

President's Page

Just in from the outstanding meeting in Los Angeles as I write this. The meeting went very well. The facilities were excellent, and the Westin Bonaventure was great. Of course, about 1,300 of you know that, since you were there.

Best of all was the sense of community that always prevails at our meetings. Interacting with peers, learning new things in areas we don't often think about, socializing in a new city: these all increase the ties between us. We should find a way to keep that feeling going the other 51 weeks of the year.

The early reports about H1N1 (Swine) flu were of great concern to us. We did have some cancellations from Los Angeles, due to uncertainty about the ongoing spread of the virus. Most of those were people who were involved in their local or national responses. So, we had perhaps 100 fewer attendees than expected. We are all happy that the dire warnings of an escalating pandemic (that dominated the cable news networks) have not yet come to pass. At this writing, there are still cases, and deaths, being reported, but nothing like the early fears.

Despite the (so far) positive outcome there is a lesson for us to draw from this. This episode reminds us of the importance of aerospace medicine in the public health arena. Passenger and crew screening, disease transmission patterns in an era of rapid air transport, dealing with passengers who become sick en route: all these and more are part of our specialty. Thus, we need to be part of the preparation and response to events such as this one.

The months to come should be busier than usual for your Executive Committee and Council.

ExComm met the morning after the excellent Honor's Night Banquet, on Friday, May 8. We're trying to get a head start on the year, and so held a short meeting just to coordinate what our priorities will be for the next year, and not wait until the August ExComm to get moving.



Robert W. Weien, M.D., M.P.H.

We had a good meeting, and I look forward to progress in coming months.

Our next priorities will include the selection of a new Editor-in-Chief for Aviation Space and Environmental Medicine. I think most of you are aware that Dr. Sarah Nunneley is retiring in January 2010. There may be a new Editor-in-Chief selected by the time you read this.

We'll also continue the search for a new Executive Director. An excellent discussion at the Council Meeting in Los Angeles clarified the direction we will pursue.

As always, membership is a priority, as well as those pop-up issues that always seem to arise.

A year from now I will be handing the presidency off to one of the most energetic and dedicated members of our Association. If you haven't heard yet, Dr. Marian Sides is our new President-Elect.

She has been involved with leadership in AsMA for many years. Her efforts on the Corporate and Sustaining Committee are truly great: she has attracted and retained many C&S members and made that a vital part of our Association.

It will be a pleasure to work with her this year.

As always, if you have suggestions or concerns, please feel free to contact me at president@asma.org.

2009 Award Winners of the Aerospace Medical Association

Honors Night Ceremonies of the 80th Annual Scientific Meeting of the Aerospace Medical Association were held May 7, 2009, at the Westin Bonaventure in Los Angeles, CA. Fifteen awards for outstanding contributions in aviation and space medicine were presented. The presentations were made by Andrew Bellenkes, Ph.D., president of the Aerospace Medical Association. The winners were recommended by the Awards Committee, chaired by Dr. Dwight Holland, and approved by the Executive Committee of the Aerospace Medical Association.



LOUIS H. BAUER FOUNDERS AWARD

Terence J. Lyons, M.D., M.P.H.

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.

Terence J. Lyons, M.D., M.P.H., received the 2009 Louis H. Bauer Founders Award for his 35 years of outstanding contributions to the field of aerospace medicine. His many research contributions include development of countermeasures for spatial disorientation and G-induced loss of consciousness; seminal papers on women in aviation, the acquisition of a cooling system for flight-line workers, and the Advanced Spatial Disorientation Demonstrator; organizing a fatigue study of C-5 airlift crews supporting Operation Desert Shield; and investigation of modafinil, a new performance-enhancing drug. While Chief of Aerospace Medicine at HQ USAFE, he organized a conference for NATO flight surgeons which obtained AGARD sponsorship and has become an annual event. Internationally, he has organized medical military-to-military exchange visits with Eastern Europe, commanded the 80-man humanitarian mission to Niger in 1993, and organized medical support for NASA Space Shuttle Abort Landing sites in Spain and Africa.

Dr. Lyons began his education at Boston College, where he graduated with a B.A. in 1969. He then attended the University of Connecticut in Farmington, earning an M.D. in 1973. He received his M.P.H. from Harvard University in Cambridge, MA, in 1988. He worked in private practice at Ashley Hospital in North Dakota from 1974-1976, then became General Medical Officer at the USAF Hospital at Misawa AFB in Japan until 1979. From 1979-1980, he was a family practitioner at the USAF Clinic at Lowry AFB, CO, and was then promoted to Chief of the Family Practice Clinic at Osan AFB in Korea, where he served until 1981. From 1981-1984, he was Chief of Flight Medicine at the USAF Hospital at RAF Lakenheath in the UK, and then was transferred to the USAF Clinic at Spangdahlem AFB in Germany, where he remained until 1987. From 1989-1990, he served as Chief of Aerospace Medical Science and Technology, Program Office for Science, Technology, and Operational Aeromedical Support, Human Systems Division, at Brooks AFB, TX. From 1990-1992, he served as Deputy Director of the Occupational and Environmental Health Directorate at Armstrong Laboratory at Brooks. He was then transferred to

Ramstein AB, Germany, where he was the Chief of Aerospace Medicine at the Headquarters of the U.S. Air Forces Europe until 1995.

From 1995-1997, Dr. Lyons was Commander/Deputy Director at Armstrong Laboratory. From 1997-2001, he served as an Associate Clinical Professor at Wright State University of Medicine. From 1997-2006, he was assigned as Liaison Officer, Asian Office of Aerospace Research and Development (AOARD)/ Air Force Office of Scientific Research in Tokyo, Japan. In 2007 he was awarded the Meritorious Civilian Service Award for his leadership of the AOARD as they transitioned revolutionary breakthroughs in hypersonics, UAV control, and portable power to enable the USAF to track & engage global targets quickly. He acquired Space Access/Long Range Strike technology by astutely investing in the world's first successful in-flight scramjet propulsion test (Australia's "Hyshot")—AF/ST was ecstatic about mach 8+ engines.

Dr. Terence Lyons is currently a Program Manager at the Air Force Office of Scientific Research (AFOSR), in Arlington, VA, managing a research portfolio in Socio-Cultural Modeling consisting of approximately 25 research projects and a total annual investment of about \$10 million. AFOSR with a staff of 142 scientists, engineers and administrative personnel, and a \$300 million budget, maintains the technological superiority of the U.S. Air Force. This office selects, sponsors and manages basic research relevant to Air Force needs in science and technology, and is the single manager for the entire Air Force basic research program.

Dr. Lyons is a Fellow of the American College of Preventive Medicine and the Aerospace Medical Association. He is board certified by the American Board of Preventive Medicine in both Aerospace Medicine and Occupational Medicine. He has served as a member of the Advisory Editorial Board of Aviation, Space and Environmental Medicine and has published over 40 peer-reviewed scientific articles, as well as numerous other presentations and publications. From 1995-1997, he was appointed by the Deputy Assistant Secretary of Defense to be the U.S. National Coordinator for the AGARD (NATO) Aerospace Medicine Panel (AMP). He was Chairman of the NATO Research and Technology Organization (RTO) Working Group #27 on the Human Factors Implications of Superagile Flight.

Dr. Lyons' awards include the Meritorious Civilian Service Award, the Legion of Merit, four Meritorious Service Medals, the 1991 and 1993 Howard R. Unger Literary Awards from the Society of USAF Flight Surgeons, the 1991 Harold B. Ellingson Literary Award for best Associate Fellow article from the Associate Fellows Group of AsMA, the 1990 AsMA Julian E. Ward Memorial Award, Flight Surgeon of the Year from Air

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Force Systems Command, the Air Force Achievement Medal, and the Air Force Commendation Medal.



**SIDNEY D. LEVERETT, JR.
ENVIRONMENTAL SCIENCE
AWARD**

Joseph P. Kerwin, M.D.

Established in memory of Sidney D. Leverett, Jr., Ph.D., this Environmental Science Award is presented annually to an individual who has made a significant contribution in the field of environmental medicine through a publication in Aviation, Space and Environmental Medicine, or by activities conducted in support of aerospace systems operation. Sponsored by Environmental Tectonics Corporation.

Joseph P. Kerwin, M.D., was presented with the 2009 Sidney D. Leverett, Jr., Environmental Science Award for his devotion to the advancement of aerospace medicine. His contributions have significantly influenced both aviation and space medicine. In a career with NASA spanning over 40 yr, he has participated in and directed advances in medical operations and spaceflight physiological research. He was the first U.S. pilot-physician to fly in space and was a leader on Skylab for the practice of medicine and medical research on orbit. As the leader for life sciences at NASA and at Wyle, he continued to support the development of medical operations and research, training and guiding teams throughout the Shuttle and International Space Shuttle (ISS) programs.

