President's Page

Friends, Colleagues,

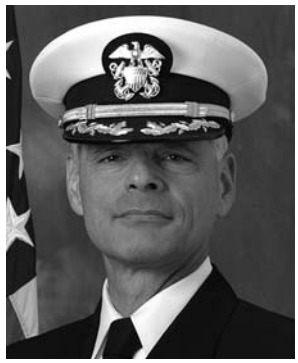
With this President's Page, I kick off "Project Outreach," another tool designed to help bolster our sagging membership. As most of you know, the term "outreach" refers to the a priori seeking of avenues whereby contact between individuals or institutions is established and information exchanged. This has always been and remains one of the strongest supporting pillars of AsMA's foundation.

A number of our members routinely contact various organizations with the goal of providing them with briefs about aerospace medicine and human factors and AsMA. I can tell you that our Executive Director, Dr. Rayman, has made outreach one of his primary tasks during his tenure at the AsMA Home Office. Over the years, he has visited many universities and defense commands, the result of which has been the addition of many new members. Efforts such as Dr. Rayman's are to be commended, as they not only educate, but also bring AsMA directly to prospective members in a most effective personal, face-to-face manner.

This "Project Outreach" is about having our members volunteer their time and energies to take AsMA to those who can most benefit from becoming members. Such efforts include military and civilian aerospace medicine and human factors commands, colleges, universities and industries with these programs, government ministries associated with aerospace activities, air and spacecraft system contractors and subcontractors, other professional organizations with interests in these areas.....the list goes on.

The primary goal of "Project Outreach," then, is to ask our entire membership to start volunteering a bit of their extra time to making contacts with such institutions, informing them as to who you are and your relationship with AsMA, and then volunteering to provide briefs on aviation and space medicine, human factors, and the plethora of specialties falling under these vast umbrellas.

Discuss those topics of interest to you; those about which you are most versed, and gear them to the needs of your audiences. For example, if there is a junior high school or high school near you, you might see if they have an interest in such a presentation; young people still very much enjoy learning about aviation and space exploration, especially at this time when, as the Space Shuttle fleet approaches retirement, sights and resources are being reset on manned explorations of the Moon and even Mars. What better way to stimulate the excitement



Andrew H. Bellenkes, Ph.D.

in our young people than to provide them with a means to discuss these projects of their near future, the challenges that lie ahead and their possible roles in making such adventures come to fruition.

Another example: If there is a fixed-base operator, Civil Air Patrol unit, or a military squadron at an airfield near you, you might ask the manager or unit commander if he/she would be interested in sponsoring a briefing (by you) on flight safety, citing recent case histories about how aeromedical and human factors may have played roles in mishaps, and showing crews ways to minimize hazards and risk. I have often provided such "safety stand-down" briefs to military command safety stand-downs, FBO safety meetings, as well as various civilian flight organizations, and the response has been very positive indeed. Civilian, commercial and military aircrews, and flight students need and seek out subject matter experts (SMEs) in aviation medicine and human factors, and AsMA is the locus of such information; if you will, AsMA is SME Central!

Let me then ask you to take a moment and think about how you as an active AsMA member can contribute to "Operation Outreach"; how you can better educate those interested or involved in aviation or space about the ongoing human-centered challenges they face, and about AsMA as a means to become best involved in the areas discussed. How better to possibly bring onboard new members than by actually meeting with them, answering their questions, and letting them know how AsMA membership could benefit them as well.

Please feel free to contact me with your "Operation Outreach" activities or if you have any questions about this effort. I look very much forward to hearing from you!!

Association News

Executive Director's Column

Rayman

Who We Are

In formal and informal discussions, I more frequently hear the interrogative "who are we?" rather than the declarative "who we are." In the minds of some, the answer is ambiguous, while in the minds of others, the answer is unequivocal. We are an International Medical Association based in the U.S. We are an international medical association because our members represent over 70 countries. We carry American colors only because our headquarters is housed in Virginia and we are subject to U.S. laws, particularly tax laws, as well as to American professional regulatory agencies. All, regardless of nationality, enjoy (or decry!) the same dues structure, all of us have equal privileges, and all of us can fully participate in governance, including holding office, voting, and participating on committees. Furthermore, as we have formulated our policies and procedures, we have done so with an international rather than a national perspective.

We are and have been credentialed in the U.S. as a medical specialty since 1953. We are recognized as a specialty by the American Board of Medical Specialties (ABMS) and credentialed by the American Medical Association House of Delegates (AsMA has one Delegate and one Alternate Delegate). Our patient population includes civil and military, all those who fly, space crews, air traffic controllers, and other related support personnel.

We are an association of professionals with varied credentials. Consequently, our day to day professional responsibilities differ. But all of this blends into a kaleidoscope of aerospace medicine activities that support aviation and space personnel. Each of us is important regardless of what we do. We are a multidisciplinary team whether in clinical medicine, research, or aviation/space operations. (Incidentally, our specialty is not the only one that is multidisciplinary. I would cite radiology and occupational medicine as examples.)

So, let us nail our colors firmly to the mast so we (and others) know who we are.

(P.S. I would like to take this opportunity to thank so many of you for your cards and calls of condolence during my recent bereavement).

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NEW IMPROVED WEB FEATURE: POLICY COMPENDIUM

Some of you may be aware that you can already access AsMA position papers and resolutions online. But we've just made it easier for you! Previously, you had to scroll through an extensive PDF file that contained all papers since 1992. You can now view and print each paper from the table of contents. Just go to our Home Page (www.asma.org) and click "About the AsMA". Then scroll down to "Download-able Materials". Select "Policy Compen-dium" and you will have a table of contents from which you can choose the document you wish to view or print.

