# Abstracts NOT Presented at the 76th Annual AsMA Scientific Meeting

The following abstracts were not presented at the AsMA's 76th Annual Scientific Meeting. The fact that they were printed in the March issue of *Aviation, Space, and Environmental Medicine* does not mean that they were presented, only that they were accepted for presentation. To the best of our knowledge, all other abstracts were presented and defended.

**[25]** EFFECT OF ADAPTATION TRAINING ON BRAIN TISSUE 5-HT CONTENT FOLLOWING CORIOLIS ACCELERATION STIMULATION IN GUINEA PIGS
X. Su Jiang[1] and Y. Wei Yan[2]
[1]*Institution of Aviation Medicine, Air Force, Beijing, China;* [2]*Department of Otorhinolaryngology, PLA General Hospital, Beijing, Beijing, China*

**[30]** THE RELATION OF POSTURAL VASOVAGAL SYNCOPE TO SPLANCHNIC HYPERVOLEMIA
L. D. Montgomery and J. M. Stewart
*New York Medical College, Hawthorne, NY*

**[40]** NAIL POLISH REDUCES ACCURACY AND PRECISION OF PULSE OXIMETRY TO DETERMINE OXYGEN SATURATION
J. Hinkelbein, H. Genzwuerker, and F. Fiedler
*Universitätsklinikum Mannheim, Mannheim, Germany*

**[50]** THE IMPACT OF BRIGHT LIGHT ON SLEEP INERTIA: APPLICATION TO CIVIL AVIATION OPERATIONS
V. Normier[1], P. Cabon1, S. Bourgeois-Bougrine[1], R. Mollard[1] and J. Speyer[2]
[1]*Unité d'ergonomie-Université Paris 5, Paris, France;* [2]*Airbus, Blagnac, France*

**[51]** EVALUATION OF PSYCHOPHYSIOLOGICAL MEASURES FOR WORKLOAD EVALUATION OF A COMPLEX AVIATION TASK
G. F. Wilson and J. Estepp
*U.S. Air Force Research Laboratory, Wright-Patterson AFB, OH*

**[52]** NASA TASK LOAD INDEX (NASA-TLX) AND MISMATCH NEGATIVITY COMPONENT OF EVOKED POTENTIALS AS INDICES OF MENTAL WORKLOAD
K. K. Tripathi[1], C. R. Mukundan[2] and T. L. Mathew[3]
[1]*Institute of Aerospace Medicine, IAF, Bangalore, Karnataka, India;* [2]*National Institute of Mental Health & Neuro Sciences, Bangalore, Karnataka, India;* [3]*Institute of Nuclear Medicine & Allied Sciences, Delhi, India*

**[96]** PERSONALITY TRAITS AND PSYCHOLOGICAL TEST-TAKING RESPONSE STYLES IN AIRCREW
B. Thomas and C. Joseph
*Institute of Aerospace Medicine, Bangalore, India*

**[123]** LIBELLE SAGE PERFORMANCE WITH PBG
B. Baur[1], P. Stumpen[2], S. Bolia[3] and M. Cessant[2]
[1]*University of Hamburg, Hamburg, Germany;* [2]*Autoflug Libelle, Inc., McLean, VA;* [3]*General Dynamics, Dayton, OH*

**[173]** SITUATIONAL AWARENESS IN AN AIRCRAFT CFIT MISHAP
E. Y. Park
*George Washington University, Washington, DC*

**[195]** NATIONAL INSTITUTE OF AERONAUTICAL AND SPACE MEDICINE, "GENERAL DR. AV. VICTOR ANASTASIU", BUCHAREST, ROMANIA - 85 YEARS ANNIVERSARY
M. Marian and C. Raduica
*National Institute of Aeronautical and Space Medicine, Bucharest, Romania*

**[200]** INTRAOCULAR PRESSURE AND VISUAL ACUITY CHANGES DURING 6 HOURS OF DRY SUPINE FLOATATION
M. Dahiya and K. K. Tripathi
*Institute of Aerospace Medicine, IAF, Bangalore, Karnataka, India*

**[214]** EFFECT OF HYPERBARIC HYPEROXIA ON SYMPATHOVAGAL INTERACTIONS
N. Chaudhary[1] and K. K. Tripathi[2]
[1]*Institute of Aerospace Medicine, India, Bangalore, Karnataka, India;* [2]*Institute of Aerospace Medicine, Bangalore, India*

**[236]** MAKING A CASE FOR EXPEDITIONARY TELEHEALTH; REVIEW OF OIF, OEF DERMATOLOGY CASES: 2001-2004
L. Folio[1], E. Yao[2], C. Cramer[3], C. Ritchie[1] and T. Carter[1]
[1]*Office of the AF Surgeon General, Falls Church, VA, CA;* [2]*Residency in Aerospace Medicine (RAM), Brooks AFB, TX*

**[247]** EXERCISE STRESS ELECTROCARDIOGRAPHY: EVIDENCE BASED ANALYSIS OF USE AS A CIVIL AEROMEDICAL REGULATORY SCREENING TOOL
D. Watson[1], C. G. Preitner[2], P. D. Navathe[2] and M. Drane[1]
[1]*Civil Aviation Authority of New Zealand, Wellington, New Zealand;* [2]*Civil Aviation Authority of New Zealand, Lower Hutt, New Zealand*

**[268]** MASSIVE, ACUTE, UPPER GASTROINTESTNAL TRACT HEMORRHAGE SECONDARY TO REFLUX ESOPHAGITIS IN AN AIRLINE TRANSPORT PILOT
L. Duque
*Avianca Airlines, Bogota, Colombia*

**[270]** CERVICAL SPINE PAIN AND PATHOLOGY IN COLOMBIAN AIR FORCE FIGHTER PILOTS EXPOSED TO G FORCES
M. Zapata-Rodriguez[1] and J. O. Behaine[2]
[1]*Colombian Air Force, Bogota, Colombia;* [2]*National University of Colombia, Houston, TX*

**[278]** TRIALS AND TRIBULATIONS OF EVIDENCE BASED (AERO)MEDICINE
D. Watson, P. D. Navathe, C. G. Preitner, and M. Drane
*Civil Aviation Authority of New Zealand, Wellington, New Zealand*

**[295]** CERTIFICATION OF THE AEROMEDICAL SECTION IN OPHTHALMOLOGY UNDER THE EUROPEAN REQUIREMENTS
C. H. Stern
*German Center of Aerospace, Cologne, Germany*

**[311]** AN INTELLIGENT WEARABLE DEVICE FOR ILLNESS DETECTION, PREVENTION AND REAL TIME HEALTH MONITORING OF THE AVIATOR AT RISK
C. Kourtidou-Papadeli[1], C. Papadelis[2], F. Lazaridou[1], G. Ziogas[1], E. Perantoni[1] and A. L. Louisos[1]
[1]*Greek Aerospace Medical Association and Space Research, Thessaloniki, Greece;* [2]*Aristotle University of Thessaloniki, Thessaloniki, Greece*

**[395]** EFFECT OF THE AVAILABILITY OF FOOT BOARD SUPPORT ON CARDIOVASCULAR RESPONSES TO ORTHOSTASIS
P. Renjhen and K. K. Tripathi
*Institute of Aerospace Medicine, Bangalore, India*

**[396]** COSMIC RADIATION PROTECTION STRATEGY FOR JAXA ASTRONAUTS
Y. Koike, S. Yabe, M. Kyoda, and S. Tachibana
*Japan Aerospace Exploration Agency, Tsukuba, Ibaraki, Japan*

# President's Page

In much of the northern hemisphere, August is the month when many people take holidays and use the opportunity to rest, recuperate, and recharge their batteries to take them through the approaching autumn (all right, fall) and winter months. Here in September we should be refreshed and ready to move forwards.

In the southern hemisphere, people are moving out of winter and looking forward to the sense of renewal which comes with the onset of spring.

What does this mean for AsMA?

It means growth, renewal, and excitement as we plan for the coming year.

The climax of each year is of course our annual scientific congress in May. Your Scientific Program Committee, chaired by Dr. Jeff Myers, is well advanced in the planning, and in July I had the pleasure of visiting the excellent hotel and congress facilities we will be using in Orlando. This has the potential to be a memorable meeting, but it depends upon you submitting your abstracts before the closing date in October. If you haven't got round to it yet, put this journal down, turn on your PC, go the AsMA web site, and submit your abstract NOW.

And while you are on the web site, check your details on the member page, and consider signing up as a mentor.

(Talking of signing up, have you introduced a new member yet?)

Although the face of AsMA in the aerospace medical community tends to be the annual congress, remember that the work of the organisation continues year round. Executive Director Dr. Russell Rayman, supported by our dedicated and loyal team in the Home Office, continues the administrative functions whilst providing timely expert response to the media and the politicians on a wide range of issues. Aerospace Medicine is a living science under constant evolution. Hence the importance of our position papers and statements which ensure we are always up-to-date with the current state of knowledge.

**Michael Bagshaw, M.B., B.Ch.**

Please participate in YOUR association. The strength of the organisation is greater than the sum of the parts, but we need those parts (i.e. the members) to develop the strength.

I look forward to seeing many of you at the Scientific Program Committee meeting in November. Meanwhile, get those abstracts rolling in, encourage your colleagues to join the Association, and attend the meeting.