A native of Illinois, Dr. Kerwin received a B.A. in philosophy from College of the Holy Cross in Worcester, MA, in 1953, and an M.D. from Northwestern University Medical School in Chicago, IL, in 1957. He served an internship at the District of Columbia General Hospital in Washington, DC, and then attended the U.S. Navy School of Aviation Medicine at Pensacola, FL. He was designated a naval flight surgeon in 1958 and became a naval pilot in 1962. He was selected as a scientist-astronaut by NASA in June 1965 and served as science-pilot for the Skylab 2 (SL-2) mission, which launched on May 25 and terminated on June 22, 1973. He was subsequently in charge of the on-orbit branch of the Astronaut Office, where he coordinated astronaut activity involving rendezvous, satellite deployment and retrieval, and other Shuttle payload operations.

From 1982-1983, Dr. Kerwin served as NASA's senior science representative in Australia. In this capacity, he served as liaison between NASA's Office of Space Tracking and Data Systems and Australia's Department of Science and Technology. From 1984-1987, he served as Director, Space and Life Sciences, Johnson Space Center. He was responsible for direction and coordination of medical support to operational manned spacecraft programs, including health care and maintenance of the astronauts and their families; for direction of life services, supporting research and light experiment project; and for managing JSC Earth sciences and scientific efforts in lunar and planetary research.

Dr. Kerwin retired from the Navy, left NASA, and joined Lockheed in 1987. There he managed the Extravehicular Systems Project, providing hardware for Space Station Freedom, from 1988 to 1990; with two other Lockheed employees he invented the Simplified Aid for EVA Rescue (SAFER), recently tested for use by space walking astronauts on the ISS. He then served on the Assured Crew Return Vehicle team, and served as Study Manager on the Human Transportation Study, a NASA review of future space transportation architectures. In 1994-95 he led the Houston liaison group for Lockheed Martin's FGB contract, the procurement of the Russian "space tug" which has become the first element of the ISS. He served on the NASA Advisory Council from 1990 to 1993.

Dr. Kerwin joined Systems Research Laboratories (SRL) in June 1996 to serve as Program Manager of the SRL team which bid to win the Medical Support and Integration Contract at the Johnson Space Center. The incumbent, KRUG Life Sciences, was selected. Then, to his surprise, KRUG recruited him to replace its retiring President, T. Wayne Holt. He joined KRUG on April 1, 1997. In 1998, KRUG Life Sciences was acquired by Wyle Laboratories; and Dr. Kerwin continued in the same duties with new title of Senior Vice President. In 2002-2003 he led a successful bid for new billion-dollar, 10-yr contract with NASA JSC. Then on July 2, 2004 Dr. Kerwin retired, but he continues as consultant to Wyle and Lockheed Martin. In addition, he serves on the Board of Directors of the National Space Biomedical Research Institute (NSBRI) as an Industry representative.

Dr. Kerwin is a Fellow of the Aerospace Medical Association and a member of the Aircraft Owners and Pilots Association, AIAA, and the International Academy of Astronautics. His awards include the Collier Trophy, the Harmon Trophy, Distinguished Service Medals from both the Navy and NASA, the Outstanding Leadership Medal from NASA, the Medal of Loyola University, the Johnson Space Center Commendation Medal, and the Johnson Space Center Special Achievement Award.



BOOTHBY-EDWARDS AWARD

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

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.

Warren Silberman, D.O., M.P.H., was the 2009 recipient of the Boothby-Edwards Award for his leadership, innovation, and promotion of aviation health and safety. During his tenure as Manager of the Aerospace Medical Certification Division at the Civil Aerospace Medical Institute, he has instituted improvements that have led

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to the process becoming computerized and internet based, thereby reducing issuance delays and backlogs. He has paid special attention to commercial pilots, whose livelihoods depend on obtaining issuances in a timely manner. He has eliminated backlogs in applications with a cost savings and limited personnel while at the same time working with commercial and private pilots to improve their long-term health with prevention strategies. He is also a tireless educator.

A native of Philadelphia, PA, Dr. Silberman earned a B.A. degree from Temple University in 1971. In 1974, he graduated from the College of Osteopathic Medicine & Surgery in Des Moines, IA, with a D.O. He went on to earn an M.P.H. at the University of Texas Health Center in San Antonio in 1991. He served an internship at Lancaster Osteopathic Hospital from 1974-1978 and a residency at Community General Osteopathic Hospital in Harrisburg from 1975-1978. He served another residency at the USAF School of Aerospace Medicine at Brooks AFB, TX, from 1991-1992. From 1978-1981, he was in practice at Arizona Clinical Internists in Phoenix, moving to Central Arizona Medical Associates in Mesa, where he served until 1995. From 1985-1988, he was a Staff Internist at Noble Army Hospital in Ft. McClellan, AL, and from 1988-1990, he served as Chief of the Department of Medicine at the U.S. Army Aeromedical Center in Ft. Rucker, AL. From 1992-1995, he was Deputy Commander for Clinical Services at the U.S. Army Aeromedical Center. From 1995-1997, he served at Commander Raymond W. Bliss Army Community Hospital at Fort Huachuca, AZ, until his retirement from the U.S. Army Medical Corps. In 1997, he joined the Federal Aviation Administration as Manager of the Aerospace Medical Certification Division. He also served as Senior Flight Surgeon with the Oklahoma Air National Guard from 1999-2005. He retired from the Air National Guard in 2005 after serving as Oklahoma State Air Surgeon from 2001-2005.

Dr. Silberman is Board Certified in Internal Medicine and Preventive/Aerospace Medicine. He is a Fellow of the American Osteopathic College of Internists, American Osteopathic College of Occupational and Preventive Medicine, the Aerospace Medical Association, as well as the Civil Aviation Medical Association. He has given frequent lectures to the Aviation Medical Examiner community and pilot advocacy organizations such as the Airline Pilots Association, Aircraft Operators and Pilots Organization, Experimental Aircraft Association, National Agricultural Aviation Association, and National Warbirds Association. Dr. Silberman is a regular writer for the *Federal Air Surgeon's Bulletin*.

He has received a President's Commendation from the Civil Aviation Medicine Association, an award for Outstanding Medical Certification of Airline Pilots from the Airline Pilots Association, and was FAA OAM Flight Surgeon of the Year in 2003. He has been primary instructor for USAF residents in aerospace medicine since 2003 and also of the residents of the U.S. Army and Navy since 2005. He has also been a Field Instructor of the Year from the USAF RAM classes for 2005 and 2006 and Aerospace Medicine Instructor of the Year from the USAF RAM class of 2007.



KENT K. GILLINGHAM AWARD

Bob S. K. Cheung, Ph.D.

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.

Bob Cheung, Ph.D., was presented with the 2009 Kent K. Gillingham Award for his significant contributions to the fields of spatial disorientation (SD) and loss of situational awareness in flight. He has made a worldwide impact on current understanding of SD and the development of countermeasures to reduce its effects. His research on human perception and participation in numerous international working groups has made him a world expert in both fields. He has been a prolific researcher, author, and lecturer on SD and represents Canada in a number of NATO task groups for SD-related issues. He is recognized as a subject matter expert in motion disturbance and SD both in the Canadian Forces and internationally.

A native of Canada, Dr. Cheung earned an Hon. B.Sc. in 1976 and a Bachelor of Education in 1977 from the University of Toronto, and an M.S. in 1988 and a Ph.D. in 1990 from York University. His theses were on the influence of body posture and visual field rotation on circular vection and the otolith contribution to human visual-vestibular interactions, respectively. During this time, he served as laboratory demonstrator in microbiology at the University of Toronto, a research assistant for the Immunology section of the Defence and Civil Institute of Environmental Medicine, engineering and scientific support in the Bioscience division of the Defence and Civil Institute of Environmental Medicine, and a part-time science and math instructor for the Continuing Education Program at the Scarborough Board of Education. From 1987-1990, he conducted his graduate research in vestibular physiology at the Human Performance in Space Laboratory, Department of Biology, York University.

In 1990, Dr. Cheung became an Adjunct Research Associate and Lecturer at the Institute for Space and Terrestrial Science at York University, and in 1991 accepted a position as a Defence Scientist in Aerospace Physiology in the Biosciences Division of the Defence and Civil Institute of Environmental Medicine. He is currently Acting Section Head of the Individual Readiness Section at Defence Research and Development Canada-Toronto and an Adjunct Professor of Physiology, Faculty of Medicine, University of Toronto. His awards include the E. Lynn Kirshner Memorial Scholarship from York University in 1989 for an outstanding publication, a scholarship from the Medical Research Council, Canada, to attend the International Space University in 1990, and the 2007 Professional Excellence Award from the Life

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Sciences and Biomedical Engineering Branch (LSBEB) of the Aerospace Medical Association.