ICAO'S PRESIDENT VISITS AN AVIATION MEDICINE CENTER--(Upper) In connection with his official visit to Romania, Mr. Roberto Kobeh González, President of ICAO, accepted the invitation to visit the National Institute of Aerospace Medicine (INMAS). He is seen with AsMA member Dr. Marian Macri, Director of the Institute and other high level officials as follows: Mr. Radu Gheorghe Catalin (DGCA), Mr. Catalin Cotrut (Repre-sentative of Romania on the ICAO Council), Ms. Cristina Donciu (Senior Adviser DGCA), Dr. Dragos Popescu (Head of INMAS Research and Training Department), and Dr. Dragos Vlad (Public Relations INMAS Officer). (Lower) Dr. Macri, in addition to demonstrating the Institute's facilities, informed ICAO's President that Aerospace Medicine has been included in the curriculum of studies in Medical School. The Institute is preparing to host the 2011 International Congress of the IAASM.

Meetings Calendar 2008-2009

September 5-6, 2008; Review Course for Wound Care Certification; San Antonio, TX. Info: www.hyperbaricmedicine.com

September 7-11, 2008; 56th International Congress of Aviation and Space Medicine (ICASM 2008); Bangkok, Thailand. Meeting brochure and Call for Papers is available at www.icasm2008.org/download/2nd_Announcement_MIN.pdf. For more information, including registration, please visit their website at www.icasm2008.org.

September 10-12, 2008; ALTA's 2008 Aviation Crisis Preparedness Conference and Aviation Law Americas Conference; Miami, FL. Registration and information are available at www.alta.aero/crisispreparedness and www.alta.aero/aviationlaw.

September 21-22, 2008, 6th Annual Meeting of the Society for Human Performance in Extreme Environments. New York, NY. Info: www.hpee.org; jason.kring@erau.edu.

October 15-18, 2008; XXV International Meeting of Aerospace Medicine; Zacatecas, Zac., Mexico. Sponsored by the Mexican Association of Aviation Medicine and the Iberoamerican Association of Aerospace Medicine. For more information, please visit www.amma.org.mx or contact Luis A. Amezcua G., M.D., Chairman.

October 27-29, 2008; SAFE Association 2008 Annual Symposium; Reno, NV. For more information, please phone 541-895-3012, e-mail safe@peak.org, or visit safeassociation.com or safeassociation.org.

November 20-22, 2008; 2nd International Conference on Air Travel and Health; Dead Sea, Israel. Info: www.palexconventional.co.il/ath2008; ath2008@palex.co.il.

November 26-27, 2008; 21st Century Medicine: Breakthroughs and Challenges; Royal Institute of British Architects, London, UK. For more information or to register, please see the Institute of Nanotechnology's conference flyer: www.nano.org.uk/nanomednet/images/stories/flyers/ion_conference_flyer.pdf.

January 11-15, 2009. D. Eugene Strandness Jr. Symposium: Diagnostic and Therapeutic Approaches to Vascular Disease; Wailea, Maui, HI. Info: www.strandness-symposium.com; strandness@administrare.com; 978-744-5005

This Month in Aerospace Medicine History-- September 2008

By Walter Dalitsch III, M.D., M.P.H.

One Hundred Years Ago

First aircraft fatality: On September 17, 1908, Lt. Thomas E. Selfridge of the U.S. Army Signal Corps became the first heavier-than-air aviation fatality. He was evaluating a Wright Brothers aircraft at Fort Myer, Virginia, flying with Orville Wright. While at approximately seventy-five feet of altitude, the propeller struck a bracing wire and was severed. Control was lost and the aircraft crashed, killing Selfridge and seriously injuring Wright (4).

Seventy-five Years Ago

Symbolic neurology in aviation medicine: "In determining one's physical fitness for flying the medical examiner must be possessed of reasonable diagnostic ability in several of the highly specialized fields of medicine. In the development of aviation medicine symbolic neurology has occupied a conspicuous place in the educational program. Organic neurology seems to have been less emphasized.

"Symbolic neurology deserves unusual prominence in the field of aviation medicine, because the prospective pilot will become subjected to the stresses of adjusting himself to a new environment. Psychologically speaking, individuals have not yet developed an ancestral habit which endows one with a predisposition, at least, quickly to adjust his numerous mechanisms in the development of the instinctive side of flying. The tendency, in the beginning of a flying career, is towards the mechanical operation of aircraft. Experiences, especially now in times of great human unrest, clearly indicate that the presumptively stable human organism is inclined to develop evidence of neuropathic tendencies when subjected to the unusual stresses of the day. Reactions of emotional instability are prone to manifest themselves among airplane pilots when there is added to the everyday stresses, the exacting trials of instrument flying. Aviation examiners, because of constant inquiry into the problems of personality traits, have developed a superior knowledge and understanding of the early signs of emotional instability…

"Neurologists have, unfortunately, been regarded as specialists whose effort is usually aimed at the treatment of hopeless, degenerative lesions of the central nervous system. Because of limited clinical material, neurologists frequently combine the work of neurology with psychiatry. While a knowledge of psychiatry is indispensable to a proper understanding of neurology, it has been an experience that the neurological patient is reluctant to consult one who has the reputation of dealing with the problems of abnormal psychology, because of the justifiable fear that others will regard him as being mentally ill…

"Last, but perhaps not least, is a growing realization that the neurologist is after all not working within entirely narrow limitations, but he is delving into many of the intricate ramifications of all fields of diagnosis. The problems of neurology are so intricate that perhaps no human mind can possibly grasp it all within the span of a human life. The aviation examiner with neurological ability offers his mite, however, in the realm of diagnosis. He is rewarded by results, particularly in the field of neuro-surgery, that are comparable to the spectacular results in the general field of surgery. The dramatically successful effort following operation for tic douloureux and tic of the ninth nerve, arterial sympathectomies for relief of Berger's disease, anglo-spasms, erythromelalgia, the relief of meningeal pain by excision of the inferior cervical and first thoracic ganglia through the mediastinal route, along with the superior cervical ganglion, afford results that compare favorably with surgical effort in other fields.

