

Society of U.S. Army Flight Surgeons & USAAMA Awards

Theodore Lyster Award

MAJ Joseph B. Eddins

*United States Army Medical Evacuation
Pronepony Directorate, Fort Rucker, AL*

The Theodore C. Lyster Award is named for BG Theodore Lyster, the Father of Aviation Medicine, who created the occupational specialty of the flight surgeon, the first aeromedical research laboratory, and promulgated the first military aeromedical standards while serving as the first Chief Surgeon of the Aviation section of the Army Signal Corps. The Society of U.S. Army Flight Surgeon's annual Theodore C. Lyster award is given to the flight surgeon or aeromedical physician assistant who has made the most outstanding contributions toward Aviation Medicine.

Spurgeon Neel Award

COL Salvador P. Renteria

*United States Army Aviation Center of Excellence,
Fort Rucker, AL*

MG Spurgeon Neel laid down the foundation for MEDEVAC operations and was the Army's first aviation medical officer. He designed and was the first recipient of the Aviation Medical Officer badge. The Spurgeon Neel award is given annually to the most outstanding operational flight surgeon or aeromedical physician assistant.

Aerospace Medicine Specialist of the Year

COL Samuel W. Sauer

*Program Director & Dean of Graduate Medical
Education, United States Army School of Aviation
Medicine, Naval Air Station, Pensacola, FL*

Order of Aeromedical Merit

Colonel(R) John P. Albano

*Robert E. Mitchell Center for Prisoner of War
Studies, Naval Operational Medicine Institute,
Naval Air Station, Pensacola, FL*



HALEY AWARD--The U.S. Army Aviation Medical Association recognizes the most outstanding contribution to rotary wing aeromedical literature through the Haley writing award. John Crowley, M.D., (left) incoming president of USAAMA, presents the Haley Award to Steve Gaydos, M.D., M.P.H. (right). Dr. Gaydos was the sole author on "Low Back Pain: Considerations for Rotary-Wing Aircrew," *ASEM* 2012; 83:879-89. He was co-author on "Ten Years of Spatial Disorientation in U.S. Army Rotary-Wing Operations," *ASEM* 2012; 83:739-45.

Life Sciences and Biomedical Engineering Branch Awards

LSBEB A. Howard Hasbrook Award

John A. Plaga

This award, presented to Mr. John A. Plaga, Senior Research Aerospace Engineer in the USAF's Human Systems Integration Directorate of the 711th Human Performance Wing at Wright Patterson AFB, OH, recognizes an individual who has provided noteworthy data or design with respect to safety, survivability, or crashworthiness relevant to aircraft or space vehicles. It is sponsored by Oregon Aero.

Mr. John Plaga has made significant contributions in the fields of safety and crashworthiness in his career in the U.S. Air Force.



His efforts were critical in addressing critical shortfalls in test manikin Data Acquisition Systems (DAS). He led the effort to procure and qualify improved devices which were successfully tested in the U.S. as well as a special series in Russia at an un-

precedented 3 week study at an altitude of 56,000 feet at Mach 2.5 in a modified MiG-25. The new DAS has become the de facto standard for DoD ejection testing, including the manikin/DASs used to qualify the ejection seats for the T-6 and F-22 aircraft.

Mr. Plaga was also critical in providing a method to determine the safety of various ejection systems by developing a comprehensive injury risk analysis software package that resulted in being able to analyze ejection test data in a matter of hours rather than the days previously required. This provides timely critical information required for the program managers to make decisions concerning test series parameters at high cost facilities, such as the Holloman High Speed Test Track and the Navy Supersonic Naval Ordnance Research Track (SNORT).

Mr. Plaga was also instrumental as part of the joint USAF/USN team to define injury criteria and assess neck injury potential during ejection events for the JSF program. Mr. Plaga was involved in analyzing all of the injury criteria for each ejection test and working with the team on deciding the implications of the results. His expertise with human injury criteria and analysis was also leveraged for other programs, such as the Modular Aircrew Common Helmet, where he helped develop the system specification.

LSBEB Professional Excellence Award

William R. Ercoline

This award, presented to Dr. William R. Ercoline, who currently manages operations for WYLE Science, Technology & Engineering Group in San Antonio, TX, recognizes an individual who has produced outstanding research accomplishments or technical and/or research management achievements important to life sciences and/or biomedical engineering for a number



LSBEB PROFESSIONAL EXCELLENCE--Bill Ercoline (left) receives the Professional Excellence Award from Don White (right), LSBEB President.

of years. It is sponsored by Eagle Applied Sciences.

William (Bill) R. Ercoline, Lt. Col. (retired), USAF, has an M.S. Engineering Physics degree from AFIT and a Ph.D. in Engineering Management; he has over 4,000 flight hours in a variety of military and general aviation aircraft; and 40 years of research in spatial disorientation countermeasures, innovative flight symbology, laser eye protection, and general aviation psychology and physiology. He's a former associate Professor of Physics from the USAF Academy.