He was the recipient of Professional Excellence Award from the NATO HFM Panel for providing a short course on Survival at Sea for Mariners, Aviators, and Personnel Involved in Search & Rescue to six different NATO countries and allies and represents Canada in a number of NATO Task Groups in spatial orientation related issues and served as the Technical Evaluator for the NATO symposium on Day/Night All Weather Operations. He was the Canadian representative for PG117 Spatial Disorientation for the Air Standardization Coordination Committee - ASCC (now known as the Aerospace Interoperability Council - ASIC). Currently he is the Chair and National Leader for TTCP (The Technical Cooperation Panel) HUM Group TP-14 on Protection and Sustainability of Cognitive and Physical Performance. He is a frequent lecturer for NATO short courses and a regular lecturer for the Canadian Forces Flight Surgeons course on spatial disorientation and motion disturbance in tri-services.

Dr. Cheung is a member of Dohlmán's Vestibular Society of Canada, the Canadian Centre for Occupational Health and Safety, the Human Factors and Physiological Aspects Panel of the International Academy of Astronautics Subcommittee on International Exploration of Mars, is a Fellow of the Aerospace Medical Association (AsMA), and was the recipient of AsMA's Sidney D. Leverett, Jr., Environmental Science Award in 2000. He has served on the editorial board for *Aviation, Space, and Environmental Medicine* and is a standing member of the Barany Society for vestibular research. He has published over 90 refereed scientific journal papers, book chapters, and NATO documents on SD and countermeasures. He was part of an international effort in writing the first state-of-the-art textbook, *Spatial Disorientation in Aviation*, published in 2004, and his current research interests include the effects of mild traumatic brain injury in the operational environment and pain assessment on the battlefield.



WON CHUEL KAY AWARD

Tomaz F. Kozelj, M.D.

Established 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. The award was established and is sponsored by the Korean Aerospace Medical Association.

Tomaz F. Kozelj, M.D., was the 2009 recipient of the Won Chuel Kay Award for his excellence and leadership in international aerospace medicine. He has worked at the highest levels of his government and abroad to promote innovations and collaboration in aerospace medicine. He is deeply committed to improving aviation and

environmental safety in his country's healthcare system. Internationally, he has been an innovative and visionary leader, and was one of two Slovenians initially engaged in starting the annual Potocnik and Rusjan Memorial Days lectures in Ljubljana, Slovenia. This conference was the first since the Balkans Conflict where military and civilian groups from the former Yugoslav Republic gathered to promote peace and move the region away from future conflict. Dr. Kozelj was also a key leader in the formation of the Slovenian Aerospace Medical Association, which has become an affiliate of the Aerospace Medical Association (AsMA). He is well known for his diligent promotion of international and regional cooperation in aerospace activities.

Born in Slovenj Gradec, Slovenia (formerly Yugoslavia), Dr. Kozelj earned a B.Sc. in 1972 from the University of Ljubljana. He then attended the School of Medicine there, graduating in 1978 with an M.D. He earned an M.Sc. in 1981 from the University of Zagreb and Ljubljana, and an M.D. in 1979 and 1983 from the U.S. VQE-ECFMG exam certification. During his post-graduate years, he trained at the Institute of Josef Stefan in the Department of Theoretical Physics from 1972 to 1974. In 1974, he served at the Department of Physiology and Biophysics at the University of Mississippi Medical Center. From 1983-1984, trained in the Department of Experimental Surgery at the Cleveland Clinic Foundation and in 1984 served at the Texas Heart Institute. From 1989-1991, he was at the University Clinic of Cardiovascular Surgery in Novi Sad, Yugoslavia and from 1991-1992, he served at the Department of Public Health at New York University. He took refresher surgical training for Board Certification in General Surgery at the University Clinical Center in Ljubljana in 1993. From 1995-1996, he served in the Department of Radiology, Contrast Media Laboratory and Experimental Surgery, at the University of San Francisco.

Dr. Kozelj trained in the Yugoslavia Armed Forces from 1974-1975 and at the Officer's School of Slovenian Armed Forces from 1997-1998. He was the Surgeon General of the Slovenian Armed Forces from 1998 to 2001 and has served as a Delegate of Slovenia in the International Committee of Military Medicine between 1998 and 2001 and in the Joint Medical Committee from 2008 to the present. Currently he is serving as a Senior Medical Examiner, Chief of the Military and Civilian Aviation Medical Center, and Chief Flight Surgeon and Colonel with the Slovenian Armed Forces.

Dr. Kozelj is the current President of the Slovenian Aerospace Medical Association, and a member of the Medical Chamber of Slovenia, the Slovenian Medical Association, the Yugoslav and Slovenian Society of Biophysics, the International Academy of Medicine, and is a Fellow of AsMA. Within AsMA, he is a member of the Aerospace Human Factors Association, the U.S. Army Aviation Medicine Association, the Society of U.S. Naval Flight Surgeons, the Society of U.S. Air Force Flight Surgeons, the International Association of Military Flight Surgeon Pilots, and serves on the International Activities and Education and Training Committees. His awards include the Medal of Recognition for the contribution in the establishing of the Slovenian Air Force, recognition for his creative contribution promoting the

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successful work of the Slovenian Air Force Command, AsMA's President's Citation in 2003, and the Silver Medal of Military Health Service.



MARY T. KLINKER AWARD

Cathy Dibiase, RN, BSN

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 Impact Instrumentation.

Cathy Dibiase, RN, BSN, was the 2009 recipient of the Mary T. Klinker Award for her dedication to aerospace nursing, the Aerospace Nursing Society (ANS), and the Aerospace Medical Association (AsMA). She worked tirelessly to improve the electronic presence of the ANS and promoted the membership of nurses in the ANS and AsMA. Her contributions have helped improve both organizations.

Ms. Dibiase is an aerospace nurse with Medical Operations, The Bionetics Corp, Kennedy Space Center, FL, where she has supported over 60 Shuttle missions. She has been involved in the operations of astronaut flight crew nominal recovery, contingency planning, and nominal shuttle launches, and has consistently worked to optimize the lives of flight crew through application of aerospace medicine.

Some missions of significance include the Hubble repair, NASA-Mir program, John Glenn's return to space, and expedition crews to and from the International Space Station. During these missions, Cathy has worked with countless astronauts, flight surgeons, and experiment teams not only from the U.S., but also from the Canadian, European, Russian, and the Japanese Space Agencies. Besides providing routine nursing and medical care to the astronauts and their families, contingency planning and emergent evacuation of astronauts from the orbiter on a launch or landing are integral to her work. Planning for contingencies starts with documentation that fully outlines the role of all the medical personnel supporting the mission. Supplementary documentation and meetings prior to each mission with medical personnel assure all are briefed on mission specific information and any changes to their routine support. Briefings are also given to DOD physicians' and pararescuemen from Patrick AFB, FL, that support NASA missions.

To assure that the plans in place are sufficient, simulations which encompass a launch or a landing scenario are utilized. All of the medical forces accomplish the rescue of faux astronauts utilizing all the resources available to them (helicopters and ground vehicles). Once the simulation is complete the exercise is evaluated for areas of improvement and if need be documentation updated.

Equipment and kits are an integral part of the preparation for support. There are several kits that the crew sur-

geons use that are stocked and inspected prior to each mission. Also prepared are kits used by the DOD surgeons. The greatest amount of preparation goes into the equipment and supplies that are placed on the Crew Transport Vehicle, utilized at landing. A specialized crash cart with various equipment is prepared and loaded prior to each mission.

One plan Cathy hoped to never put into place was the day the crew of the shuttle Columbia on STS-107 did not return to their pre-designated landing site at Kennedy Space Center. Instead of the contingency plan to find and rescue the crew the focus of care became the families of the crew. Crying and mourning with the families was a hard task regardless of the type of training and preparation that had been done previously.

Ms. DiBiase earned a B.S. in Nursing from Bethune-Cookman University in Daytona Beach, FL, in 1983. In that same year, she accepted a position as a Staff Nurse in Orthopedics, then later Trauma/SICU, at Halifax Regional Medical Center in Daytona Beach. In 1985, she became Staff Nurse in Orthopedics, then Telemetry, at Boca Raton Community Hospital. From 1987 to 1989, she served as Staff Nurse, ICU, and Relief Charge Nurse at Jess Parrish Memorial Hospital in Titusville. In 1989, she returned to Daytona Beach, where she served as Staff Nurse, Telemetry/ICU, at Humana Hospital until 1990. In both 1989 and 1990, she was a Critical Care Nurse, CCU, at Delray Community Hospital in Delray Beach.