## "Hap" Hansen, Past President of AsMA, Has Died

Brig. Gen. Richard D. "Hap" Hansen, USAF(Ret)., M.D., M.P.H., died in July at the age of 76. A native of Bedford, IN, Gen. Hansen received a bachelor of science degree, cum laude, from Indiana University in 1951, and a doctorate of medicine degree from the Indiana University School of Medicine in 1954. He received a master of public health degree, cum laude, from the Harvard University School of Public Health in 1958.

Gen. Hansen entered the U.S. Air Force in 1954 and was designated a flight medical examiner in 1955. Following an assignment as Chief of Aerospace Medicine, 20th Tactical Hospital, RAF Wethersfield, UK, he was accepted in the USAF Aerospace Medicine residency program. In 1961, he was named Air Defense Command Flight Surgeon of the Year while stationed at Minot AFB, ND. He next moved to the U.S. Air Force Academy, CO, where he was chief of aerospace and preventive medicine. During this time he was also active in the U.S. space program, and was Medical Flight controller in three Project Mercury missions. He spent 3 years as Medical Advisor to the Surgeon General of the Chinese Air Force, in Taiwan.

When he returned to the U.S. he was assigned to the School of Aerospace Medicine at Brooks AFB, TX, as instructor and chief of the aerospace medicine branch, where he was noted for his efforts to maintain residency training in Aerospace Medicine and to retain the flying training portion of the residency program.

In 1972 Gen. Hansen became 7th Air Force surgeon and commander of the 377th USAF Hospital at Tan Son Nhut AB, Republic of Vietnam. While there he flew more than 70 combat missions. He was the last Air Force Physician to leave Vietnam at the end of the war in March 1973. Again upon his return to the U.S. he was reassigned to the School of Aerospace Medicine as Chief, Education Division. He continued to serve in the Air Force until he retired in 1984, but soon returned to work as Medical Director at the NASA Langley Clinic until 1998.

He held private pilot's ratings for both single engine planes and gliders. He had more than 2,500 flying hours, including 400 in single engine jet aircraft. His military decorations and awards include the Air Force Distinguished Service Medal, Legion of Merit with 3 oak leaf clusters, Meritorious Service Medal, Air Force Commendation Medal, Presidential Unit Citation Emblem, Air Force Outstanding Unit Award Ribbon with "V" device and 4 oak leaf clusters, as well as awards from the Republic of Vietnam including the Air Service Medal and Gallantry Cross. He also received the George E. Schafer Award from the Society of USAF Flight Surgeons.

He was a Fellow of AsMA, a diplomate of the American Board of Preventive Medicine in Aerospace Medicine, and a past president of the Society of USAF Flight Surgeons.

[Managing Editor's Note: Hap was so much more than a list of assignments and medals can possibly relate. As I reread his President's Pages from 1985-6, I was amused by his easy writing style. But he got his points across. And many of his points are still valid today--nominating members for awards, becoming Associate Fellows, getting involved and attending the Council and Business meetings, diversity in our membership and officers. He wrote of eel grass and oyster spats, of history and his love of flying, but he also wrote of pride and peace. We have lost a great friend to Aerospace Medicine.]

## Executive Director's Column

Rayman

## Human Factors and Spaceflight

*We were in a world of our own, we had only ourselves to look to, and the world was as completely cut off from us as though we had come from another planet. I have experienced a good many strange things in my time but this sensation of detachment from the living world was one of the most memorable* (1).

These are not the words of an astronaut or cosmonaut but rather the words of an explorer aboard the ship *Endurance* on its voyage to Antarctica in the early 20th Century. Other similar entries can be found in the diaries of those sailors serving under Sir Ernest Shackelton. Another member of the expedition recorded, "Not the geographical unknown, nor even the ice was Shackelton's real adversary: it was the human factor."

"Shackelton," by Roland Huntford, is an extremely interesting book. It is a biography of Shackleton and an historical perspective of exploration in the cold Antarctic, providing us with glimpses of how human beings react to long periods of isolation, uncertainty, and personal danger.

There are also interesting insights about leadership in such trying circumstances: *"His (Sir Ernest Shackleton) one weapon was a superiority of will, not exactly despotic, but compelling. He held both the formal and the psychological leadership, and on that depended the sanity at least of his companions: The permutations (of personality) of incompatibility were endless."*

As I read "Shackleton" and came across such lines which gave insight into the thoughts and feelings of the crew, I could not help but think of our astronauts and cosmonauts. The voyage of the *Endurance* seemed to be an excellent analogue for space travel: there was complete isolation since there were no radios; the crews were forced to live together for as long as 3 years in close quarters; there was no chance of rescue; and there was no return vehicle. Added to this was the ever present threat of death due to starvation, lack of water, or destruction of the *Endurance* because of the ice floes.

Nevertheless, Shackleton, on several exploratory expeditions to Antarctica, successfully returned home safely without losing a single crewmember, which undoubtedly is a testimony to his leadership skills.

Certainly much can be learned by reading the accounts of early explorers such as Shackleton. Other renowned explorers of the Polar areas include Amundsen, Byrd, Nansen, Peary, and Scott. I believe that there are many lessons to be learned from the written accounts of these explorers that would apply to today's astronauts and cosmonauts.

The great importance of human factors was emphasized to me by a Russian cosmonaut who had several missions in space including one of about 8 months. When I asked him what he thought the limiting factor of long-duration spaceflight would be, he immediately answered, human factors.

In keeping with the importance of human factors in the space program, I strongly recommend that you read your journal supplement issue (June 2005) entitled "New Directions in Space Flight Behavioral Health; a Workshop Integrating Research and Application." This supplement contains a number of excellent articles concerning human factors and, in fact, makes frequent mention of Polar expeditions of which I indicated above.

It would well behoove the space exploration community to take heed and to ensure that proper attention is given to this very important aspect of exploration in space. The explorers of 100 years ago still have much to offer the space program of the 21st Century.

REFERENCE

1. Huntford R. Shackelton. New York: Atheneum; 1986.

## ERRATUM

**In the list of new Fellows printed on p. 700 in the July issue, we mistakenly listed David M. Brown, M.D., instead of David L. Brown, M.D. We apologize to the family of David M. Brown and to David L. "Lex" Brown for this error.**

# Statement of the Aerospace Medical Association for the Hearing Record to the Committee on Commerce, Science, and Transportation, Subcommittee on Aviation, U.S. Senate, Tuesday, July 19, 2005

The Aerospace Medical Association (AsMA) appreciates the opportunity to submit this statement to the U.S. Senate Committee on Commerce, Science, and Transportation on the important issue of the Age-60 Rule for air transport pilots. I am Dr. Russell B. Rayman, Executive Director of the Aerospace Medical Association, representing approximately 3,100 physicians, scientists, and flight nurses engaged in the practice of aerospace medicine or related research.

THE AGE-60 RULE

The Age-60 Rule, implemented by the Federal Aviation Administration (FAA) in 1959, does not allow persons engaged in operations conducted under Part 121 of the Federal Regulations to serve as a pilot or copilot on reaching their 60th birthday. The Rule was implemented under the premise that the risk of incapacitation due to medical causes after 60 years of age was unacceptably high.

Is there evidence that this is true for air transport pilots and is there evidence that aging causes a significant performance decrement in the cockpit? Unfortunately, there is no clear answer to either of these questions; the reason being that there are no studies of air transport pilots who are beyond 60 years of age simply because none have ever been certified by the FAA.

To answer these questions with reasonable certitude, it would be necessary to study a cohort of air transport pilots who are over age 60 and to compare them with a cohort of air transport pilots below age 60. Since this cannot be done today, the only alternative is to study cohorts of general aviation and commercial pilots, both categories having no age limits. And indeed, a number of such studies have been accomplished and published in the literature. However, the conclusions of these studies are vexing in their inconsistencies and contradictions. Hence, they do not provide convincing evidence to support or refute the Age-60 Rule. In any event, the validity of these studies comes into question if we attempt to extrapolate the findings derived from general aviation and commercial pilots to air transport pilots because of significant differences in aircraft and operations - this represents a significant flaw.

We believe that some pilots beyond age 60 could continue to fly without an added risk to flying safety. The challenge is to determine which ones could be safely certified and which ones should be retired. To resolve this dichotomy, studies would have to be designed to determine if and what medical tests might be added to the current FAA flight medical examination as a means of monitoring the health of the older pilot. Additional studies would also be needed to determine how older pilots might be tested for significant performance decrement in the cockpit. Such a study would be daunting in terms of scientific design and costs and most likely would take years to accomplish.

In the meanwhile, we would suggest that selected pilots be certified to an arbitrary age beyond age 60 and closely monitored. Although medical sudden incapacitation is always a possibility (at any age), we believe it is a vanishingly small risk. Even if there were such an occurrence, there is always a second pilot in the cockpit. It might also be added that there has never been a U.S. air carrier accident due to medical causes. And finally, there are about 30 countries that permit air transport pilots to continue flying beyond age 60. And to our knowledge, there has been no adverse effect upon flying safety.