Dr. Ercoline provides direction to RDT&E support provided to the USAF School of Aerospace Medicine (USAFSAM). He consults with USAF accident investigation boards and lectures at USAFSAM. He has published many articles about the costs, causes, and countermeasures of spatial disorientation, and he co-edited and co-authored with Dr. Fred Previc the textbook "Spatial Disorientation in Aviation." Bill lectures internationally on the subject of spatial disorientation and serves on multi-service working groups and international organizations that specialize in aircrew performance in high workload environments. He provides laser eye protection research support for the Directed Energy Branch of the Air Force Research Laboratory. He's been an active member of the Aerospace Medical Association since 1985, is an Aerospace Human Factors Association (AsHFA) fellow, and has served as a journal paper reviewer and as an officer in several of the sub-organizations within AsMA.

LSBEB Research and Development Innovation Award

Richard (Andy) McKinley

This award, presented to Dr. Richard (Andy) McKinley of the 711th Human Performance Wing at Wright Patterson AFB, is given to an individual who has demonstrated innovative life sciences and/or biomedical engineering research as related to the design or development of aerospace medical equipment or systems. This award is sponsored by the David Clark Company, Inc.

See *LSBEB*, p. 903

LSBEB, from p. 902.

Dr. Richard (Andy) McKinley's areas of expertise include innovative neuroscience, human physiology, and spatial disorientation research. He has established himself as a leader in active non-invasive brain stimulation and expanded his research to provide a tool for cognitive enhancement for the Air Force. His research has provided evidence



that this technology can substantially prolong vigilance and accelerate training of image analysts, both of which have immediate implications for improving the Air Force Intelligence, Surveillance, and Reconnaissance missions. He is continuing development of this innovative

research to study the effects of non-invasive brain stimulation on procedural learning and visual search while beginning to elucidate the mechanisms of action with the Air Force Office of Scientific Research (AFOSR). In fact, initial results suggest that procedural learning may be accelerated by approximately 200% with this technology. Dr. McKinley leads the research group for AFOSR's "BIONIC" Center of Excellence with Georgia Tech and executed a joint research plan for cognitive enhancement that supports ongoing research conducted within his Division.

Dr. McKinley has also developed several models of human physiology and the effects of sustained acceleration on specific cognitive abilities. Through his Ph.D. dissertation research, he developed quantitative algorithms that tie the physiological and cognitive components together. The result was a validated comprehensive model of pilot cognitive function based on cardiovascular and neural physiology under high G_z stress. This model is the first of its kind and provides a major milestone in the area of acceleration research. Additionally, it provides multiple applications including Air Force mission planning, pilot training, improved adversary simulation, analysis of astronaut launch and reentry profiles, and safety analysis of extreme amusement rides.

LSBEB Ross McFarland Student Award Maggie Coppini

This award is given to the author of the best student research paper accepted by the AsMA Scientific Program Committee that reports on a significant achievement in biomedical engineering. There are no nominations for this award. The best abstract from those submitted by students each year is selected by a committee who rate the scientific merit, clarity of presentation, application of the findings, and scope of interest in research outcome. The McFarland Award is sponsored by Gentex Corporation.

The 2013 winner is Capt. Maggie Coppini, USAF, for "Hypoxia symptoms and recognition as a function of hypoxia onset rate." Current normobaric aviator hypoxia training involves the use of a Reduced Oxygen Breathing Device to simulated altitude exposures climbing from 8,000 ft to



LSBEB MCFARLAND AWARD--Donald White, LSBEB president, presents the 2013 Ross McFarland Student Award to Capt. Maggie Coppini, USAF.

25,000 ft at a rate of 12,000 ft per minute. Her study addressed the question of how onset rate affects physiologic response. Ten active duty USAF pilots participated and subjective symptoms and objective signs (heart rate and blood oxygen saturation) were recorded. The results indicated that blood oxygen saturation dropped much lower during a gradual onset profile before the initial recognition of hypoxia symptoms and activation of the emergency oxygen system. Heart rates were also more variable in the gradual profile than in the rapid one. Additionally, 50% of the population sample experienced different subjective symptoms of hypoxia between the two profiles. Given the differences in response, Capt. Coppini recommended that a more comprehensive hypoxia training syllabus be implemented to include both types of profiles during training for Air Force aviators, so they can detect hypoxia in a wider range of conditions and more effectively take action to prevent ensuing impairment.

NOMINATE A COLLEAGUE FOR AN AWARD! January 15 is the deadline for nominations for the 2014 meeting. The form is available on the AsMA website.



JIM LOVELL WITH THE SOCIETY OF NASA FLIGHT SURGEONS--Jim Lovell, center, is most famous as the commander of the Apollo 13 mission, which suffered a critical failure en route to the Moon, but was brought back safely to Earth by the efforts of the crew and mission control. Lovell was also the command module pilot of Apollo 8, the first Apollo mission to enter lunar orbit. Lovell is a recipient of the Congressional Space Medal of Honor and the Presidential Medal of Freedom. He is one of only 24 people to have flown to the Moon, the first of only 3 people to fly to the Moon twice, and the only one to have flown there twice without making a landing. Lovell was also the first person to fly in space four times [information courtesy of Wikipedia]. He is pictured with members of the Society of NASA Flight Surgeons after providing the luncheon lecture at the AsMA 84th Annual Scientific Meeting.

Civil Aviation Medical Association (CAMA) Annual Scientific Meeting

September 26-28, 2013

Renaissance Orlando Sea World

The registration form and conference program are posted to the CAMA Web Site:

<http://www.civilavmed.com/>

For additional information contact CAMA at CivilAvMed@aol.com or call 770-487-0100

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