Ms. Dibiase accepted a position as a Nurse Case Manager/Home Health Nurse and IV Instructor at Paragon Home Healthcare in Daytona Beach in 1991. Later in 1991, she became a Critical Care Clinician, CCU/ISCU/MICU, and student preceptor at Bethesda Memorial Hospital in Boynton Beach, where she stayed until 1994, when she accepted her present position. She is a licensed RN in the state of Florida and holds accreditation/licenses in Basic Life Support, Advanced Cardiac Life Support, Pediatric Advanced Life Support, and has taken the Trauma Nursing Core Course.

Ms. Dibiase has over 35 presentations/publications to her name. She is a member and Associate Fellow of AsMA, a member and past president of the ANS, and an Honorary Member of the Society of NASA Flight Surgeons. She is involved in many committees and teams, including the LSSC Safety and VPP Committee; as a Space Life Sciences Training Program assistant and Med Ops project coordinator; the JCAHO Visit Planning Team; the Telemedicine Demonstration Team; and the Helicopter Thomas Kit development and review team. Her awards and honors include the Acme Award, LSSC, KSC; the Kudos Award, LSSC, KSC; the Leukemia Society Volunteer Service Award; the American Red Cross Appreciation award; multiple recognitions from Medical Education participants and various other groups; and the Space Flight Awareness Honoree Award.

Nominate a Colleague for an AsMA Award!

The nomination form and rules are on our website at: www.asma.org, under "About AsMA", Downloadable materials as well as with the Awards Committee information. For more information, you can contact the Chair, Dwight Holland, at: dwithholl@aol.com



ERIC LILJENCRANTZ AWARD

Richard T. Jennings

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 Association.

Richard T. Jennings, M.D., received the 2009 Eric Liljencrantz Award for his educational accomplishments and his exceptionally broad and in-depth knowledge of the academics of aerospace medicine, which are well appreciated by his residents and students. He is highly respected as an educator by the entire aerospace medicine community, civil and military, national and international. His contributions to aerospace medicine education have been outstanding; his most noteworthy achievement was the development of a new residency in aerospace medicine at the University of Texas Medical Branch, Galveston. He brought it from infancy to maturity, attracting exceptional residents from this country and abroad, thus making that program recognized as being of the highest caliber.

Dr. Jennings is currently a professor of preventive medicine community health and obstetrics and gynecology at the University of Texas Medical Branch. He serves as residency director of the UTMB/NASA-JSC aerospace medicine residency program. He provides astronaut gynecological care and consultation services at the Flight Medicine Clinic at JSC. In addition, he coordinates the Wyle/UTMB physicians that support NASA at the Gagarin Cosmonaut Training Center in Star City Russia, the Johnson Space Center, and the Flight Activities Research Unit at UTMB. He is the medical director for Space Adventures and consults in commercial space-flight. He served as the crew surgeon for Drs. Greg Olsen, Richard Garriott, and Charles Simonyi on their Soyuz flights to the International Space Station.

A native of Oklahoma, Dr. Jennings graduated in 1971 from Oklahoma State University with a B.S., and from the University of Oklahoma School of Medicine in 1974 with an M.D. He served a residency at the University of Oklahoma, Tulsa Medical College, in OB/GYN from 1974-1977. In 1987, he earned an M.S. at Wright State University while serving a residency in Aerospace Medicine there from 1985-1987. He is certified by the American Board of Obstetrics and Gynecology, the American Board of Preventive Medicine-Aerospace Medicine, and the National Board of Medical Examiners.

From 1977-1985, in 1989, and again from 1994-1995, Dr. Jennings served at the Stillwater Medical Center in Stillwater, OK. From 1987-1997, he served at St. John Hospital in Nassau Bay, TX, and then was a Clinical Instructor at the University of Oklahoma Tulsa Medical College from 1977-1985. He went on to serve at the Flight Medicine Clinic at NASA-JSC from 1987-1995, where he was Chief from 1988-1995. From 1989-1990, he

was the Chief, Medical Operations for the Space Shuttle, and in 1991 the Acting Chief, Medical Operations Branch. Also between 1989-1995, he became a Clinical Assistant Professor of Obstetrics, Gynecology, and Reproductive Sciences at the University of Texas Medical School in Houston. From 1989-present, he has served as Clinical Associate Professor at the Department of Medicine, Wright State University School of Medicine, in Dayton, OH. Since 1992, he has also been serving as a faculty member at the USAF School of Aviation Medicine at Brooks AFB, TX. In addition, he is a Senior Aviation Medical Examiner for the Federal Aviation Administration.

Dr. Jennings awards include the Graduate Research Award from Wright State University, the Julian E. Ward Memorial Award from the Aerospace Medical Association (AsMA), two Group Achievement Awards from the Medical Operations Group at NASA, the Silver Snoopy Award from NASA-JSC's Astronaut Office, the Louis H. Bauer Founders Award from AsMA, and was a finalist for the Parker J. Palmer "Courage to Teach" Award in 2003. He is a member of the American Board of Preventive Medicine, a Fellow of the American College of Obstetrics and Gynecology, a member of the Central Association of Obstetrics and Gynecology, a Fellow of AsMA, a member and past President of the Space Medicine Association, a member and past President of the Society of NASA Flight Surgeons, and a member of the Civil Aviation Medical Association, the International Academy of Aviation and Space Medicine, the American Society of Aerospace Medicine Specialists, the American Medical Association, and the U.S. Navy Aerospace Medicine Residency Advisory Committee. He has also served on the Editorial Advisory Board of *Aviation, Space, and Environmental Medicine*.



RAYMOND F. LONGACRE AWARD

David F. Dinges, Ph.D.

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 PricewaterhouseCoopers LLP.

David F. Dinges, Ph.D., received the 2009 Raymond F. Longacre Award for his significant contributions to aviation safety through the development of the Psychomotor Vigilance Task (PVT), which has become the standard for assessing the effects of sleep loss and fatigue on human performance. The data provided by the PVT has been used to develop models to improve work schedules in aviation, space, the transportation industry, and other shift-working occupations. Dr. Dinges has also produced a number of outstanding graduates and has received three awards for excellence in teaching. His research on the relationship between sleep loss, work schedules, and fatigue and their effect on human performance has made noteworthy contributions to aviation and transportation safety.

See DINGES, p. 682.

From DINGES, p. 681.

Dr. Dinges is a Professor of Psychology in Psychiatry, Chief of the Division of Sleep and Chronobiology, and Director of the Unit for Experimental Psychiatry in the Department of Psychiatry at the University of Pennsylvania School of Medicine. He is also Associate Director of Penn's Center for Sleep and Respiratory Neurobiology, and a member of the Psychology Department Graduate Group, Penn's Institute for the Translational Medicine and Therapeutics, the Center for Functional Neuroimaging, and a popular undergraduate teacher in Penn's Biological Basis of Behavior Program.

His research focuses on biological, behavioral, cognitive and psychological effects of fatigue and stress from life style, work demands, sleep loss, and disturbances of circadian biology. He has conducted extensive scientific work on development and validation of behavioral, technological, and biological interventions for these effects to promote human health and safety. His laboratory in the School of Medicine and Hospital of the University of Pennsylvania is unique in the world for its capability to conduct prolonged study of healthy humans in conditions that mimic challenging real world scenarios. In addition, Dr. Dinges conducts research in simulators and operational environments for commercial aviation, trucking, the military and the space program. He is currently measuring astronaut performance on a test he invented and deployed on the International Space Station. During the past 30 years, his research has been supported by major grants from the National Institutes of Health, NASA, the Departments of Defense, Transportation, and Homeland Security, foundations, and industry.

Dr. Dinges lectures at the NTSB Academy and has advised both federal and private entities in the U.S. and abroad on scientific evidence for human performance failure in major accidents, as well as regulatory policies regarding duty hours and fatigue management. He has directed a congressionally mandated Center of Research Excellence for the Air Force Office of Scientific Research, and he currently leads the Neurobehavioral and Psychosocial Factors Team for the NASA funded National Space Biomedical Research Institute (NSBRI). He currently has research projects for NSBRI and NASA underway in his laboratory, in the Russian Mars-105 project, and the International Space Station.

Dr. Dinges earned a Ph.D. in Physiological Psychology from Saint Louis University in 1976. In 1980, he served as Clinical Assistant, Associate, and Professor of Psychology in Psychiatry at the University of Pennsylvania School of Medicine. In 1999, he became Adjunct Professor at the School of Biomedical Engineering, Science and Health Systems, at Drexel University. In 1995, he served as Director of the Unit for Experimental Psychiatry and Associate Director of the Center for Sleep and Respiratory Neurobiology at the University of Pennsylvania School of Medicine. In 1996, he became Chief of the Division of Sleep and Chronobiology, Department of Psychiatry, at that same institution.