CONCLUSION

On review of the existing evidence, the Aerospace Medical Association concludes there is insufficient medical evidence to support restriction of pilot certification based on age alone. Although studies could be designed to determine which pilots could be certified to safely fly beyond age 60, they would be difficult to design and would be costly. In the meanwhile, we would recommend that selected pilots be certified to fly beyond age 60 and closely monitored.



AsMA RESOLUTIONS/POSITION PAPERS/LETTERS/PROJECTS STATUS REPORT

| SUBJECT | STATUS |
|---|---|
| 1 Policy on Interval for Flight Physical Examinations | In Progress |
| 2. Policy on Countermeasures and Medical Care Moon/Mars Mission | In Progress |
| 3. Policy on Medical Standards for Flight Attendants | In Progress |
| 4. Policy on Emerging Infections | In Progress |
| 5. Policy on Fatigue Countermeasures | In Progress |
| 6. Policy on UAV Medical Standards | In Progress |
| 7. Policy on Optimal Cabin Pressure | In Progress |
| 8. White Paper on Aerospace Medicine | Completed. Submitted to ASEM for publication in October 2005 |
| 9. Policy on Airport Disaster Preparedness | In Progress |
| 10. Policy on Go-No Go Pills | In Progress |
| 11. Policy on Biohazard Decontamination | In Progress |
| 12. Resolution on CFIT | Approved at May 05 Business Meeting. To be forwarded to appropriate agencies. |
| 13. Response to DOT NPRM on Non-discrimiation on the Basis of Disability in Air Travel | Submitted Jan. 05 |
| 14. Grassroots Letters to U.S. Congress Supporting NASA Life Sciences and Medical Research | Completed |
| 15. Testimony to U.S. Senate Subcommittee on Aviation | Completed July 19, 2005. |

# This Month in Aerospace Medicine History-- September 2005

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

**Seventy-Five Years Ago**

On September 8, 1930, near Hamburg, Germany, a sounding balloon attained an altitude of 117,750 feet (nearly 22½ miles) (7).

**Fifty Years Ago**

*Encapsulation in the future of ejection seats:* "We believe at present that the ejection seat will be just about at its upward limit of use at speeds corresponding to little more than sonic flight at sea level, because angular and translational accelerations encountered will approach human limitations and because of the problems of retaining protective equipment and body extremities in the airblast. Some alleviation can be expected by increasing the weight of the seats and incorporating special stabilization and retaining devices. However, when this point is reached, it is our belief that we might as well go on to the complete capsule, because it will probably cost little - if any - more in weight, space, and complexity. Moreover, the capsule has many advantages over ejection seats: better protection of the occupant from environmental conditions, opportunity for considerable integration of personal equipment, and protection of the user after he has reached the surface….

"Whichever capsule configuration is chosen, it will unquestionably be capable of retaining pressure, withstanding landing impact, and floating for long periods after water landing. The recovery system can be expected to be completely automatic in operation, probably consisting of a drogue stabilizer chute deployed immediately after ejection and subsequently released by some sort of altitude-and force-sensing device. At release, the drogue will deploy a single or multistage recovery parachute that will lower the capsule all the way to the ground or water. The intention will be that the occupant stay in the capsule through the entire descent and, if desired, until rescue is accomplished. However, I strongly suspect that all capsules will have to provide for manual bail out at any time desired, at least until a great deal of experience has been gained to prove their reliability, and this requirement will diminish full realization of the capsule potentialities. In any event, I am convinced that airplanes capable of supersonic flight at low altitude should and will be equipped with capsules, and I expect the result will then continue the trend already apparent from ejection seat statistics - an increase in percentage of successful escapes from combat airplanes" (3).

*Risk of decompression sickness in various environments:* "Of all the debilities produced by abnormal environment those pertaining to rapid decompression from high pressure atmospheres or from the normal atmosphere to substratospheric altitudes, are the most dramatic. The diver and caisson worker and recently the aviator and wind tunnel worker are all subjected to a potentially grave acute and possibly chronic injury when the ambient barometric pressure is rapidly reduced. The calculated risk is reflected by the fact that in simulated altitudes ascents without pre-oxygenation more than 50 percent of individuals of military age may develop symptoms of decompression sickness, in deep sea diving up to 5 percent, and in caisson work about 2 percent of decompressions give rise to symptoms indicative of the presence of intravascular and extravascular nascent gas bubbles" (2).

**Twenty-five Years Ago**

*Minimizing mishaps due to pilot "failure" (Directorate of Preventive Medicine, National Defence Headquarters, Ottawa, Canada:* "The author presents a personal perspective on attempts to reduce aircraft accidents resulting from human failure in the cockpit. The premise is that accidents result from an imbalance between performance ability and performance demand. Advances in decreasing pilot-induced accidents must come from methods that will prevent the stresses that diminish performance ability. It is suggested that the investigation of life change as a contributing factor in aircraft accidents will be fruitful because of the tremendous amount of research that has already been done in this field. A review of previous work leads to three recommendations: the Recent Life Change Questionnaire (RLCQ) should be developed as a tool for management and individual aircrew; a character assurance program should be adopted; and a technique to remove accident-prone individuals should be developed" (4).

*Identifying mass casualty victims (Armed Forces Institute of Pathology, Washington, DC):* "The process of identifying the victims of a mass disaster can be simplified if approached in a logical manner. The organizational concept used by the Armed Forces Institute of Pathology divides the process into four phases - preliminary evaluation, data collection, data analysis, and conclusion. Much flexibility is retained within each of these phases to enable general application, but major emphasis centers upon quality control. This control consists of multiple checks during the phases of data collection and analysis and confirmation of each identification by all available methods. An intensive effort must be made to obtain complete antemortem records and descriptions as soon as possible, for no identification will be possible without this comparison data. The values of a logical organizational flow are increased efficiency and accuracy of identification" (6).

*The cutting edge of forensic and toxicology instruments (Armed Forces Institute of Pathology, Washington, DC):* "An ever-growing number of analytical instruments are appearing in forensic and toxicology laboratories. The demand for increased instrumentation has resulted from the rigid qualitative and quantitative requirements placed on the modern toxicologist, as well as from the need for control of the proliferation of toxic substances. This demand is definitely apparent in the toxicological investigation of aircraft accidents, with which the authors are currently concerned. The advent of microprocessor-controlled instrumentation plus an improvement in instrument reliability and efficiency has turned the traditional toxicology laboratory into a highly complex, electronic testing facility. The advantages of analytical instrumentation and the inherent dangers and precautions confronting the forensic scientist and the toxicologist will be presented." (5)

*Unfortunate outcome of an ejection over water (Royal Air Force Institute of Pathology, RAF Halton, United Kingdom):* "A strike aircraft hit cables and both crew were obliged to eject at low level over the sea. Both canopies deployed fully. The navigator got into his dinghy and was rescued by a helicopter soon afterwards, but the pilot failed to inflate his life-jacket and was dead when the helicopter reached him… The question remains as to why the pilot failed to inflate his life preserver. The navigator also failed to inflate his life preserver before water entry and he vividly described his state of panic, grasping for his Koch connectors in the wrong place and failing to find them, and worrying about drifting into his floating parachute canopy. However, he did inflate his life preserver, and he then became calm and able to think rationally. It is well known that aircrew who have to eject in an emergency may behave illogically for some time after parachute deployment and forget that there are procedures which have to be carried out to achieve their own survival. With the pilot, we believe this period of disorientation was aggravated and prolonged by 'winding,' rather than by cervical cord injury. During this time, he could have inhaled quite large amounts of sea water, increasing the panic due to discomfort and respiratory distress on entering the cold water, thus leading to inability to think logically and ultimately to death" (1).

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1. Balfour AJC, Underwood Ground KEA. An unsuccessful ejection. Aviat Space Environ Med 1980; 51(9):1050-1.
2. Behnke AR. Mil Med 1955 (Sep); 117:257.
3. Frost RH. Aeronaut Eng Rev 1955 (Sep); 14:44-5.
4. Haakonson HN. Investigation of life change as a contributing factor in aircraft accidents: A prospectus. Aviat Space Environ Med 1980; 51(9):981-8.
5. Keppler BR, Manders WW. Analytical instrumentation in toxicology. Aviat Space Environ Med 1980; 51(9):989-92.
6. McMeekin RR. An organizational concept for pathologic identification in mass disasters. Aviat Space Environ Med 1980; 51(9):999-1003.
7. www.hq.nasa.gov.

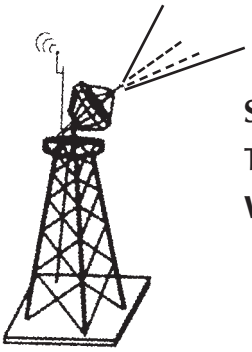

## AsMA Future Meetings for 2006-09

May 14-18, 2006
Caribe Royale Hotel
Orlando, FL

May 13-17, 2007
Sheraton and Marriott Hotels
New Orleans

May 11-15, 2008
Sheraton and Hilton Hotels
Boston, MA

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



## Science & Technology Watch

**Keeping You Informed Of The Latest Advances In Science And Technology**

*This month's edition of the Watch reviews some fascinating research in the area of chronobiology and chronomedicine and its potential to help offset the effects of extended duration missions which cross multiple time zones.*

# What Time Is It?

*Valerie E. Martindale, Lt Col, USAF, BSC*
*Program Manager, Life Sciences and Human Effectiveness, European Office of Aerospace Research and Development*

Researchers and physicians met in June 2005 in Antalya, Turkey, for the First International Congress on Applied Chronobiology and Chronomedicine, hosted by Dr. Hakan Zengil (abstracts to be published in an upcoming issue of Chronobiology International). The importance of circadian rhythms for performance has long been known in the aviation community, but some of the other topics discussed might come as a surprise. A day was devoted to circadian effects on cancer growth, metastasis, and treatment. Multiple presentations investigated the relationship between circadian cycles and blood pressure disturbances. Several presenters showed statistics on the time of day (and season of the year) at which different illnesses or causes of death are most likely to occur. A group of posters followed the rhythmic changes in efficacy of drugs ranging from morphine to lithium, showing how the constant dose paradigm is wrong more often than it is right.