"The aviation examiner deals with those who are required to be in an excellent state of health. One must realize that all humans enter the world, potentially, with brain injuries, and that they may thus become stigmatized with lesions incident to birth. Individuals may be so slightly ill as scarcely to remember their initial symptoms, yet may, as the result, be subjected to the terrible end-effects of encephalitis with its classical and hopeless Parkinsonian syndrome. One must conclude that in the realm of the activities of the aviation medical examiner there is a grave necessity for constant neurological alertness in order that diseases of the brain and spinal cord may be recognized at a period when satisfactory therapeutic results may be obtained or disaster avoided. It is not difficult to visualize end-results in the field of flying should insidious symptoms of organic disease of the central nervous system go unrecognized" (3).

Fifty Years Ago

The challenge of determining physical standards: "Did physical standards in military forces begin as a biological selection with 'survival of the fittest?' Early commanders probably tried to choose warriors closely resembling in physique the survivors of battle. The successful outcome of warfare has been influenced to some degree by the physical and mental capabilities of the fighting man. Powell describes the attributes of David which allowed him unerringly to direct his missile (stone) from mount (slingshot) to target (Goliath's brow): 'He was a healthy young country boy with excellent muscular co-ordination and a steady hand. His visual acuity must have been 20/20 and his height and weight ideal. His mental state appears to have been the best. He was alert and sensitive and had no fear of combat.'

"Early in World War I there were no formal physical standards for aviators. The man with 'nerve' was allowed to fly and those no longer fit for ground duty were assigned to the Air Service. The resulting waste of personnel and money was reduced by the development of selection. Authors in the Air Service Medical Manual, however, disdained as 'utterly absurd' the concept that a combat pilot must be a 'superman.' Picking the 'birdman' seemed to have so many contradictory requirements that Patten described the ideal fighting pilot as a 'tall, short, slim, blonde, brunette, quiet, nervous, languid, alert, reckless and conservative individual.' Much of this same contradiction exists today.

"Aviation has grown rapidly beyond the time when all the pilot needed was 'nerve.' The modern, highly complex and expensive aircraft is combined with a missile, or payload, and a pilot, or crew, into a 'man-machine system.' This system is assigned a particular mission, and thus the man becomes a most important link in the operation of the entire complex. To insure the success of a mission, the best possible man must be chosen to function in this select complex. The development of proper selection and aircrew maintenance programs to achieve this end is the goal of the specialist in aviation medicine. It must be remembered that selection is never 100 per cent effective in providing a premium man. Each selection criterion met provides only a certain probability of success.

"The aircrew maintenance program requires the development of a new attitude by the physician. He must reject the traditional attitude of deciding everything against a background of 'what is good for my patient?' Now, he must assume that this examinee, or patient, may become that vital link in the weapons system complex, and as such must perform effectively. If he cannot, he must be rejected during the selection process or grounded during the maintenance process. An effective man-machine system requires that proper physical standards be teamed with the proper human factors design…

"Complex modern weapons systems demand that the flight surgeon develop proper aircrew selection and maintenance programs to insure the greatest probability of successful human function. Physical standards attempt to provide personnel who will fly with increased safety, proficiency and longevity. Standards should offer some assurance of acceptable performance under the stresses of flying. Prior to establishing definite standards a good job analysis is needed to determine proper instruments or tests required. These must then be validated" (2).

Twenty-five Years Ago

Dedication to CME: "Aerospace medicine is the branch of preventive medicine concerned with maintaining the health, enhancing the performance, and improving the safety of crews and passengers as they are exposed to the unique stresses and environments of atmospheric and space flight. The aerospace medicine practitioner is also responsible for the medical support of ground crews and other operational personnel at airport, launch, and similar facilities, because of their important contributions to and effects on flight operations. The Aerospace Medical Association is an organization dedicated to advancing the science and practice of this field of medicine. A major method the Association uses to achieve this aim is developing and providing a dynamic continuing medical education (CME) program" (1).

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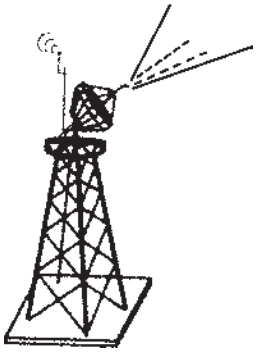

Science & Technology Watch

Keeping You Informed Of The Latest Advances In Science And Technology

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The physiological response to environmental stresses often adversely affects the way people perform, both physically and cognitively. Bill Fraser briefly reviews a new approach to understanding these responses at a cellular level and provides links for tools to help model these processes.

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Stress, Cell Signals, and Modeling

W. D. Fraser, DRDC Toronto

A major focus of this and other journals has been the documentation of the impact of various environmental stressors on physical and cognitive capabilities. Stressors include hypoxia, thermal, acceleration, radiation, exercise, and hyperbaric exposure, as well as emotional or psychological stresses as a result of sensory inputs or generated internally within the brain.