Dr. Dinges has served on more than 26 national scientific review committees, including for NASA and NIH, has been an invited lecturer 175 times, and has over 130 peer-reviewed research publications, as well as many non-peer-reviewed research publications and over 90 editorials, reviews, and chapters, including participation in

committee reports. From 1991 to the present, he has served at various times on the Editorial Advisory Board for the Journal of Sleep Research, SLEEP, Behavioral Sleep Medicine, and Aviation, Space, and Environmental Medicine, and Journal of Clinical Sleep Medicine, and is currently Editor-in-Chief of SLEEP, the leading scientific journal on sleep research and sleep medicine in the world.

Dr. Dinges has received numerous awards, including the 2001 Senator Mark O. Hatfield Public Policy Award from the American Academy of Sleep Medicine; the 2004 Decade of Behavior Research Award from the American Psychological Association; and the 2007 NASA Distinguished Public Service Medal, which is the highest honor NASA awards to a non-Government employee. He has also received the NASA Ames Honor Award from the Fatigue Countermeasures Group in 1992; the NASA Group Achievement Award from the Fatigue Countermeasures Group in 1993; the Excellence in Teaching Award from the University of Pennsylvania School of Medicine in 1996; Professor of the Year, Biological Basis of Behavior Society, University of Pennsylvania in 2000; the William E. Collins Award from the Aerospace Human Factors Association in 2003; and the Laurence R. Young Space Biomedical Research Award for contributions to human performance in space in 2008.

He is a member of the Aerospace Medical Association (AsMA) and AsMA's Life Sciences and Biomedical Engineering Branch, the American Academy of Sleep Medicine, the National Sleep Foundation, and a Fellow of the Society for Clinical and Experimental Hypnosis. He has served on the Board of Directors for the American Academy of Sleep Medicine, on the Board of Directors and as Chair of the Government Affairs & Public Policy Committee for the National Sleep Foundation, and as a Member-at-Large of the Executive Board, a Member of the Executive Committee of Board of Directors, and President of the Sleep Research Society. He recently completed service as a member of the NIH NINR Advisory Council.



THEODORE C. LYSTER AWARD

Capt. Kris M. Belland, MC, USN

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 Lockheed-Martin Space Operations.

CAPT Kris M. Belland, MC, USN, received the 2009 Theodore C. Lyster Award for his substantial and consistent contributions to the art and science of aerospace medicine during his career. He is a Navy subject matter expert in directed energy weapons, human performance maintenance during sustained/continuous operations, and human factors as related to mishap avoidance. He

See BELLAND, p. 683.

BELLAND, from p. 682.

was the first Navy physician selected to attend the USAF Air War College and has been awarded the U.S. Air Force Historical Foundation Award for the "best study of major significance to the Air Force today" for his paper "Human Factors Cutting Edge Technology." He has also served as Third Fleet Surgeon, trained and certified all deploying Strike Group medical departments for the Seventh and Fifth Fleets, and has served as Homeland Security/Defense CBRNE/Weapons of Mass Destruction Subject Matter Expert.

CAPT Belland is a 1984 graduate of the U.S. Naval Academy. After graduating from Philadelphia College of Osteopathic Medicine on a 4-yr Navy Health Professions Scholarship in 1989, he completed a general surgery internship at Oakland Naval Hospital. He then attended training at the Naval Aerospace Medical Institute in Pensacola, FL, where he was designated a Naval Flight Surgeon. This was followed by two combat tours aboard the Aircraft Carriers *USS Midway* (CV-41), *USS Independence* (CV-62), and *USS Carl Vinson* (CVN-70) during Operation Southern Watch as the Flight Surgeon for Carrier Air Wings Five and Fourteen, respectively. During this time, he earned his Surface Warfare Medical Department Officer designation. He earned his Naval Aviator designation in 1997. He has accrued over 1200 hours of flight time in various aircraft including the F/A-18, F-14, EA-6B, and S-3 with over 112 arrested landings aboard aircraft carriers and 25 combat missions over Iraq. The Society of U. S. Naval Flight Surgeons has bestowed upon him both the Richard Leuhrs Flight Surgeon of the Year Award for the U.S. Navy and Marine Corps in 1994 and the Sonny Carter Memorial Award in 2000.

From 1997 to 2001, Belland was the Senior Dual-Designated Flight Surgeon at Naval Strike and Air Warfare Center (NSAWC) and Navy Fighter Weapons School (TOPGUN) in Fallon, NV. There he was a co-investigator for USN/USAF photorefractive keratectomy (PRK) studies and groundbreaking classified battlefield laser experiments.

CAPT Belland was the first Navy physician selected to attend the USAF Air War College, a senior service school at Maxwell AFB in Montgomery, AL, where he earned a Masters of Strategic Studies degree. CDR Belland then served aboard the *USS Kitty Hawk* as the Senior Medical Officer/Department Head and Battle Forces Seventh Fleet Surgeon, deploying in support of Operation Iraqi Freedom. In 2004, as Third Fleet Surgeon, he was medically responsible for over 45,000 sailors and marines, served as JTF/JFMCC Surgeon in HLS/D Roles, and managed the Biological Combat Assessment System (BCAS), a PACOM managed, DTRA sponsored, 80-million dollar, 4-year ATD. He then became Director for Health Services at Naval Hospital Charleston. In 2007, he entered USUHS' Preventive Medicine Residency, and has completed an M.P.H. project on mishap reduction at the Naval Strike and Air Warfare Center.

Capt. Belland's awards include the Meritorious Service (three awards), Strike Flight Air, Navy Commendation (two awards), and Navy Achievement (two awards) Medals. He is board certified in Family Practice and is board eligible in Aerospace Medicine. He has earned his Master of Business Administration degree from Western

Governors University. He has served as President of the International Association of Military Flight Surgeon Pilots from 2007-2009 and is a Fellow of the Aerospace Medical Association and serves on several of the Association's committees.



MARIE MARVINGT AWARD

Mary F. Foley, B.S.

Established and sponsored by the French Aerospace Medical Association 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.

Mary F. Foley, B.S., was the 2009 recipient of the Marie Marvingt Award for her research and innovation in aerospace, hospital, and industrial arenas, as well as for her outstanding service to the Aerospace Medical Association (AsMA) for over 50 years. She has investigated pulmonary function testing, acceleration, hypertension, and head cooling. She has also conducted research in the altitude chamber and has used herself as a test subject in flying parabolas to experience zero gravity. Her path echoes that of Marie Marvingt and exemplifies her pioneering spirit. She has advanced aerospace medicine and physiology, clinical health care, and industrial safety with her research and service.

Ms. Foley earned a B.S. in Nursing in 1950 at St. Xavier College in Chicago, IL. From 1951-1952, she served as an Operating Room Nurse at the Mayo Clinic program at St. Mary's Hospital in Rochester, MN. From 1952-1958, she taught Operating Room Techniques first at Madison General Hospital in Wisconsin, then at Mercy Hospital/St. Xavier College. During 1953-1958, she also taught Medical and Surgical Nursing at Mercy Hospital/St. Xavier College. In 1955, she was introduced to the field of aviation medicine upon hearing about the air transport of patients. Intrigued, she travelled around the world in 1956, meeting with airline medical directors and discussing air transport. During this time, she was invited to join AsMA. In 1957, she attended the Transportation Geography course at the University of Chicago, attained a private pilot license, and joined the North Central Section of the Ninety-Nines (the International Association of Women Pilots). In that same year, she attended her first AsMA meeting—she has attended every AsMA meeting since!

Ms. Foley joined AsMA in 1958, was elected a Fellow in 1977, and earned certification as an Aerospace Physiologist, also in 1977. She has been a member of the Aerospace Physiology Society since its inception and was its President from 1981-1982. She has served on AsMA's History and Archives Committee, the International Activities Committee, the Membership Committee, and, for more than 25 years, the Scientific Program Committee.

See FOLEY, p. 684.

From 1958-1960, she served in the USAF Nursing Corp, Active Duty, and was in the USAF Reserves from 1960-1985. During that period, from 1960-1966, she earned a commercial pilot certificate and instrument rating, served at the Aviation Medicine Research Laboratory at Ohio State University in Columbus, and conducted research with Dr. Charles Billings on pulmonary function testing in an altitude chamber, effects of pressure changes on disease processes, and in-flight studies of professional pilot performance in response to oxygen/air mixtures. From 1966-1985, she was a Mobilization Augmentee at Wright Patterson AFB in Dayton, OH.