Dr. Michael Sole of the University of Toronto, Canada, used high throughput screening on high-density DNA chips to find that over 12,000 genes in the mouse heart are tightly regulated, being either diurnally or nocturnally expressed, not both. In other words, the heart is a genetically different organ at night than it is during the day. He made the interesting observation that these changes, dramatic as they are, go undetected because research typically takes place during a limited portion of the circadian cycle. No one knows yet the extent to which other tissues are regulated by the circadian cycle.

"The Chronobiology of Appetite and Weight Homeostasis," presented by Satya and Pushpa Kalra of the University of Florida, described the structure of the small area in the anterior hypothalamus, just behind the third ventricle, where both circadian and appetite control reside. The regulating hormones neural peptide Y (NPY) (synthesized in the arcuate nucleus and released from the paraventricular nucleus), leptin (produced and released from adipose tissue), and grehlin (produced and released from the stomach) all act here and all have normal rhythms of production and release. Disturbance of these rhythms is often (but not always) associated with diurnal and/or nocturnal hyperphagia (eating too much).

Dr. Katerina Borer at the University of Michigan presented a study showing that exercise after meals leads to a surge in postprandial blood glucose, while exercise before meals leads to more stable blood glucose, the opposite of what might be expected. This is an example of how a simple behavioral difference may account for some of the variability in controlling blood glucose.

The relationship between sleep and body temperature has long been known--core body temperature dips at night during sleep and peaks during awakening. E.J.W. van Someren of the Netherlands Institute for Brain Research presented an interesting study in which he attempted to manipulate core and peripheral body temperature, within the comfort zone, in order to induce or deepen sleep. Counter-intuitively, they found that warming, not cooling, the skin of trunk and proximal limbs accelerated sleep onset by an average of 3.2 minutes, or 27%, in all subjects, and in elderly subjects it also induced a deeper sleep with more slow-wave activity. Warming core temperature, however, delayed sleep onset, especially in elderly subjects.

Research on jet lag and shift work has yielded support for what many travelers and shift workers already know--different body systems adapt at different rates. Most travelers are well aware that the intestinal cycles can be out of phase with sleep-wake cycles, resulting in hunger at odd and inconvenient times. It's less obvious that endocrine and immune systems also become desynchronized. A number of disease states, particularly depressions, eating disorders, and dementia, involve some degree of desynchrony. Some thought provoking studies also linked cancer and cardiovascular disease to many years of shift work, and to poor "light hygiene" (days too dark and nights too bright to synchronize the brain's circadian clock).

Dr. Linda Morgan from the University of Surrey in the United Kingdom has investigated metabolic responses to meals with particular interest in shift workers. In her "jet lag" study, volunteers simulated travel nine time zones eastward. She found delayed glucose uptake after meals and increased insulin response, suggestive of the markers of Metabolic Syndrome which is becoming so common in the U.S. She also found circulating triacyl glycerol levels significantly increased in the "jet-lagged" group. Field work to test these findings has taken her to Halley Survey Base in the Antarctic and oil platforms in the North Sea. She found the abnormal lipid profile to be persistent even after several days, when the glucose and insulin profiles had normalized. In addition, re-adaptation for workers returning to the morning shift after 1 to 2 weeks on the night shift took longer than initial adaptation. Exposing night shift workers to very bright light during their night shifts improved their blood lipid levels. She also investigated nutritional strategies that mitigate the lipid disturbances.

Chronotoxicology, chronopharmacokinetics, and chronopharmacodynamics all address the fact that the body responds differently to chemical exposures at different times in the circadian cycle. An example is the greater efficacy of low-dose aspirin taken at bedtime rather than awakening in reducing blood pressure and risk of cardiovascular events (Hypertension. 2003; 41:1259-1267). The circadian state of the gastrointestinal tract (intake system), circulatory system (transport), liver and kidneys (disposal system), and target tissues all play a part. As Michael Smolenski of the University of Texas, Houston, emphasized in his presentation, collecting good data on circadian phenomena is fraught with difficulty. Far more remains unknown than known, because of the labor-intensive round-the-clock approach needed to tease out these factors. This applies to the comparatively trivial study of individuals who can stay in a research facility and follow prescribed time regimens.

What about shift workers? And what about aircrew? What are the implications for the 24-hour military?

We can say, based on what we know so far, that these people live in recurrent, if not constant, desynchrony of greater or lesser degree. The various body systems are repeatedly called upon to adapt: to re-set, to re-entrain, and to re-synchronize. Therefore, if aerospace medicine is to make use of chronomedicine, to prescribe with respect to timing whether it be medical treatment, exercise, nutrition, or sleep, medics must be able to answer the question, "What time is it?" What time is it for the brain, for the liver, for the heart, etc? So far this question cannot be answered for several days for a traveler who merely crosses the Atlantic. How can we hope to answer it for an aircrew member on a long-range aircraft, traveling multiple legs, crossing and recrossing time zones, sitting alert, and putting up with all of the sleep disturbances and circadian insults which we know affect our aircrews?

Some hope is offered by the approach of a Japanese group. Tomoyuki Hisa from Tokyo University, Japan, presented progress on a search for clock genes from peripheral tissues. It has been established for some time that a small number of clock genes in the suprachiasmatic nuclei of the brain are capable of generating cycles of roughly 24 hours, which are then entrained by incoming light to the familiar 24-hour cycle. This group used a clock gene known to be expressed in endothelial cells in fish for homologs in human and mouse expression libraries. To date, they have found two of each, human Erih 1 and 2 and mouse Erih 1 and 2, for which they have filed patent applications. The discoverers call them "watch" genes, and hope to show their function as peripheral clock genes which may be synchronized with the brain's circadian center, but may also run independently. If they are successful, it may be possible to measure the level of Erih expression in a tissue by ELISA or similar rapid assay, and answer in a functional and very important sense the question, "What time is it?"

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*The AsMA Science and Technology Committee provides this Science and Technology Watch Column as a forum to introduce and discuss a variety of topics involving all aspects of civil and military aerospace medicine. The Watch can accommodate up to three columns of text, which may include a figure or picture to illustrate your concept.*

*Please send your submissions and comments via e-mail to: barry.shender@navy.mil*

## MEETINGS CALENDAR 2005

**September 15-18, 2005, Gold Coast, Queensland, Australia.** Conjoint Meeting of the Australasian Society of Aerospace Medicine (ASAM), the Asia Pacific Federation of Aerospace Medicine Associations (APFAMA), and the Aviation Medical Society of Australia and New Zealand (AMSANZ). The Annual Scientific Meeting of ASAM, together with the 5th Asia Pacific Congress of Aerospace Medicine (APCASM). Contact: Anne Fleming, ASAM Secretariat, +61 3 98991686; fleminga@ bigpond.net.au; www.asam.org.au.

**September 24-25, 2005, Nashua, NH. 2005** Daniel Webster College Aviation Heritage Festival. Info: 603-577-6622; e-mail: festival@dwc.edu; or visit: www.dwc.edu.

**September 26-30, 2005, Orlando, FL.** Human Factors and Ergonomics Society 49th Annual Meeting. For more information, write to info@hfes.org or visit hfes.org/Meetings/05annualmeeting.html.

**October 5-9, 2005, Charleston, SC.** Civil Aviation Medical Association's 50th Anniversary Annual Scientific Meeting. Info: 405-840-0199; www.civilavmed.com; jimlharris@aol.com.

**October 7-8, 2005, Oregon, OH. 2005** Hyperbaric Medicine Update. Sponsored by ProMedica Health System Continuing Medical Education Department and The Toledo Hospital Department of Hyperbaric Medicine in a Joint Sponsorship with the Undersea & Hyperbaric Medical Society, Midwest Chapter. Info: The Toledo Hospital Department of Hyperbaric Medicine at 419-291-2072; the Continuing Medical Education Department at 419-291-4650; or e-mail Diane.Monaghan@promedica.org.

**15th October 2005. Leicester, UK. 2nd UK** Space Medicine Day, National Space Centre, Leicester, United Kingdom. Info: alysoncalder@doctors.org.uk.

**October 19-22, 2005, Playa del Carmen, Q.R., Mexico.** XXII International Meeting of Aerospace Medicine. Sponsor: Mexican Association of Aviation Medicine,A.C. General Theme: Advances in Clinical Aerospace Medicine. Info: Luis A. Amezcua G.,M.D., Tel./Fax: (52-55) 55-15-68-84; lamezcua@att.net.mx

**October 24-26, 2005, Salt Lake City, UT.** SAFE Association 43rd Annual Symposium. Info: Jeani Benton 541-895-3012; safe@peak.org; www.safeassociation.com.