There is increasing interest in understanding how these stressors affect cellular processes, causing degradation of physical or cognitive capabilities and how biochemical processes act to prevent or minimize the impact of the stress (5,6,8). Typically these stressors impact cellular processes at the receptor level, where changes in mechanical loading, oxygen levels, inert gas concentrations, etc., are detected (7,10,11). Some receptors are embedded in the cellular membranes, others are found in subcellular components such as the endoplasmic reticulum. An almost universal response to receptor activation, usually associated with a conformational change in the mol-ecular structure, is the triggering of a complex cascade of biochemical reactions, including changes in genetic expression and the subsequent changes in cellular protein production (1,3).

In central nervous system (CNS) neurons, where communication is regulated by a broad range of neurotransmitters and their corresponding membrane based receptors, emotional stimuli will also trigger these complex biochemical changes.

These responses within the cell can result in significant adaptation to the stress and improved performance, such as in the case of exercise induced increases in muscle mass and strength (9) or increased tolerance to high altitude exposures (8). In the CNS, these internal cellular networks are necessary to induce changes in synaptic structure and function and thus the ability of the brain to form and recall memories (4). However, modification of the biochemical networks by stresses, such as hypoxia, can degrade neural communication and cognitive capabilities. Whether there is a positive or negative impact on cognitive performance due to emotional stimuli and arousal is also a function of how these inputs affect the internal cell signaling. In the worst case scenarios, external stressors, such as moderate mechanical stress loading (2) and emotional stress (5), can result in cell damage and death due to the triggering of specific reactions within the cell, even without gross physical damage.

There is extensive experimental investigation of these complex cellular signaling pathways, driven in part by advances in gene analysis technologies that allow the tracking of changes in genetic expression as a result of changes in the external cellular environment. However, given the complexity of these biochemical networks, which can involve dozens of interacting proteins and genes, there is an increasing emphasis on developing mathematical models of these complex reaction pathways in order to better understand the interaction between receptors, cellular proteins, DNA, RNA, and ionic species such as Ca2+ (1,11). To support this work, specialized computer-based mark-up languages have been used to describe these cellular systems. Two custom languages, both developed using the Extensible Markup Language (XML, http://www.w3.org/XML/), have emerged for describing models of cellular processing: Systems Biology Markup Language (SBML) (http://sbml.org, http://en.wikipedia.org/wiki/SBML) and CellML (http://www.cellml.org). There is also ongoing development of several open-source and commercial software packages that provide graphical user interfaces to assist in the development of the complex models and in generating XML documents. These also provide interfaces to numerical solvers that process the system of differential and algebraic equations used in SBML and CellML. There are major advantages in using markup languages to describe the governing equations of these models, including the ease of exchanging and publishing models among different development tools and solvers that utilize different numerical approaches in solving the equations. As an example, the use of stochastic, as opposed to deterministic, solvers may be critical when one is dealing with very small numbers of molecules, e.g., four or five receptor molecules in a synaptic membrane, a few calcium ions in a dendritic spine of a neuron, or a single gene in the nucleus.

A number of tools are available to assist modelers. CellDesigner (http://www.systems-biology.org/cd/) for SBML and PCevn (http://www.cellml.org/tools/pcenv/) for CellML are two of the many of the open-source software packages specialized for cell network modeling that provide sophisticated development and simulation capabilities. A guide to most of the open-source and commercial packages can be found at http://sbml.org/SBML_Software_Guide and http://www.cellml.org/tools/index_html#cce. Another approach is to use plug-ins into more general purpose modeling software tools, which have the advantage that models of cellular processes can be combined with other physiological models or models that incorporate mechanical or thermal stress. MathSBML (http://www.sbml.org/Software/MathSBML) is a Mathematica (www.wolfram. com/) library which can input models represented in SBML format and utilize the solver capabilities of Mathematica software to process mixed differential and algebraic equations, as well as perform parameter sensitivity analysis and frequency response studies. There is a MATLAB package with similar capability (www.math-works.com/products/simbiology/). The Modelica modeling language (www.model-ica.org) provides another approach as it is a high-level markup language with more capability than SBML or CellML and the recent release of the BioChem library for Modelica provides a capability similar to CellDesigner (http://www.mathcore.com/products/mathmodelica/libraries/biochem.php). Most of the modeling work on cell signaling focuses on the use of ordinary differential and algebraic equations to describe the chemical reactions and transport within the cell. However, both the temporal and spatial dynamics of various species, such as Ca2+, can be critical in cell function. Modelica or Mathematica environments support a mix of algebraic, ordinary differential, and partial differential equations, and the VirtualCell on-line modeling environment can handle species diffusion and the spatial distribution of reactants (www.nrcam.uchc. edu).

With the advances in genetic analysis and the development of more sophisticated computer simulations of cellular processes to understand the impact of external stress on cellular function, there will be an increasing emphasis on the role of cellular biochemistry in determining organ and total system response to environmental stress.

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The AsMA Science and Technology Committee provides the Watch as a forum to introduce and discuss a variety of topics involving all aspects of civil and military aerospace medicine. Please send your submissions and comments via email to: barry.shender@navy.mil. Watch columns are available at www.asma.org in the two AsMA News links under Journal.

Send information for publication on this page to: **Lt. Col. Andrew Woodrow, USAF, BSC**
Chief, Aerospace Physiology Formal Programs, Brooks City Base, TX 78235
210-536-6441
Andrew.Woodrow@brooks.af.mil

Aerospace Physiology Society Operational Excellence, Training, Research, And Leadership Award Winners

by Maj. David A. Welge, USAF, BSC, CAsP, Awards Committee Chair

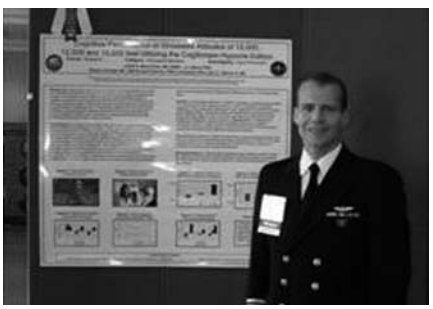
The Aerospace Physiology Society (AsPS) is proud to announce the winners of the Society's three annual awards for excellence in operational aerospace physiology, aerospace physiology research, and aerospace physiology leadership. The award winners were announced during the 79th Annual Aerospace Medical Association Annual Scientific Meeting in Boston, MA, during the AsPS luncheon on Wednesday, May 14, 2008. The Society would also like to acknowledge each of our award sponsors. Because of their generosity, each winner is presented with a plaque and an honorarium. Additionally, the winner of the Fred A. Hitchcock award is presented with a hardbound copy of "Barometric Pressure" by Paul Bert.