In 1966, Ms. Foley joined the Cardiopulmonary Laboratory at Ohio State University, where she conducted research until 1969. Also during that time, from 1963-1968, she served in the USAF Space Program in her spare time, volunteering as a subject in Navy motion sickness studies on zero gravity flights, Barany chair rotation at 0 G, and stomach awareness. From 1969-1971, she pursued Ph.D. studies in physiology at Pennsylvania State University. From 1973-1984, she worked on the Medical Monitoring Team at Springs Textiles in Fort Mill, SC, where she conducted pulmonary function testing of mill workers, smoking cessation efforts, a hypertension survey, and studies of genetic factors in hypertension. From 1984-present, she has been serving as an Agency Nurse at Manpower and Assured Health in Gurnee, IL. She remains very active in the Ninety-Nines and is researching women in aviation.



JOHN PAUL STAPP AWARD

Guohua Li, M.D., Dr.PH.

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.

Guohua Li, M.D., Dr.PH., received the 2009 John Paul Stapp Award for his contributions to flight safety. His passion in preventing injuries sustained in aviation crashes, has led him to extensive research on the epidemiology of aircraft crashes and factors related to survival. An extremely creative scholar, he identifies important research questions and answers them with impeccable research. That he has devoted these talents primarily to aviation safety is a boon to the field of aerospace medicine. He recently developed and published the FIA score (Fire, Instrument conditions, and occurring Away from the airport) for predicting fatal outcomes of aviation crashes. This score provides a number between 0 and 3 that conveys the likely outcome of a crash, which helps to identify outliers, thereby helping researchers and investigators to recognize modifiable

differences among aircraft that have the potential to save lives. He has also supplemented NTSB data with national death certificate and hospital data to reveal the injuries most commonly resulting from aviation crashes and most often resulting in death. His research spans over 16 years and includes nearly 50 aviation-related articles.

Born in Hubei Province in China, Dr. Li began his academic training at Beijing Medical University, where he earned an M.B. (the equivalent of an M.D.) in preventive medicine in 1984. In 1987, he graduated from Tongji Medical University in Wuhan with an M.M. (an M.S. equivalent). He then attended Johns Hopkins University School of Hygiene and Public Health in Baltimore, MD, where he earned an M.D. and a Dr.PH. in injury epidemiology in 1993. From 1989-1990, he served as a Postdoctoral Fellow in Epidemiology there. His academic appointments include being a Lecturer in the Department of Biostatistics at Tongji Medical University School of Public Health in Wuhan, China, from 1987-1989, a Research Associate at the Center for Injury Research and Policy at the Department of Health Policy and Management at Johns Hopkins University School of Public Hygiene and Public Health from 1992-1995, an Associate Professor (1997-2001), Professor (2001-2007), and Director of Research (2005-2007) in the Department of Emergency Medicine at Johns Hopkins University School of Medicine. He is currently the M. Finster Chair in anesthesiology and epidemiology at the Columbia University College of Physicians and Surgeons and Mailman School of Public Health in New York from, and Director of the Center for Health Policy and Outcomes in Anesthesia and Critical Care, Department of Anesthesiology, Columbia University College of Physicians and Surgeons.

Dr. Li's awards include the William Haddon Jr. Fellowship from the Johns Hopkins School of Hygiene and Public Health, a Departmental Fellowship from the Department of Health Policy and Management at Johns Hopkins, second place winner of the Alpha Omega Student Paper Contest at Johns Hopkins, finalist in the Young Investigator Competition held by the Space Medicine Association, FIRST Award from the National Institute on Alcohol Abuse and Alcoholism, a Faculty Development Fund Award from the Department of Health Policy and Management at Johns Hopkins, and the Kenneth Rothman Prize from the Editorial Board of *Epidemiology*. He is a Fellow of the American College of Epidemiology and the Aerospace Medical Association, a Guggenheim Fellow of the John Simon Guggenheim Memorial Foundation, and a member of the American Public Health Association.

Dr. Li has been an invited lecturer at over 30 conferences, and has taught courses in biostatistics, alcohol and health, injury epidemiology, occupational epidemiology, and aviation safety. He has served on the Editorial Boards of *Accident Analysis and Prevention*, *Academic Emergency Medicine*, *Disaster Medicine and Public Health Preparedness*, and *Injury Prevention*. He has also performed peer review for a number of journals, including *Aviation, Space, and Environmental Medicine*. He currently serves on the Civil Aviation Safety Subcommittee of the Aviation Safety Committee of the Aerospace Medical Association.



JOHN A. TAMISIEA AWARD

Mary A. Cimmrancia, D.D.S.

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.

Mary A. Cimmrancia, D.D.S., was the 2009 recipient of the John A. Tamisiea Award for her unique role in civil aviation, providing unbiased professional oversight of the issues facing aerospace medicine today. Dr. Cimmrancia is a forensic dentist who uses her skills in the field of aerospace medicine for education, prevention and accident investigation. She has worked tirelessly to guide critical scientific position statements through the AsMA Civil Aviation Safety Subcommittee and Aviation Safety Committee, achieving balance and maintaining the respect of all members, despite some radically opposed viewpoints. Her role in the Age 60 position paper is typical. This contentious issue had been problematic since its inception. Dr. Cimmrancia was instrumental in achieving a consensus that was ultimately approved and published.

She also works in the area of prevention, publishing information for travelers and advising pilots in dental care. She has recently assisted the law enforcement pilots of the United States in a comprehensive prevention program to maintain health and certification. She also works in general dentistry with prevention programs for low income, inner-city children and is the in-patient dental consultant for patients at Marquette University. She was one of the first to alert physicians to the severe dental complications of biphosphonate therapy. She also teaches accident investigation and site safety for the Department of Transportation, Transportation Safety Institute at CAMI in Oklahoma City and assisted in the response to Hurricane Katrina, deploying with her team for 2 weeks on site.

Dr. Cimmrancia earned a B.S. in Dental Hygiene from Marquette University in Milwaukee, WI, in 1978 and then her D.D.S. in 1984. She served a general practice residency from 1984-1985 at the Department of Medicine and Surgery, Zablocki Veterans Administration Medical Center in Milwaukee. She has been in private practice since 1985.

Dr. Cimmrancia also works for the Region V Disaster Mortuary Operations Response Team, where she has served since 1998. In 2000, she worked as a Staff Dentist on temporary appointment at the Zablocki VA Medical Center. She is affiliated with the Cook County Medical Examiners Disaster Response Team in Chicago and with the Wisconsin Dental Association Mass Disaster Dental ID Team. Additionally, she has served her community as Staff Dentist and later Clinical Advisor at Madre Angela Dental Clinic starting in 2005. She has taught at Marquette University, the Armed Forces Institute of Pathology/American

Registry of Pathology, the National Aircraft Accident Investigation School, the University of Texas Medical Branch in Galveston, the North East Multi-Regional Training Mobil Training Unit, and the Training and Standards Bureau.

Dr. Cimmrancia was awarded the Federal Service award for Technical Assistance from the Transportation Safety Institute in Oklahoma City in 1998, and was elected to Omicron Kappa Upsilon Honor Society at Marquette University in 2000. She is a member of the American Society of Forensic Odontology, and a member of the International Society of Air Safety Investigators. A Fellow of AsMA, she has served as Chair of the Civil Aviation Safety Subcommittee of the Aviation Safety Committee and on the Resolutions Committee, has worked on various position papers, established working groups, and co-chaired several panels.



HARRY G. MOSELEY AWARD

Lt. Col. Kathryn G. Hughes, MC, USAF

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 Lockheed-Martin Corporation.

Lt. Col. Kathryn G. Hughes, USAF, MC, was the 2009 recipient of the Harold G. Moseley Award for her superior dedication to improving safety through rigorous ground and in-flight testing of protective flying equipment and aircrew helmets. She has also conducted investigations into mishaps due to controlled flight into terrain and G-induced loss of consciousness and has participated in mishap boards. Her experience and knowledge of full-coverage G-suit technology has been critical to the U.S. Air Force's assessment of whether to incorporate it into the F-16 to prevent mishaps and save lives.

Lt. Col. Hughes is currently a resident in Aerospace Medicine (RAM), Class of 2011, at the USAF School of Aerospace Medicine in San Antonio. She recently completed a Master of Public Health Degree at the University of Michigan and will soon begin the Aerospace Medicine year at Brooks City-Base, TX. She earned her commission from the U.S. Air Force Academy in 1988 with a Bachelor of Science degree in Biology. After graduation from undergraduate pilot training at Laughlin AFB in Del Rio, TX, in 1989 she became a T-38 Instructor Pilot and Standardization/Evaluation Pilot, first at Laughlin AFB, then as part of the Accelerated Copilot Enrichment program at Offutt AFB. In 1993 she attended KC-135 Aircraft Commander training and flew the RC-135, providing strategic electronic reconnaissance on missions around the world. She then earned her Medical Degree at the University of Nebraska Medical Center, where she served as Class President for 4 years. She completed an

See HUGHES, p. 686.