**October 26-27, 2005, London, UK.** SMi's Inaugural Conference on Combat Casualty Care. Info: http://www.smi-online.co.uk/event_media/overview.asp?is=1&ref=2288.

**October 31 - November 4, 2005, San Francisco.** International Congress of Nanotechnology Info: The Event Coordinator, International Association of Nanotechnology Sacramento, CA 95825 USA; email: info@ianano.org; Web site: www.ianano.org; www.nanotechcongress.com.

## Nominations Sought for 2006 AsMA Awards

The deadline for receiving nominations is December 15 for awards to be presented at the 2006 Annual Scientific Meeting in Orlando, FL.

Nominations should be submitted as far in advance of the deadline as possible.

Nominations can be made by any member of AsMA.

The nominations can now be submitted online from the Members Only area of the AsMA website at: www.asma.org/members/awards/awardnomination.php. They can also be submitted on forms available from the AsMA Home Office and printed in the journal.

**Policies:**

1. The nominee must be a current member of the Association, except that the Sidney D. Leverett, Jr., Environmental Science Awards is open to nonmembers.
2. Employees of a company sponsoring an award are eligible to receive the award. Self nomination is not allowed. Deceased members may be nominated.
3. Nominations for the Tuttle and Environmental Science Awards must cite a specific paper printed in Aviation, Space and Environmental Medicine. The award will be given to the first author only.
4. Nominations received by Dec. 15 will be considered for awards to be presented at the next annual meeting.
5. Unsuccessful nominations will be retained in the active file through three award cycles.

Send information for publication on this page to: **Dwight A. Holland, Ph.D.**
**DwightHoll@aol.com**

# Space Medicine Branch Enjoys Active, Busy Spring and Luncheon

The Space Medicine Branch of AsMA had its 54th Annual Business Meeting and Luncheon at noon on May 12, 2005, in the Westin Crown in Kansas City, MO. The Annual Meeting capped off a busy year for the Branch in several areas. First, as per the intent expressed at the last two Executive Committee Meetings for improved financial performance, the Branch reported a record (over $8,000) in the treasury due to the generous contributions from sponsors and members. Part of the organizational plan adopted by the Branch's Executive Committee just 2 years ago was to begin soliciting donations for the Branch's operations more actively, and to begin to use set-aside monies that would grow over time as an "endowment" for various awards and operations.

In this spirit, Branch Treasurer **Genie Bopp** reported the following sponsors this year for the Space Medicine Branch (SMB), and it is with grateful appreciation that we recognize these sponsors of our Branch for their stewardship and support:
*Platinum ($3,000+)* -- Wyle Laboratories (**Robert Ellis**, V.P.; **George Melton**, CEO)
*Gold ($1,000-2,999)* -- **Jeff Myers, M.D.** (for seed money for the Young Investigator Award set-aside Funds); Kelsey-Seybold Clinic (**James Hoyle, M.D.,** Medical Director)
*Silver ($500-999)* -- Comprehensive Health Services (through efforts by **Dr. Jeff Myers**)
*Bronze ($250-499)* -- **Smith Johnston, M.D.**
*Patron ($50.00-249.00)* - Human Factors Associates, Inc. (**Dwight Holland, Ph.D.**).
Gold and Platinum sponsors were given special recognition at the Annual Luncheon with the Branch's thanks and special plaques of appreciation for their exceptional support.

A special President's Award was given to Dr. Jeff Myers, a former SMB President, for his years of steadfast, selfless, and brilliant service to SMB as an officer, former President, Chair of the hard-working Young Investigator Awards Committee for about 15 years-- and for his generous support of the Branch through many years of financial stewardship. Dr. Myers recently gave $1,000 of personal funds to start an "endowment" for the Young Investigator Award. The Award Winner and Finalists were highlighted in the July issue.

The membership at this luncheon also voted for very minor Constitutional wording changes that were recommended by an attorney to aid in the acceptance of a soon-to-be-filed status as a not-for-profit organization known as a 501(c)(3). This has been approved by the Executive Committee, and will better enable the Branch to handle contributions, investments, and "endowment funds, etc." in a manner that keeps the federal tax authorities comfortable.

The Branch welcomed new officers and a Committee Chair to the Executive Committee, while saying "farewell" to several others. The officers that have served their terms as members-at-large included **Col. Jim Collier, USAF, MC**, and **Clarence Jernigan, M.D**. Dr. Collier had also served the branch in the past as the Secretary-Treasurer, and Dr. Jernigan has been a mentor and friend to many through the years through his work at UTMB's residency program. Member-at-Large (until 2006) **Dr. Chrysoula Kourtidou-Papadeli** has moved on with our deepest thanks for her years of work as the Branch's International Activities Chair, and we welcome the new Chair **Maj. Karen Breek, CF, MC**, of the Canadian Forces now on board in that role. New Members-at-Large just elected for 3-year terms include **Drs. Mark Campbell** and **Mike Chandler**. Mark and Mike have already volunteered for organizational work and supported the Branch, and we welcome them aboard to serve, along with current members **Drs. Joe Ortega** (term ending in 2006), **Jeff Jones** and **Judy Hayes** (terms ending in 2007). Mark Campbell has already been hard at work on rejuvenating our Branch Website. Thanks, Mark!

Due to Constitutional changes last year splitting the Secretary/Treasurer position into two since our organization is growing more complex financially, appointed Treasurer **Genie Bopp** was elected to a 2-year term that officially began this May. Genie has been a dedicated supporter of the Branch this past year, and I cannot say enough good things about how much hard work she has contributed to this organization with her outstanding service and extraordinary attention to detail.

Our Branch Secretary is **Dr. Alan Moore,** who updated and converted the Branch database from the Excel format we had it in to a more modern "Access" format where data can be pulled from different fields more easily, as required. This was part of our efforts to "re-engineer" the Branch's organization and operations into a more cutting-edge manner. We all deeply appreciate Alan for his tedious behind-the-scenes work to accomplish this thankless, but essential task. Members, new and veteran (not "old" ;-} ), please update your membership information with Dr. Alan Moore at alan.d.moore1@jsc.nasa.gov if you have not done so.

In other developments, Branch Historian and former President **Dr. Denise Baisden** reported for the History Committee. The History Committee, and several of our members, plus some interested members of the Branch Executive Committee, spent a considerable amount of time this past year researching questions brought to the Branch's attention surrounding **Dr. Hubertus Strughold**'s World War II activities. The Branch's Executive Committee and the Branch's members are constantly monitoring any new information that may affect the Branch's support for having its highest award named after Dr. Strughold. As a matter of information, Dr. Strughold was completely cleared several times immediately after the conflict of any wartime crimes in his roles as a German Medical Official during WWII, including complete exoneration at Nuremberg. Based upon advice from many sources, and after a special meeting to review any new questions/information during the week in Kansas City, MO, the Branch has elected to continue to support the Strughold name on this Award as our highest award for excellence in Space Medicine. The Executive Committee of the Branch also resolved that it would carefully review any newly discovered,

*See SPACE MEDICINE, p. 911.*

**OFFICERS--**SMB Officers for 2004-05: (L to R): Secretary Alan Moore, President-Elect Dwight Holland, Treasurer Genie Bopp, and President Smith Johnston.

**STRUGHOLD AWARD--**Dr. Bill Augerson receives the Strughold Award from SMB President Dr. Smith Johnston.

**PAST PRESIDENT'S AWARD--**Dr. Smith Johnston receives the Past-President's Award plaque for service to SMB from Incoming SMB President Dr. Dwight Holland.

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# Aerospace Physiology Society Awards for 2005

## The President's Award
### Robert "Joe" Zellers

The President's Award for Outstanding Service to the Aerospace Physiology Society is presented to a member of the Aerospace Physiology Society who advances the mission and well-being of the Society through dedicated service. The Society President hand-selects the award.

President Captain Gail Hathaway, MSC USN, recognized Robert Zellers, known as "Joe" by his colleagues, for his career-long commitment to the Aerospace Physiology Society, and his dedicated work in 2005.

Joe Zellers currently works for Carleton Aerosystems as the Staff Physiologist addressing issues and requirements for a variety of commercial aircraft and military oxygen systems. He earned a B.S. in Zoology at the University of Nebraska-Lincoln and a Masters in Human Physiology from the University of Southern California.

## Wiley Post Award
### LT Ronald L. Schoonover, MSC, USN

The Aerospace Physiology Society presented the 2005 Wiley Post Award to LT Ronald L. Schoonover, MSC, USN for outstanding contributions in direct operational physiology, aeromedical training and education.

LT Schoonover deployed to Iraq for Operation Iraqi Freedom II. He coordinated in-depth technical knowledge of night vision devices and survival equipment with intelligence and operational organizations, and developed strategies and training for joint/coalition forces on SERE, CSAR, and night targeting techniques. He trained coalition forces during on-going combat operations, dramatically increasing combat effectiveness. LT Schoonover developed the only fully functional Night Imaging and Threat Evaluation laboratory in Iraq. He led the distribution, training, and maintenance of survival electronics, and procured laser designators and crew served weapon-aiming lasers. His human factors contributions were instrumental in the success of Marine and Coalition Forces during Operation Iraqi Freedom II. Lt Schoonover was recognized as the U.S. Naval Aerospace Physiologist of the Year in February 2005.