Post Award
Heath Clifford

The Wiley Post Award recognizes outstanding contributions in direct operational physiology and aeromedical training and education over the previous 12 months. In 1972, the Wiley Post Award replaced the Paul Bert Award for Operational Physiology. It is named in honor of the aviation pioneer Wiley Post. The Wiley Post Award is presented for exceptional service and achievement in operational physiology, including education and physiological support of Dept. of Defense, FAA, NASA, or civilian aircrew. The Gentex Corp. sponsors the Wiley Post Award. The winner for 2008 is **LT Heath M. Clifford, MSC, USN.** LT Clifford ensured the modification of passenger flotation devices to fit fully-loaded combat marines and soldiers during transport aboard assault/ support assets. He demonstrated a joint mindset by his impeccable management and coordination of all survival radio training and exercise coordination with joint search and rescue centers located throughout the globe, encompassing the management of over 1400 radios. Through his dogged approach to new tactics/techniques/ procedures, LT Clifford ensured the rapid approval and fielding of the green-beam dazzler, a non-lethal form of escalation of force, to be employed on attack helicopters.

Bert Award
G. Merrill Rice

The Paul Bert Award recognizes outstanding research contributions in aerospace physiology over the previous five years. This award was established in 1969 and is named in honor of the famous French physiologist, Paul Bert, the "Father of Pressure Physiology." The Paul Bert Award is sponsored by Wyle Labs. The winner for 2008 is **LCDR G. Merrill Rice, USN**. LCDR Rice significantly enhanced aerospace medicine research and training through the development, test, and patent of the Reduced Oxygen Breathing Device and his numerous other research projects in support of Naval Aviation. Additionally, LCDR Rice spent numerous hours as a mentor to junior scientists, guiding them through the challenges of developing fleet-relevant proposals and providing timely and effective recommendations.



BERT AWARD--LT G. Merrill Rice with his poster presentation. Rice received the AsPS Bert Award for 2008.

Hitchcock Award
Donald White

The Fred A. Hitchcock Award recognizes career contributions of senior aerospace physiologists for excellence in either operational aerospace physiology or aerospace physiology research. The award was established in 1972, and is named in honor of Fred A. Hitchcock, Ph.D., co-translator of Paul Bert's classic work, "Barometric Pressure." International ATMO of San Antonio, TX, sponsors the Fred A. Hitchcock Award. The 2008 winner is **Col. Donald J. White, USAF, BSC.** Col. White's contributions over his 24-year Air Force career have been critical to the advancement of Aerospace Physiology and the understanding of human factors. His efforts in hazard identification, risk analysis, and defining human performance elements significantly contributed toward mishap prevention. He was the main driver behind a thorough revision of the Human Factors Taxonomy, now a valuable analytical tool used by DoD mishap investigators. His expertise, lauded as "broad and impressive," was evident by his contributions while serving on the Space Shuttle Columbia accident investigation board.

Congratulations to all of this year's winners. Their hard work and dedication is a testament to the high quality of individuals dedicated to research, education, and training in Aerospace Physiology.

AsPS Member Benefits

The outstanding network potential and the chance to gain knowledge from the field's top minds.

The opportunity to take part in forums for the integration and utilization of experts in many diverse professional fields. Our members have shared their expertise in multinational and multi-service working groups for altitude effects, acceleration, spatial disorientation, passenger and patient transport, and human factors.

The opportunity to recognize scientific acheivement in the field of aerospace physiology. There are three Society awards presented each year.

The chance to contribute to the success and quality of the annual AsMA conference. The Society's Education and Training Day has been one of the most widely attended sessions during the annual conference.

Membership is only $10. For more information, please contact Joe Essex at joseph.essex@navy.mil, or write to:

LCDR Joe Essex, MSC, USN
BLDG 2272 Suite 345
47123 Buse Rd
Patuxent River, MD 20670

AsMA Future Meetings

May 3-7, 2009
Westin Bonaventure Hotel
Los Angeles, CA

May 9-13, 2010
Sheraton Hotel
Phoenix, AZ

May 8-12, 2011
Egan Convention Center
Anchorage, AK

Send information for publication on this page to: **Mark Campbell, M.D.**
420 N. Collegiate Dr., #300
Paris, TX 75460
mcamp@1starnet.com

SMA Meeting Minutes

We had a very successful Space Medicine Association annual meeting in Boston with over 200 present at the luncheon. Our speaker was Sunita Williams, who made a fantastic presentation on her recent spaceflight to the International Space Station (ISS). Especially interesting was her running the Boston Marathon on the ISS treadmill. Suni is a Navy test pilot with over 2770 hours flight time in over 30 different aircraft (mostly helicopters). She became a NASA astronaut in 1998 and is currently the Deputy Chief of the Astronaut Office. As a member of the International Space Station Expedition 14 and 15, she logged 195 days in space, which is a female spaceflight duration record. She performed 4 spacewalks with over 29 hours EVA time (a female EVA record only recently broken by Peggy Whitson). She also was a Navy diver and spent 9 days on the floor of the Atlantic Ocean in project NEEMO.

