7, 2022
Peppermill Resort and Casino, Reno, NV

May 21–25, 2023
Sheraton New Orleans Hotel, New Orleans, LA

AsMA Scholarship Recipients

Stanley R. Mohler, M.D., Aerospace Medicine Endowed and AsMA International Aerospace Medicine Scholarships

Nina Purvis, M.Phys., M.Sc., Ph.D., PGCert, is the 2021 recipient of both the Stanley R. Mohler, M.D., Aerospace Medicine Endowed Scholarship and the AsMA International Aerospace Medicine Scholarship. She is currently working on an M.B.B.S. in Medicine and Surgery at the Barts and The London School of Medicine and Dentistry, Queen Mary University of London. She earned an integrated Bachelor's and Master's degree in Astrophysics from the University of Hull in 2012 and then both a Postgraduate Certificate in HE Research and Teaching and a Ph.D. in Medical Physics at Hull York Medical School in 2015. She received her M.Sc. in Space Physiology and Health in 2020.



A native of Britain, Dr. Purvis began as a Graduate Teaching Assistant at the University of Hull from 2012–2015. At the same time, she was also serving as a Doctoral Researcher as part of her Ph.D. From 2015 to 2016, she was a Postdoctoral Research Fellow in Oncological Imaging and Radiogenomics at Memorial Sloan Kettering Cancer Centre. Her teaching experience includes being a Physics Teaching Assistant, a Graduate Teaching Assistant, and lecturing on the physiology of commercial spaceflight. She is an author or co-author on seven papers. Her honors and awards include the Piramal Healthcare Student Award for Highest A2 Level in Physics; Finalist for 3-Minute Thesis at the University of York; both the International Society for Magnetic Resonance in Medicine (ISMRM) Conference International Student Travel Award and the Hull York Medical School (HYMS) Conference Travel Award for travel to the 2015 ISMRM in Toronto, Canada; runner-up of the Next Generation Aerospace Medicine Presentation Competition from the Royal Aeronautical Society; Suborbital Day Special Prize for Best Presentation; and the UKSEDS National Award for Research Project of the Year.

Anita Mantri, Ph.D., Memorial Travel Scholarship

Jason David, M.D., Capt., USAF, is the 2021 recipient of the Anita Mantri, Ph.D., Memorial Travel Scholarship. He is currently stationed at Nellis Air Force Base as an Emergency Medicine Physician. He graduated from a Residency in Emergency Medicine at the Kirk Kerkorian School of Medicine and University of Nevada, Las Vegas. He graduated with distinction from the U.S. Air Force Academy in 2014 and attended medical school at the Uniformed Services University of the Health Sciences (USUHS), receiving his M.D. in 2018. He