LT Schoonover recently returned from Iraq and currently serves as the Aeromedical Safety Officer (AMSO) for Marine Aircraft Group 16, Third Marine Aircraft Wing, MCAS Miramar, CA. He holds a B.S. in Sports Medicine and a M.Ed. in Exercise Physiology from The Citadel, The Military College of South Carolina. After an enlisted tour in the USN as a Hospital Corpsman at Marine Corps Base Camp Lejeune, NC, he was commissioned into the Medical Service Corps in October of 1999.

**PRESIDENT'S AWARD--**Gail Hathaway, AsPS President, presents Joe Zellers with the award during the annual meeting in Kansas City, MO.

## Paul Bert Award
### Edward Eveland, Ph.D.

The Aerospace Physiology Society presented the 2005 Paul Bert Award to Dr. Edward Eveland for outstanding research contributions in aerospace physiology. The award is named in honor of the French physiologist, Paul Bert, the "Father of Pressure Physiology."

Dr. Eveland was recognized for outstanding career service to the United States Air Force as a prolific research scientist in Aerospace Physiology. Dr. Eveland became a principal investigator at the Aerospace Medical Research Laboratory, now Air Force Research Laboratory (AFRL), at Wright-Patterson Air Force Base in 1982. He developed a helmet dynamics research program at AFRL. His research into muscle physiology and the advancement of electromyography (EMG) under high-G defined a new approach to evaluating the effect of helmet-mounted devices in the sustained acceleration environment. His application of EMG to characterize pilots' neck muscles during high-G exposure, and the development of a mathematical neck-loading model, revolutionized the evaluation of flight helmets.

Dr. Eveland currently serves at the Air Force Research Lab at Wright-Patterson AFB, as the Principal Investigator for the Panoramic Night Vision Goggle high-G research being conducted at the AFRL. Dr. Eveland has been a member of the Aerospace Physiology Society since 1993.

## Fred A. Hitchcock Award
### Col. Susan E. Richardson, BSC, USAF

The Aerospace Physiology Society presented the 2005 Fred A. Hitchcock Award to Col. Susan E. Richardson, BSC, USAF, for career contributions and excellence in operational aerospace physiology and aerospace physiology research.

Col. Richardson performed her duties as an Air Force Officer and Aerospace Physiologist in a sustained and superior manner for over 24 years of service. Col. Richardson served as the Air Force Chief of Aerospace Physiology and led the effort to more broadly integrate Aerospace Physiologists into war-fighter strategies and requirements. She was the Air Force's Functional Manager for the Aerospace Physiology Course, setting training standards for all new Air Force aircrew. Col. Richardson oversaw the construction of a new $1.35 million AP facility at Randolph AFB while training hundreds of navigator students. She was the consultant to the Air Force Surgeon General for Aerospace Physiology and Human Performance.

Col. Richardson entered Air Force active duty in June 1979 on direct AFROTC commission. Her military assignments as an Aerospace Physiologist include Little Rock AFB, Kadena AB Okinawa, Beale AFB, Mather AFB, McClellan AFB, Randolph AFB, Wright-Patterson AFB, Andrews AFB, and Bolling AFB, DC. She was the 1984 Distinguished Graduate of Squadron Officer School, the 1986 Kadena Clinic Junior Officer of the Year, and the 1994 AETC Aerospace Physiologist of the Year. Col Richardson is Board Certified in Aerospace Physiology, and is an AsMA Associate Fellow. She served in numerous of-

*See PHYSIOLOGY AWARDS, p. 911.*

**HITCHCCOCK AWARD--**Tom Workman presents Susan Richardson with the award during the AsPS luncheon and meeting in Kansas City, MO, in May 2005.

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## A Message from the ANS President

The deadline for submitting abstracts for the 2006 Scientific Meeting is rapidly approaching. Let's ensure we get those in on time, and use our mentors to make them strong. It was 40% of our survey respondents that said research based presentations are a cornerstone of our existence.

Have you signed up to become involved in a parent organization committee? Once again that url is: www.asma.org/aboutasma/committees.php. Get involved in one of the committees; they each need a nursing voice.

It's not too early to start thinking about those among us who are deserving of our recognition. The awards, and their criteria, are listed on our website. While we're at it, let's generate some nominees for the Marshall scholarship. I have begun by contacting several universities looking for nominees. I encourage you each to do the same.

Once again, let's get the word out about who we are and what we do. Janet Sanner and I have electronic brochures you can print and take with you to other conferences. You can e-mail these brochures to peers as well. I welcome any other suggestions about how we can get the word out about who we are.

Lastly, I welcome your suggestions for topics to be discussed at the November Aerospace Medical Association council meeting. Please e-mail them to me as soon as possible.
I look forward to seeing you all again in Florida next year!

**Dan Roper, PhD, RN, CEN, CFRN**
**President**
**Aerospace Nursing Society**

### Join the Aerospace Nurses Society!

Dues are just $10 ($5 allied health professionals). For further information, contact:
Diane Fletcher, ANS Treasurer
PSC 2, Box 10849,
APO AE 09012.
Diane.fletcher@ramstein.af.mil.

### Garrecht Award Information

The Brig. Gen. Claire Garrecht Award honors an ANS member for the best scientific paper presented during the Annual Scientific Meeting of the Aerospace Medical Association. This award, sponsored by Educational Enterprises, Inc., consists of a plaque and honorarium.

*Criteria*: Membership in the AsMA and ANS. Abstract must be submitted and accepted for presentation.

*Procedure*: Submit the paper following the prescribed format (contact the committee chair for format); must be submitted to the Awards Committee Chair/ANS, 2326 Blue Shutter Road, Edisto Island, SC 29438-6620 by April 15, 2006.

*SPACE MEDICINE, from p. 909.*
directly relevant information with regard to questions surrounding this award, if indeed such material comes to light.

**Dr. Smith Johnston** Co-Chairs the Awards Committee, and this year he reported that **MG William S. Augerson, USA(Ret)**--a former Army and NASA Flight Surgeon--is the recipient of the 2005 Hubertus Strughold Award. General Augerson's distinguished career was critical to the NASA Space Medical Operations developments since he was there in Houston and was a NASA Flight Surgeon at the dawn of the Manned Speceflight era. Dr. Augerson's biography was quite impressive as Dr. Johnston noted, and after receiving his award, he recounted his days leading up to and during the earliest Manned Spaceflight era with a very interesting talk of his recollections.

Following Dr. Augerson's remarks, Dr. Johnston introduced the speaker for the luncheon, veteran (former) astronaut **CAPT James D. Wetherbee, USN(Ret)**. Jim provided the audience with many interesting remarks about NASA, the culture of safety, and even how to better prevent you and your family from getting into an accident. Many positive remarks were heard about his interesting talk after the luncheon was concluded.

Thanks were then was offered to Dr. Johnston by the incoming President **Dr. Dwight Holland** for his wise stewardship of the Space Medicine Branch President's office this past year, and for his work throughout his many years in the Branch. Dr. Johnston has worked tirelessly to improve the Branch, and he will be missed as our President, but we will see him continue on as new President of the Society of NASA Flight Surgeons, the Branch Awards Co-Chair, Past-President, advisor to the Branch, and friend.

On a personal note, I am honored to be following my good friend Smith Johnston in this role, and I could not have had a better guy ahead of me to support and follow this past year. **CAPT Jon Clark, USN(Ret)** steps into the Branch's President-elect role, and we are all delighted that he will be stepping up to the Presidency in 2006.

Last but not least, we also want to thank our members that offered to support the branch in other ways this past year--**Drs. Peter Lee, John Darwood, Mike Duncan**, and the other numerous volunteers that helped out at the annual luncheon taking tickets, selling T-Shirts, signing up members, and answering questions at our Annual Meeting such as: **Nina Johnston** (our "First Lady" of SMB this past year), **Kathy** and **Neil Houser, Mary Anne Frey, Alan Moore, Casey Pruett, Karen Mathes, Rick Pettys, Vernon McDonald, Jeff Jones,** and **Marilyn Sylvester**. Thanks again for your willingness to step in and help out!

*PHYSIOLOGY AWARDS, from p. 910.*
ficer posts for the Aerospace Physiology Society, including Society President in 1992. She was the President of the Aerospace Physiology Certification Board, and an AsMA Council and Executive committee member. Col Richardson retired from active duty on 01 July of this year.

## Partnership in Education Award
### Lavon Kimminau

The Aerospace Physiology Society presented the 2005 Partnership in Education to Ms. Lavon Kimminau, of Summit Lakes Middle School, Lees Summit, MO. This award is presented to the science educator in the Annual Scientific Meeting host city who advances life science through innovation and excellence.

Ms. Kimminau has dedicated 35 years to teaching life science. She organized Kansas City Regional Science Olympiads for over 10 years, and coached teams in 23 different science events. Her teams advanced to State level competitions 12 times. She developed unique experiments and investigations with invertebrates for student classroom activities. Ms. Kimminau developed innovative partnerships with local laboratories and medical activities to enhance classroom activities.