The Hubertus Strughold Award is presented each year to a member of the Space Medicine Association for dedication and outstanding contributions in advancing the frontiers of Space Medicine, and for sustained contributions to furthering the goals of the Space Medicine Association. The recipient of the 2008 Strughold Award was Dr. Richard Jennings.

Dr. Marc O'Griofa received the Jeff Myers Young Investigator Award. His presentation was entitled "Sleeping Through the Martian Sol" and described the results of circadian shifting based upon Martian timelines in a Northern Canadian Mars Expedition analogue environment.

A special award, the President's Lifetime Achievement in Space Medicine, was presented to Dr. Igor Goncharov from the Institute of Biomedical Problems (IBMP) in Moscow, Russia. Dr. Goncharov received a standing ovation for his remarkable achievements and the tremendous help that he has given to the U.S. participants while in Russia. Igor was also made an honorary member of the Space Medicine Association.

I continue to believe that space exploration, space medicine, and the Space Medicine Association are at an important crossroads with a glorious successful past and an equally exciting future that includes the finishing of the Shuttle program, continued participation in the International Space Station, developing the Constellation program with a return to the Moon (and eventually on to Mars), and commercial spaceflight development. Our organization is likewise oriented in both directions. The panels sponsored by the Space Medicine Association this year reflected this with overflow attendance at both the Space Medicine History panel and the series of panels on future Lunar EVA.

We had a fantastic Space Medicine History panel, sponsored by SMA, that was very well received. We are continuing to improve the archives of our organization. The web site has been valuable as an electronic repository. We are obtaining oral histories from several of our emeritus members and trying to put together an organizational history of the SMA. We are especially interested in finding information and developing biographies on the past recipients of the Strughold Award. If any members can help us with this, please let me know.

We have obtained, with great effort using the Freedom of Information Act, the Department of Justice files concerning the investigation of Dr. Strughold. I and many others have closely examined them and we have all concluded that they confirm that Dr. Strughold was never involved in any war atrocities. This was announced at the Aerospace Medical Association annual business meeting by the Chairman of the AsMA Archives Committee, Dr. Stanley R. Mohler.

We sponsored six panels and endorsed six panels at the meeting this year (a record number of space medicine presentations and sponsored panels). I attended most of these and they were well attended (many were standing room only) and the speakers were excellent.

Panels that were sponsored this year: Decision Support in Space Medicine and Health Care; ISS Research Results; Lunar Surface Operational Challenges; Lunar Surface EVA – Suit Confirmation Testing in the 1g Environment; History of Space Medicine – Formative Years at NASA; and Commercial Spaceflight. Panels that were endorsed this year: Sensorimotor Risks of Lunar Exploration Missions; Keeping the Focus on Humans in Space; ESA Medical Operations; Research in Space Medicine Hardware; Medical Challenges Related to the Spaceflight Environment; and Research in Analogue and Simulated Spaceflight Environments.

We are already beginning to organize the sponsorship of 10 panels (another record) for presentation next year in Los Angeles. Following are the panels that we are organizing along with the panel chairs. If anyone is interested in being a part of one of these panels, please contact the panel chair: Space Radiation (Jeff Jones); Fatigue & Circadian Challenges (Smith Johnston); Advanced Diagnostic Ultrasound Microgravity (Doug Hamilton); History of Space Medicine (Art Arnold); Commercial Space (Vernon McDonald); Psychosocial & Behavioral (Smith Johnston); Space Medicine Grand Rounds (Jan Stepanek); Evidence Base (Doug Hamilton); ISS Research Results (Genie Bopp); and Space Medicine Operational Challenges (Smith Johnston).

We have produced two very important position papers that have been approved by the AsMA Council this year. These can be accessed on the web site and have been published in the journal. The Long Duration Spaceflight paper is oriented towards the AsMA membership to increase their awareness of this rapidly developing project which is being followed with great interest. Another paper concerning the critical need to restore funding for Life Science Research on the International Space Station is directed towards the general public and Congressional funding. We have also reintroduced the Space Medicine Association Reports on the back pages of the journal to highlight the multiple areas of space medicine that our members are involved in. The Executive Committee is now discussing the formation of a Space Medicine Association Award for Journal Publication that will be awarded yearly.

We are continuing to develop the web site;

See SPACE MEDICINE, p. 933.

LUNCHEON SPEAKER--Sunita Williams speaking on "Recent Experience on the International Space Station".

STRUGHOLD AWARD--Dr. Richard Jennings, the receipient of the Hubertus Strughold Award speaking on his experience in space medicine. At the head table from left to right are the Space Medicine Association officers, Dr. Mark Campbell (President), Genie Bopp (President-Elect), Dr. Vernon McDowell (Secretary) and Dr. John Charles (Treasurer). In the foreground is our speaker, astronaut Sunita Williams.

APPRECIATION--Appreciation awards were given to our generous corporate donors, George Melton, who is the CEO-and President-of Wyle and Bob Ellis, the Group President of Wyle Integrated Science and Engineering.

Send information for publication on this page to:
Kim Barber, BSN, RN
ANS President,2008-2009
flygrl141@woh.rr.com

Aerospace Nursing Society News

Colleagues….. Friends,

It is my pleasure to greet you this month as your new president. I am excited to be representing each of you in the ANS and hope together we can make this an even better organization for aerospace nursing.