HUGHES, from p. 685.

intern year in General Surgery before being stationed as a flight surgeon at Mountain Home AFB, ID. Kathy was OIC of the Physical Exam section, Team Chief for the hospital's Initial Response Team, and was responsible for training and qualifying the flight surgeons and flight medicine clinic to perform FAA physical exams. While serving at the Idaho Air National Guard in Boise, she was selected as the Air Combat Command Flight Surgeon of the Year for 2001.

In 2002 Lt. Col. Hughes entered the USAF's Pilot-Physician Program and was selected to serve in the unique role of A-10 pilot-physician on an active duty tour with the Idaho ANG. She also served as medical liaison to the Air Expeditionary Force Battlelab and saw clinic duty at both at the Guard base in Boise and the flight medicine clinic at Mountain Home AFB. Based upon her previous successful assignments Kathy next was handpicked to serve as the Senior Medical Officer/Pilot on exchange with the Royal Air Force Centre of Aviation Medicine at RAF Henlow, UK. There she flew the Hawk aircraft in clinical and flight equipment trials, and trained future Typhoon pilots during pre-employment training, including the first two Saudi Typhoon pilots. During her time at RAF CAM, Kathy also worked in the flight medicine clinic at RAF Lakenheath and in 2007 became only the third USAF exchange officer to earn the Diploma in Aviation Medicine from Kings College, London.

Lt. Col. Hughes is a command pilot and senior flight surgeon with over 3,000 hours and is one of the Air Force's few pilot-physicians. She has flown the T-38, RC-135, A-10, and the Royal Air Force Hawk as senior medical officer/pilot. Her awards include the Meritorious Service Medal with oak leaf cluster, the Air Force Commendation Medal with oak leaf cluster, the National Defense Service Medal with bronze star, the Humanitarian Service Medal, the Military Outstanding Volunteer Service Medal, and the NATO Medal. She is a member of the Royal Aeronautical Society, the International Association of Military Flight Surgeon Pilots, Women Military Aviators, Order of the Daedalians, the 99s: International Organization of Women Pilots, the Experimental Aircraft Association, and the Society of U.S. Air Force Flight Surgeons. She is an Associate Fellow of the Aerospace Medical Association.



ARNOLD D. TUTTLE AWARD

David M. C. Powell, FAFOEM

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 Aviation, Space, and Environmental Medicine. Sponsored by Wyle Laboratories.

David M. C. Powell, FAFOEM, received the 2009 Arnold B. Tuttle Award for his role as lead author of

"Fatigue in two-pilot operations: implications for flight and duty time limitations" (ASEM 2008; 79:1047-50). This article investigated the role of duty length, time of day, and whether one or two sectors were flown in fatigue reported at the top of descent in regional two-pilot operations. Samn-Perelli fatigue ratings were collected from two-pilot operations ranging from 3-12 hours over a 12-week period. The authors found that time of day had a marked effect on the pattern of fatigue at the start of duty and on the rate at which fatigue levels increased, with the highest levels found at the circadian low. They also found that fatigue increased with length of duty and was higher at the end of a two-sector than a one-sector flight.

A native of New Zealand, Dr. Powell graduated in Medicine in 1985 from Auckland, NZ, and spent his first intern pay check on flying lessons. He was a medical officer in the Royal New Zealand Air Force (RNZAF) from 1987-1991, working as Base Medical Officer in Auckland, with a deployment to Bahrain during Operation Desert Storm in 1991. He was a trainee in anaesthesia 1991-1993 and then re-entered the RNZAF in command of the Aviation Medicine Unit from 1993-7. After a short engagement with the Auckland Rescue Helicopter Trust in 1997, he became Chief Medical Officer of Air New Zealand from 1997-2009, and recently has taken on a new role as part-time Aviation Medicine Specialist with Air New Zealand. He continues to chair the Air New Zealand Crew Alertness Study Group whose work was the focus of the paper that won the award. He has been a Clinical Senior Lecturer in Aviation Medicine with the University of Otago for over 10 years and is Deputy Director of the Aviation and Occupational Medicine unit there.

Dr. Powell has postgraduate fellowships in both general practice and occupational medicine, and is one of two doctors to hold both the Otago and UK Diplomas in Aviation Medicine. He is current President of the Aviation Medical Society in New Zealand. He also holds commercial airplane and helicopter licenses and an instrument rating and continues to fly actively, with a shareholding in a Robinson 44. He is an invited member of the International Air Transport Association Medical Advisory Group, a member of the Australia and NZ Society of Occupational Medicine, the Royal Aeronautical Society, the International Academy of Aviation and Space Medicine, and a Fellow of the Aerospace Medical Association.

Dr. Powell's accomplishments include installation of cardiac defibrillators to Air New Zealand jet fleet 2001 with two successful resuscitations resulting in long-term saves, development of a successful sustained aircrew fatigue monitoring program, and creation thereby of one of the largest sets of real-route airline crew fatigue data in the world, simplification of internal procedures for passenger medical clearance and successful outsourcing of outstation medical care and in-flight passenger medical emergency advice, co-ordination of successful airline response to the SARS crisis, creation and leadership of a comprehensive in-house occupational medical service, leadership of a team that introduced an alcohol and drug program for safety-sensi-

See POWELL, p. 687.

POWELL, from p. 686.

tive staff, and establishment of a new international postgraduate course in Aeromedical Evacuation. He has published over 42 journal articles, chapters, and reports, as well as numerous presentations delivered in a variety of international aviation medical, occupational medicine, and operational airline settings.



JULIAN A. WARD AWARD

Serena M. Auñón, M.D., M.P.H.

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 relating 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.

Serena M. Auñón, M.D., M.P.H., was the 2009 recipient of the Julian E. Ward Memorial Award for her trend-setting contributions to spaceflight participant clinical care and her extensive community service. She developed two medical kits to support launch and landing in Kazakhstan and coordinated the medical evaluation of several spaceflight participants. Her work resulted in publication on the medical evaluation of a spaceflight participant (ASEM 2006; 77:475-84). She also provided medical support for zero gravity flights, bed rest and centrifuge analog environments, and space operations at the Gagarin Cosmonaut Training Center. While carrying a full MPH load and practicum schedule, she served in Katrina medical support, supported the Wings over Houston and the Lonestar Air Shows, and presented Space Medicine Grand Rounds at NASA.

Dr. Auñón graduated cum laude in 1997 with a B.S in Electrical Engineering from The George Washington University. She received her Doctorate of Medicine from the University of Texas – Health Science Center at Houston in 2001, and a Master of Public Health degree from The University of Texas Medical Branch in 2006. After completing medical school, she trained in Internal Medicine at The University of Texas Medical Branch in Galveston, TX. She completed an additional year as Chief Resident and was certified by the American Board of Internal Medicine. She then completed an additional 2 years of training in Aerospace Medicine at UTMB and was certified by the American Board of Preventive Medicine. During her residency she also served as the Clinical Currency Coordinator for NASA flight surgeon training at UTMB and as a medical monitor for the artificial gravity and bed rest projects. She supported the launch of spaceflight participant Charles Simonyi from Baikonur, Kazakhstan on 14S and participated in the medical evaluation of other spaceflight participants through Space Adventures.

Dr. Auñón was hired as a flight surgeon under the UTMB/Wyle Bioastronautics Contract in August of 2006. Since that time she has spent over 9 months in Russia supporting medical operations for ISS crewmembers in Star City, including water survival training in the Ukraine. She is currently assigned as the deputy crew surgeon for STS-127 and Exp. 22. She also serves as the deputy lead for Orion – Medical Operations. She is a Diplomate of the American Board of Preventive Medicine and the American Board of Internal Medicine, and a volunteer Faculty Physician at St. Vincent's House Free Clinic. She is also a member of the Alpha Omega Alpha Honor Society, The American College of Physicians, the American College of Preventive Medicine, Tau Beta Pi of the National Engineering Honor Society, the Space Medicine Association, and the Aerospace Medical Association.

Dr. Auñón's awards include the Outstanding UTMB Resident Award, the Thomas N. and Gieves James Award for Excellent Performance by a Third-Year Resident in Internal Medicine from UTMB, Outstanding Resident in Outpatient Internal Medicine Clinic, UTMB (twice), Dean's List at George Washington University, and National Hispanic Merit Scholar. She has been a speaker at eight programs and has been a co-author on four papers.