Ms. Kimminau currently teaches at the Summit Lakes Middle School. She holds a B.S. in Math and Science Education from Webster University, St. Louis, and a Masters in Education from the University of Missouri-Kansas City.

**PARTNERSHIP IN EDUCATION AWARD--** Andrew Woodrow presents Lavon Kimminau with the Award for excellence in science education during the AsPS annual meeting and luncheon in Kansas City, MO.

# IAMFSP Holds Annual Spring Business Meeting and Dinner

The International Association of Military Flight Surgeon Pilots (IAMFSP) held its annual business meeting and dinner on 11 May 2005 in the Pershing North Room of the Westin Hotel in Kansas City, MO, starting at 6:00 p.m. The previous day, IAMFSP held a very well-attended 2-session panel chaired by Col. Pete Mapes, USAF, MC, and Capt. Dwight Holland, USAFR, on issues related to reducing spatial disorientation, loss of situation awareness, and technologies related to these topics.

The evening began with a reception while a multimedia video, provided by the late Dr. Harry Hoffman, from the year that IAMFSP became an AsMA constituent organization was shown. After a call to order, special guest speaker and spatial disorientation expert Bill Ercoline provided an exceptional talk for the evening on the "History of Spatial Disorientation" with pictures and video clips from as far back as World War I. This extremely informative and occasionally humorous talk was not to be missed, and if you ever have a chance to hear Bill Ercoline give this talk in the future, it is well worth the time. Thanks, Bill!

Officer reports were given next by Capt. Dwight Holland (President), CAPT Dave Hiland (President-elect), CDR Kris Belland (Treasurer), and Dr. Mark Adams (Newsletter). Secretary and Webmaster reports were given on behalf of CDR Ed Park by Dwight Holland, as Dr. Park was moving to his residency training site. The officers particularly thanked Dr. Mark Adams for his steadfast Newsletter Editor stewardship, and for CDR Kris Belland's excellent work in setting up, and helping to fund the annual meeting.

International/Organizational Pilot-Physician Reports followed, delivered by representatives present from Britain, Canada, Israel, Slovenia, the U.S. Navy, and U.S. Air Force.

Several awards were given to members during the meeting for outstanding service and accomplishments to the IAMFSP. CAPT Jim Baker, USN(Ret), a Naval Aviator, Medical Doctor, Test Pilot, and recently a Professor at Embry-Riddle Aeronautical University in Arizona, was given a special "President's Award" as a Charter Member of IAMFSP, and as the first and Founding President of IAMFSP (in 1986). Dr. Baker remarked about how he and other U.S. Navy Dual-Designators had been using the "foxhole" approach to getting and keeping assignments, and how they had been meeting rather quietly for years at AsMA Meetings in hotel rooms and bars informally to socialize and network. Dr. Baker has continued his active involvement with IAMFSP through the years in discussions and panels, and has served as a mentor and advisor to many individuals through the years including astronauts Drs. Sonny Carter (deceased), David M. Brown (deceased former IAMFSP President and Columbia crewmember), Jim Bagian, and 2003-05 IAMFSP President Dr. Dwight Holland.

Dr. Baker recounted how he and another 2005 Award Recipient, CAPT Frank Austin, USN(Ret), decided in 1985 to call a formal meeting (at the Nashville AsMA Annual Scientific Meeting) in 1986 to start IAMFSP. Dr. Austin, a Founding Member of IAMFSP, had been the first USN jet test pilot-physician, the leader of the USN Dual-Designators, mentor to Dr. Baker and many others, and in later years had encouraged IAMFSP to seek constituent status within AsMA, which it did a year after Dr. Austin's suggestion occurred. Dr. Austin had also served as the Federal Air Surgeon of the Federal Aviation Administration. He always attended and participated in IAMFSP Business throughout many years until his health in recent years ended his active participation. Dr. Baker accepted the IAMFSP President's Award for "exceptional service and leadership" on behalf of Dr. Austin, and made many positive remarks about his old mentor and friend. When Dr. Holland told Dr. Austin of his winning this special award during a personal phone call in March, he was delighted, saying "Please tell all of the guys hello and thanks for me."

Other IAMFSP Awardees included CDR Ed Park for his outstanding work as the IAMFSP Secretary and Website recovery development efforts after the sudden death of Webmaster Dr. Harry Hoffman. CDR Kris Belland was finally formally given the plaque that he had been awarded several years earlier (but was at sea) for his exceptional work as the Program Chair of IAMFSP, when IAMFSP had a record number of abstracts and scientific panels each year under his superb leadership.

In other related developments, a group photo of all of the Charter Members present (5) was taken. Jim Baker re-counted that first meeting, and the planning that went into developing the meeting, and the first IAMFSP AsMA Panel session a few years later that CDR Sonny Carter, USN, and Brig. Gen. Rufus Dehart, USAF, co-chaired.

On the finance and organizational front, IAMFSP has applied for 501(c)(3) status to improve the ability of the organization to seek tax-deductible contributions from both individuals and corporate organizations. This corresponds with IAMFSP's long-term business plan to have more financial cushion year-to-year, and to slowly grow an "endowment" fund over time to help fund our awards and operations.

The evening was concluded with new officer elections, and the results are as follows:

| | |
|---|---|
| President (2-yr term) | Dave Hiland |
| Vice Pres (2-yr term) | Kris Belland |
| Treasurer | Mike Simmons |
| Membership | Steve Hadley |
| Newsletter | Mark Adams |
| Secretary | Rod Borgie |
| Web Master | Ed Parks |
| Historian | Dwight Holland |

Representative to AsMA Council:
Dave Hiland
Representative to Nominations Committee:
Dwight Holland

Dr. Holland thanked all of the officers, both present and past, for their support during his tenure as the IAMFSP President and the evening ended after the new incoming IAMFSP President Dr. Hiland made a few remarks and concluded the evening.

**Remember!** Council Meetings are open to all members of the AsMA. Your input and attendance are always welcome. Our next meeting will be on November 15, 2005, in Alexandria, VA.

**BELATED PRESIDENT'S AWARD--**CDR Kris Belland (newly elected Vice-President of IAMFSP) receives a President's Award from Dr. Dwight Holland for his exceptional service as the Program Chair of IAMFSP in past years. CDR Belland was on duty and not able to be present to accept his award when he won it a few years ago.


**IAMFSP PANEL 2005--**Dr. Bill Albery, from Wright-Patterson AFB, presents during the IAMFSP Panel with Co-Chairs Col. Pete Mapes and Capt. Dwight Holland looking on.

**PAST PRESIDENT'S PLAQUE--**Incoming President Dave Hiland congratulates outgoing President Dwight Holland with a Past President's Service Award plaque.

**CHARTER MEMBERS--**Special IAMFSP President's Award winner and Founding Charter President Dr. Jim Baker speaks at the podium surrounded by five of his IAMFSP Charter Members present in Kansas City (L to R): Drs. Rodger Vanderbeek, Dave Salisbury, Dwight Holland, Bob Ryan, and Geoff McCarthy.

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## Message from our President, Trish Trifilo

Orlando, Florida, is the site of our next meeting. I had the opportunity to visit the Caribe Royale recently, and I want to tell you all about it. The convention is being held at a site which is all-inclusive. The meetings for the AsMA members are in one building, on one floor, in the convention center, three to five minutes from the hotel room. Our Wing registration and hospitality is in the convention center close to all the AsMA activity. The resort is composed of 4 room towers surrounding a large pool complex. There is an isolated kiddy pool and play area, hot tubs, a water slide, a fitness complex, and lots of swimming space. All the rooms are in a suite design. They have a sitting room with a hide-a-bed, refrigerator, television and bar, a center bath area, and a bedroom area with either a king or two queen beds and a television. There is child care available on request. It is a great arrangement for families, or members wishing to share a room. The resort is 20 minutes south east of the airport off the 417 toll way. There is a shuttle, cab service, or car rental available. The cab is $40 each way, and the shuttle is $20 per person each way and may stop at additional resorts.

Orlando is the central Florida adventure vacationland. There are attractions for people of all ages and interests. It is not just amusement rides, though of course that is a major draw. There is Walt Disney World, accessible by free shuttle from the resort, Universal Studios, Sea World, several water parks, two huge outlet shopping malls, hundreds of eating establishments, and art galleries all within 20 minutes of the resort. Both Disney and Universal have "downtown areas" which feature theatre like Cirque du Soleil, and upscale bars and music venues like House of Blues and Jimmy Buffett's Margaritaville. Wolfgang Puck and Emeril both have world famous restaurants in the area. The Kennedy Space center is an hour away, and Busch Gardens and Cypress Gardens a little farther towards Tampa. I think a car would benefit most groups. **There is no outside food or entertainment within walking distance of the hotel, but all are close.**

For the Wing, the Orlando site will offer an opportunity to meet new spouses who may not attend on a regular basis. We should have more families and many international friends who attend. If you know of associates or classmates who are thinking of attending this year, pass the word and encourage them to come and share in the fun.