For all those who were unable to attend the annual scientific meeting held in Boston, I would like to recap the highlights of the meeting and the ANS annual luncheon. The scientific meeting included several interesting sessions on patient transport. I was privileged to be co-chair for a very interesting session on patient flight validation that was also a great aerospace physiology review. For those occupational health and human factors nurses, there were sessions on work injuries, sleep apnea, and disaster preparedness. The poster sessions also had numerous presentations on occupational health and human factors. The meeting was well attended and there was plenty of interest in presentations as the committee reviewed 593 abstracts and accepted 584 of those for presentation at the meeting.

The Welcome Reception Sunday night included first time attendees as well as new and current members. The ANS extends a warm welcome to any new members or first time attendees and hopes your first AsMA meeting was informative and enjoyable. We welcome your support and expertise and encourage you to jump right in and get involved.

The ANS joined the AsMA Associate Fellows for a reception Monday night. We all enjoyed meeting and mingling with old and new friends and sharing the excellent food provided. Thanks to Eileen Hadbavny from ANS and Peggy Matarese of the AFG for the planning and set up of this event.

As most of you are aware, we have our luncheon on the Wednesday afternoon of the scientific meeting. Our speakers, both professional counselors, were Drs. Jaine L. Darwin, Psy.D, and Kenneth I. Reich, Ed.D, co-directors of SOFAR (Strategic Outreach to Families of All Reservists). SOFAR's mission is to provide free, confidential, and professional support and counseling services to the immediate and extended families of reservists (veterans) deployed or returning from overseas. The organization's desire is to help families develop and maintain healthy coping skills before, during, and after deployment through a support system of licensed, professional volunteers that provides both individual and family counseling with additional access to a network of professionals outside SOFAR should they be required. Their presentation was enlightening and touching as it reminded all of us of the sacrifices these families are making for our country. Thank you to Cathy DiBiase for scheduling these excellent speakers.

Our Awards Chair, Charlie Tupper, was not able to be with us this year, but as usual, did an excellent job with awards. In his stead, Cathy DiBiase (yes, she was busy!) presented the awards during our luncheon. The **Edward R. Iversen Allied Health Technician of the Year Award,** the **Hans Krakauer Junior Flight Nurse of the Year Award,** the **Brigadier General E.A. Hoefly Award**, and the **Brigadier General Clarie E. Garraecht Award**, were presented to very distinguished recipients for their work in the aerospace nursing field. We were honored to present the awards to these notable colleagues! It is never too early to be thinking about next year's recipients, so if you know of any deserving recipient, make a mental note to send in the information as soon as possible.

We were privileged to have several distinguished guests attending our luncheon: Brig. Gen. Douglas Rob, Commander of Kessler Medical Center and Maj. Gen. Bruce Greene, Deputy Air Force Surgeon General, Drs. David Millett of CAMI, and Russell Rayman, Executive Director of AsMA. The ANS appreciates your support and thanks you for your attendance.

Our business meeting took place after the luncheon was completed. Cathy DiBiase designed a new ANS advertising flyer that is very eye-catching; I am hopeful the ANS will be able to use this in new member recruitment. Members discussed options for recruitment and retention; although there were many new ideas, we welcome any suggestions/ideas on this matter. Speaking of new members, we did welcome a new member to the ANS, Olsa Hahn. Olsa is a flight nurse from the Sacramento, California, area and brings much expertise to us. Olsa, welcome aboard!

We are currently updating our rosters to accurately reflect current membership in the ANS and the parent organization AsMA. Efforts to email members on the current rosters failed, so please verify your personal information on the AsMA website. We would not want anyone to miss out on the exciting things going on in the ANS or AsMA. Whether you are currently active with the ANS or not, your proficiency and capabilities are valued and will assist others within ANS with professional growth and development. Since the ANS is open to military and civilian flight nurses, occupational health nurses, and preventative medicine nurses as well as civilian and military emergency technicians and paramedics, we have plenty of room for diversity of growth and development. Also, please encourage any international colleagues to join as well since they too can provide invaluable expertise and experience to our ranks.

Finally, the officers who will be leading the ANS in 2009-2010 are: VP/President Elect- **Lt Col Nora Taylor**, **USAFR NC** and Training Manager for Well Point Inc.; Secretary Elect- **Canadian Forces LCdr MRAC Christine Cloutier**; and continuing as Treasurer- **Col Diane Fletcher**, **USAF, NC** and commander at the 375th AES, Scott AFB, IL. Congratulations to the new incoming officers.

Don't forget we now have a new website, www.aerospace nursing.org, thanks to Cathy DiBiase. I am planning to use this for communication as well as the journal to deliver highlights and other information, so please check in periodically.

Again, I am honored to be representing you this year.

SPACE MEDICINE, from p. 932.

please visit it and contribute material for us to upload. The space medicine bulletin board accessed from the web site allows us to place an unlimited volume of material (photos, video, Powerpoint presentations, and documents) to be available to any member. Please consider making electronic material donations to this web site. You can do so by sending it to me on a CD or e-mailing me at mcamp@ 1starnet.com. The website has enormous potential for the future as a center-point of information and allowing us to communicate with our members. We have now posted the pictures from the May meeting so they can be downloaded. We are also developing a new section entitled "Classics of Space Medicine." This will have all of the articles from the *Journal of Aviation Medicine* (the predecessor of ASEM) in .pdf format that pertain to space medicine from 1965 and earlier. They will be grouped into categories (selection standards, radiation, physiology, acceleration research, weightlessness research, etc.) and can be downloaded.

We have recently established an education account, currently $18,000, which will be used to fund a yearly scholarship that we have created (the Jeffrey R. Davis Scholarship) beginning in May 2009 and to fund the yearly Jeff Myers Young Investigators Award. We are appreciative of the corporate and individual donors who have made this possible (Wyle Labs, Jeff Davis, Jeff Myers, Dwight Holland, and Jon Clark). Please consider a donation to this education fund as it greatly encourages our younger future members.