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SPACE MEDICINE ASSOCIATION NEWS

Humans in the Air and Space – Looking Beyond 2020

By Laurence R. Young, MIT

Now is a transition time for the human role in aviation and space. Forty years have past since the first lunar landing, and several years lie ahead before our return to the Mmoon and possible travel beyond to Mars. Single pilot military combat aircraft are being replaced by remotely operated, ground controlled Unmanned Aerial Vehicles Systems (UAVSs). As the density of planes rapidly increases in our airspace, the skies in the U.S. will start to look like Manhattan during rush hour. To determine the long range research needed to solve the aerospace challenges in the period beyond 2020, a group of about 100 aerospace life science and human factors experts assembled at the Massachusetts Institute of Technology (MIT) on March 5, 2009. The meeting, Aerospace Medical and Human Factors Challenges, was held in conjunction with a celebration of the 65th birthday of Dr. Charles Oman, Director of MIT's Man-Vehicle Laboratory. It was generously sponsored by the National Space and Biomedical Research Institute (NSBRI), the Massachusetts Eye and Ear Infirmary (MEEI), and MIT's Department of Aeronautics and Astronautics.

In aviation human factors, the Next Generation Air Traffic Control System (NextGen) is expected to handle twice the current number of aircraft and will alter the role of the air traffic controller's role from vectoring individual aircraft to monitoring and supervising a 4-D trajectory system which accounts for weather, transit time and fuel usage (Tom Sheridan, MIT and the Department of Transportation (DOT)-Volpe National Transportation Research Center). This expanded role will also extend to the pilot, who will increasingly become increasingly more concerned with larger strategic air traffic control issues and less with the tactical issue of aircraft control. Traffic Collision Avoidance System utilization and its misuse serves to remind us of this dichotomy in the air (Jim Kuchar, MIT Lincoln Lab). On the unmanned side, the increased information flow involved in controlling numerous UAVs will call for more systems and communication training and Human-Computer Interface (HCI) advances, and may alter the need for trained pilots to fly UAVs (Missy Cummings, MIT). The changes implied by the implementation of NextGen and the increased use of unmanned cargo aircraft will place increasing demands on universal access to flight simulators, with special emphasis on training of communication skills and the use of multiple data channels and advanced technologies (Judith Bürki-Cohen DOT). The vast increase in software being utilized in the cockpit, which has long ago made the flight engineer obsolete, will be accompanied by an enormous growth in communication bandwidth, greater than 10^6 GHz, allowing everyone in a military or commercial network to be linked together. The appropriate use of such high density linkage remains to be worked out (Greg Zacharias, Charles River Analytics).

Turning to the field of bioastronautics, the human factors challenges remain largely the same as those identified by reports to NASA a decade ago, yet the immediacy of their application increases with the plans for the forthcoming lunar exploration (Dava Newman, MIT). In particular, emphasis on further research of the sensorimotor system is needed, as transitions between Earth, Moon and orbital g levels imply operational constraints on landing and surface exploration. Countermeasure development will emphasize integrating various techniques – from artificial gravity and exercise to the development of adaptability training, virtual reality and drugs for promoting neural plasticity (Jacob Bloomberg, NASA). The unknown effects of sustained living in the 1/6 g of lunar gravity will demand extensive human physiological testing on the Mmoon. Going beyond to an extended Martian Expedition voyage will require artificial gravity with the capability for dual (Martian and Earth gravity) adaptation (Bill Paloski, University of Houston). The timing for strategic planning in space biomedicine needs to occur now just right, as we move into an era with an increased International Space Station (ISS) crew and the potential benefits of an ISS National Laboratory (Jeff Sutton, NSBRI).

The long tradition of concern with astronaut spatial disorientation and motion sickness, and underlying vestibular dysfunction, continues to present opportunities (Conrad Wall, MEEI). Turning to the Earth benefits of space research, vestibular disturbances, both clinical (e.g. vestibular hydrops) and in space following g-transitions, are potentially and importantly linked to degraded cognitive performance (Owen Black, Legacy Health Science Center, Portland, Oregon). About 1/3 of patients reporting "dizziness" cannot be diagnosed using current vestibular tests relying on the VOR???. Diagnosis might be significantly sharpened by using measures of perceptual thresholds, akin to hearing tests. Potential technological therapeutic measures of interest include tactile balance aids, vestibular im-

plants akin to cochlear implants, and vestibular neural stimulation (Dan Merfeld, MEEI). Some of the inertia in clinical acceptance of this new technology is inherent in our medical education. In the age of massive information storage and retrieval, the medical world needs to be trained to regard the patient as a system, and to understand the role of diagnostic and therapeutic tools from a systems viewpoint (Lew Nashner, Neurocom). Newer communication technology will enable the patient to be continually monitored on a multiplicity of physiological parameters while going about normal activities outside of the clinic (Ted Smith, Health Central Network).

Finally, turning to the direct users of advanced research and development, four astronauts assessed the future needs from a user point of view. Each astronaut of the future should be able to control his or her own process of adaptation, using training and countermeasures, to account for the large variability in human responses (Jay Buckley, Dartmouth). Referring to robot assisted microsurgery as a successful example, the space community must move towards a more rational decision making model for assigning exploration functions to humans and to robots (Jeff Hoffman, MIT). It still remains a challenge to continue to innovate and improve EVA tools and suits, displays and gloves, and to make it possible to function in space or on another planetary surface as effectively (and painlessly) as on Earth (Dan Burbank, NASA). Effective operation in orbit and on the Moon will require sensory augmentation and the presentation of the right data at the right time. Renewed emphasis on the techniques for "teaming" and feedback to let the astronaut know when he or she is near the performance limit, are both high priorities (Steve Robinson, NASA).

In summary, the panels and participants agreed on the wealth of opportunities and challenges in the future, the need for continued advanced training of researchers, and especially the need to revitalize the basic research and development support needed to carry us forward as we expand the exploration of space.



MVL Directors--The three Directors of MIT's Man-Vehicle Laboratory: Charles Oman, Ph.D. (1988-); Y. T. Li, Ph.D. (1963-82); and Larry Young, Sc.D. (1972-93) at the March 2009 Workshop.

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CDR David B. Canton, MC, USCG, formerly the Chief Medical Officer, National Disaster Medical System (NDMS), has retired from active Federal service after 28 years and is now Medical Director of Emmanuel Physician Center in Turlock, CA.

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COL Warner D. ("Rocky") Farr, MC, USA, after 3 years is moving from Command Surgeon, U.S. Special Operations Command, MacDill AFB, FL, to Command Surgeon, Special Operations Command Central, U.S. Central Command, also in Tampa, FL. Col Farr completed 42 years of active army service 23 April 2009. COL Farr is a Fellow of AsMA.



In Memoriam Charles Gullett

Charles Gullett, M.D., died in October 2008. He was the former Medical Director for Trans World Airlines and an AMDA member since 1958. A native of Ohio, he received his medical degree from Indiana University School of Medicine in 1947. He graduated from the School of Aviation Medicine in 1951, was designated an Aviation Medical Examiner, and served as a Flight Surgeon in the U.S. Air Force. Upon discharge from active duty in 1953, he was appointed to the Medical Staff of Trans World Airlines in Kansas City, MO, and was later promoted to Director in 1958. He also served as Medical Advisor and consultant to Ethiopian Airlines and Saudi Arabian Airlines.

Dr. Gullett was a recognized authority in aviation medicine and was certified by the American Board of Preventive Medicine. He served in many offices and committees, including as President of the Airline Medical Directors Association (1961 and 1962), on the Aerospace Committees on Safety and Health, as Chairman of the Commercial Flyer and Passenger Subcommittee, and on AsMA's Scientific Program Committee. He was also a member of the Air Transport Association Medical Committee and the International Air Transport Association Medical Committee. He chaired the Subcommittee on Aeromedical Considerations in the design of a supersonic commercial transport and appeared before numerous organizations as a speaker and lecturer on various aspects of aviation medicine.

Dr. Gullett authored the High Altitude Physiological Indoctrination course now used in TWA's jet training center and also organized and conducted a third-year Aviation Medicine Residency Program at TWA. He was also a member of the Federal Air Surgeons Council of Research Advisors and organized and directed the launching of the Occupational Medical Department for the

Apollo Space Program under a NASA Base Services contract. He was awarded the Austerman Award-Surgery Thesis I.U. in 1947 and the KMBC Citizen of the Week Award in 1962. He was a member and Fellow of AsMA and received the George J. Kidera Award for Outstanding Achievement from the Airline Medical Directors Association in 1977.

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