Remember, the Wing is about camaraderie and friendship that lasts for years. Contact someone you met in Kansas City and say hi. Encourage your friends in the Aerospace industry to come and participate in the meetings. Get active in the Wing so our organization can be strong and lasting. See you in Orlando!

**UNDERSEA ADVENTURES--**Judy and Nestor Kowalsky investigate sea life.

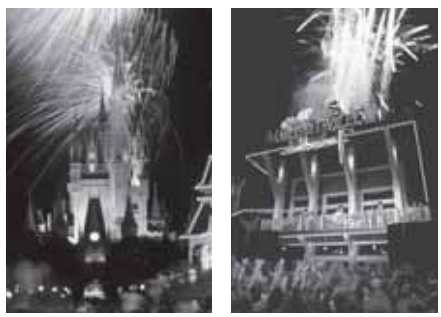
## Adventures of the Deep With Judy Kowalsky

Although both Judy and Nestor grew up on an island, Montreal is not known for its tropical waters and abundance of brightly colored fish, so they quickly headed for more exotic climes in which to practice their love of deep sea diving. Nestor has become quite an avid underwater photographer while Judy surveys fish populations for REEF (Reef Environmental Education and Foundation). Says Judy, "Learning to identify many different species as well as studying fish behavior and habitat has helped me to find lots of subjects for Nestor's ever-ready camera."

Diving trips demand meticulous planning, but things don't always go as expected and Judy finds that being flexible has served them well. Says Judy, "We had an unexpected overnight visit in one country where armed guards at the airport identified for us an unmarked, rickety car as a taxi. After a tense ride we arrived at a peaceful hotel where we experienced warm hospitality and a delicious meal. Another island adventure began with an armed plainclothes drug enforcement officer commandeering our dive boat as we were docking. He then directed our divemaster to keep us on board and to pursue a fleeing drug dealer who was escaping in a high-speed "cigarette boat." It crashed into our boat and the officer fired his weapon over our heads sending shell casings dropping into our laps! Needless to say, we were greatly relieved when the fleeing boat sped away, leaving us unharmed and anxious to reach the safety of the shore."

The Kowalskys's travels have taken them all over the Caribbean where they have savored the beautiful scenery and diverse cultures of the different islands. Some of their more memorable experiences have included Curacao (Netherlands Antilles) where they swam through mountainous star coral formations that, says Judy, "Made us feel as though we were swimming through a forest of gigantic 10 foot tall mushrooms. A lifetime peak experience for us was hearing humpback whales singing as we were diving a wall at 90 feet in the Grand Turk (Turks and Caicos) along with feeding stingrays in the shallows of a deserted island, watching Eagle rays and Manta rays, as well as being closely inspected by two curious dolphins while we were diving. Another exciting dive occurred in Cayman Brac - I had completed my certification dives and then saw my first shark being herded in our direction by an overzealous diver! We then dived thrilling "Bloody Bay Wall" on Little Cayman as we explored the reef, which abruptly drops off from 25 feet to 6000 feet! The face of this wall is covered with gorgeous hard and soft corals, multicolored tube sponges and wavy sea fans. Countless small creatures and fish seek shelter here, while large fish and turtles are often seen swimming nearby. In St. Vincent (The Grenadines) we discovered numerous rare fish in the "Critter Capital of the Caribbean." Spoon-nose eels enchanted us by peeking their heads out of the sand, retreating, and then swimming away, while watching fish mating at dusk was definitely a unique experience."

"Our diving trips have been a journey of discovery for us as we have learned the skills necessary to be proficient in exploring an undersea environment. One of the most enjoyable aspects of these trips has been the opportunity to experience the fellowship of divers from all corners of the world as we recount our adventures in the evenings aboard the dive boat. This opportunity echoes the multinational friendships we have formed in the Wing and AsMA. We have also enjoyed special times diving with our children and grandson, delighting in the opportunity to share our love of the ocean. But my all-time favorite after-dive activity is returning by boat from a night dive in St. Vincent, marveling at the star-studded sky, being with friends, and holding hands with my lifetime dive buddy. I have a deep sense of awe and gratitude for the peace and beauty of our underwater world.



**ORLANDO AT NIGHT--**(left) Magic Kingdom and (right) Margaritaville. Photos courtesy of the Orlando CVB.

# NEWS OF MEMBERS

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**Col. Alan Berg, USAF, MC,** has been reassigned as the 379th Expeditionary Medical Group Commander, Al Udeid AB, Qatar.

**Claus Curdt-Christiansen, M.D., D.Av. Med.,** formerly the Chief of Aviation Medicine, ICAO, Montreal, retired from ICAO in January after 10 years of service, but stayed on as a consultant through the end of July. He has since returned to his previous position as Medical Officer with the Danish Civil Aviation Administration. Dr. Curdt-Christiansen is an AsMA Fellow and received the 2003 Theodore C. Lyster Award.

**Douglas W. Call, Ph.D.,** was recently named Executive Director, Global Learning and Development, for Quintiles, a global pharmaceutical services company that conducts worldwide clinical trials of new pharmaceuticals and biologics. Dr. Call is a Fellow of the Aerospace Medical Association and holds professional certifications in aerospace physiology and project management. He serves as an Adjunct Professor in the School of Pharmacy at Campbell University, Research Triangle Park, NC.

**Andre Hirschler, M.D.,** graduated from Indiana University Medical School in May 2005 and is starting an emergency medicine residency (3 years) at Martin Luther King/Drew Medical Center in Los Angeles, CA.

## In Memoriam

### Robert Auffret

We recently learned that Gen. Robert Auffret, FAF(Ret.), M.D., Ph.D., has died. Dr. Auffret earned his M.D. from the University of Paris in 1955. The following year, he trained in aerospace medicine at the Centre d'Etudes et de Medicin Aeronautique in Paris. From 1956-57, he served as Medical Officer for paratroopers in Algeria. In 1958, he joined the Test Flight Center as a flight surgeon, and then spent a year serving as a fighter pilot at Meknes, Morocco.

From 1960-63, he was Head of the Human Engineering Section of the Test Flight Center. In 1968, he was appointed head of the Center's Acceleration Center. He then went on to become Assistant to the Head of Medical Services in 1971 and Head of Medical Services in 1973. In 1972, he received his Ph.D. in Human Biology from the University of Paris. He retired from the French Air Force in 1988 after 37 years of service to become the Head of the Medical Department at Aeroports de Paris.

Dr. Auffret was an experienced fighter and test pilot with over 4000 pilot-hours in 60 different aircraft, with 1500 of those hours having been during test flights. He was a Fellow of the Aerospace Medical Association, a member of the International Academy of Aviation and Space Medicine, a member of the NATO/AGARD Aerospace Medicine Panel, and a member of the French Civil Aviation Board. He was also a founding member and Past President of the French Aerospace Medicine Society.

Dr. Auffret's awards included the Eric Liljencrantz Award from the Aerospace Medical Association, the French Aerospace Medicine Society Award, the French Aeronautics Medal, the Silver Medal for Scientific Achievement, the Medal of Honor of the French Air Force Medical Corp, Chevalier of the French Legion of Honor, and Officer in the French National Order of Merit.

### William Whitney Miller, Jr.

COL (Ret.) William Whitney Miller, Jr., MD, of Lumberton, NJ, passed away in May at the age of 75. After graduating from the Salisbury School, Salisbury, CT, he served in the U.S. Navy as a Corpsman from 1948-1952. Following his service in the Navy he graduated from Syracuse University in 1956, and subsequently from Albany Medical College in 1960. He worked in private practice as a Family Practitioner in Schenectady, NY until September 1977 during which time he held appointments as Aviation Medical Examiner for the FAA, and Aviation Medical Consultant for the NY State Conservation Department of Medicine. Dr. Miller entered full-time active duty in the U.S. Army in late 1977 and was assigned as Flight Surgeon at Ft. Dix in January 1978. He attained the rank of Colonel, and was appointed as the Walson Army Hospital Commander in January 1992. He retired from the Army in August 1993, and was awarded the Legion of Merit.

An aviation enthusiast his entire life, Dr. Miller was a member of several aviation associations: a member of the Aerospace Medical Association for over 30 years, a Life Member of the Military Officers Assoc. of America, member of the Academy of Model Aeronautics, and a member of the Pine Barrens Radio Control Club. He was also very active with the International Women's Air and Space Museum in Cleveland, OH, and served on their Board of Trustees.

## New Members

Amin, Mansi H., D.O., Beavercreek, OH
Belizi, Peter J., B.A., Bristol, CT
Fedack, Kathleen A., M.D., Evergreen, CO
Francis, Katherin S., R.N., Abu Dhabi, United Arab Emirates
Grubb, Jefferson D., LT, USN, Lusby, MD
Gustavson, Richard B., B.S., Henderson, NV
Harris, Andrew J., M.B., B.S., Sandringham, Australia
Hollonbeck, Sean A., MAJ, MC, USA, Galveston, TX
Murphy, James T., CAPT,MC,USA, Boulder, CO
Skinner, Julie, Capt., USAF, NC, APO, AE
Terbush, James W., CAPT,MC,USN, Pensacola, FL
Trollman, Christopher J., CPT, MC, USA, Pensacola, FL
Osman, Stanley G., MBBS, Vic., Australia
Weldon, Sarah, Henley-on-Thames, UK

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