Our financial status is healthy due to the enormous effort by our recent past presidents and the generous donations from our corporate donors. Our treasurer, John Charles, reported over $14,000.00 in our general fund, which is separate from the educational fund of $18,000.00. Our Secretary, Vernon McDowell, reported that we currently have 152 members (and a lot more, if people will catch up with their dues!). This includes 9 student members (an important category as this is our future) and 18 lifetime members. The Lifetime Membership is a new category that is only $250.00 and makes it a lot easier on our Secretary and Treasurer in record keeping. Lifetime certificates were handed out at the meeting along with new active member certificates. If any current members woud like a membership certification, please contact Doug Hamilton.

The newly elected officers were announced: Pat McGinnis as President-Elect, Karen Mathes as Secretary, and the two new Members-at-Large, Sam Strauss and Mark Edwards. The gavel was then passed to in-coming President, Genie Bopp, who has labored tiredlessly over the past 4 years as an officer of SMA and has been instrumental in all of the organization's recent accomplishments.

News of Members

Send information for publication on this page to: **News of Members**
Aerospace Medical Association
320 S. Henry Street
Alexandria, VA 22314-3579
pday@asma.org

Col. Walter R. Cayce, USAF, MC, SFS, has become the Commander of the 36th Medical Group at Andersen AFB, Guam. He is also Chief Flight Surgeon.

Obituary Listing

We have just learned that **Dr. John Stafford Howitt**, of Maidenhead, England, has died. He had been a member of AsMA since 1959, and a Fellow since 1970.

New Members

Abbot, Christopher, Ph.D., Ottawa, ON, Canada
Adams, Therese, Santa Cruz, CA
Bohnsack, Kevin J., M.D., M.P.H., San Antonio, TX
Bost, James W., M.D., M.P.H., Fayetteville, AR
Chen, Naili A., Lt. Col., USAF, MC, San Antonio, TX
Front, Chris M., LCDR, MSC, USNR, Washington, DC
Koshy, Mathew G., Sqn. Ldr., RAAF, MBBS, Kings Lynn, UK
Newberry, Mark W., M.D., Grand Haven, MI
Reeves, Paul J., Bransgore, Christchurch, UK
Salam, Osama A. M. A., M.B., B.Ch., Cairo, Egypt
Templeman, Rupert E., Flt. Lt., RAAF, MBBS Brisbane, Australia
Villard, Douglas R., Capt., USAF, MC, Mount Pleasant, SC
Vogin, Guillaume, M.D., Remereville, France
Werner, Andreas, Lt. Col., GAF, MC, Dresden, Germany

Aerospace Human Factors Association Awards

(for more on AsHFA awards, see Aug. issue, p. 826-7)

The **Henry L. Taylor Founder's Award**, for outstanding contributions in the field of aviation human factors, was awarded to **Stanley Mohler, M.D.** Dr. Mohler is a most widely known and highly respected leader in the aerospace medicine community. His is currently Professor Emeritus, Aerospace Medicine, in the Department of Community Health at the Wright State University School of Medicine where he has been professionally affiliated since 1978. He received his undergraduate degree from the University of Texas, his M.A. from the University of Texas Medical Branch, and his M.D. from the University of Texas Medical Branch. His professional positions have included appointments as Medical Office for the NIH Center for Aging Research; Associate Professor Research in Preventive Medicine and Public Health at the University of Oklahoma, School of Medicine; Director of the FAA's Civil Aeromedical Research Institute; and Chief of the Aeromedical Applications Division at the FAA's Washington, DC, headquarters. His stature in aerospace

AsHFA Awards--Stanley Mohler,(left) received the Taylor Founder's award from James DeVoll (right).

medicine is attested to by innumerable positions held, projects he has contributed to, and awards received both nationally in the U.S. and internationally. He is author/co-author of over 290 publications, ranging from basic science to clinical aeromedical applications, with consistent emphasis on aerospace human factors throughout. He is a Past President of the Aerospace Medical Association, and member of the Aerospace Human Factors Association since 1997.

This year's Taylor Founder's Lecture was presented by the 2007 Henry L. Taylor Founder's Award Recipient, **James C. Miller, Ph.D., CPE,** who spoke on "Recent Developments Based Upon Applied Research Concerning Fatigue Effects."

The **Stanley N. Roscoe Award** is given for the best Doctoral Dissertation written in a research area related to Aerospace Human Factors and was awarded to **Captain Joseph Christopher Jenkins, USAF**, for his dissertation on "The Effect of Configural Displays on Pilot Situation Awareness in Helmet-Mounted Displays." Due to operational committments, Dr. Jenkins was unable to attend. Capt. Jenkins is Chief, Airman Competency Assessment Integration, Force Development Integration Division, Force Development Directorate, Deputy Chief of Staff, Personnel, Headquarters, United States Air Force, Washington, DC. He assumed his current position in July 2006. He is leading efforts to apply the use of Air Force institutional competencies to Airman leadership development, with a focus on the delivery of competency assessments through Air Force Development Teams assessing officers for developmental education and command. During his career, Capt. Jenkins has worked a variety of jobs related to the development and testing of fixed-wing aircraft, both fighter and cargo, with an emphasis on the design of primary flight displays for head-up and helmet-mounted display applications. Capt. Jenkins earned his commission in 1999 through the Air Force Reserve Officer Training Corps program at Clemson University. He's a career acquisitions officer who has worked AF research lab, flight test, and headquarters assignments during the past 8 years.

AsHFA Lecture--James C. Miller, Ph.D. (left), gave the Taylor Founder's Lecture. He received his award from James DeVoll (right).

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