

President's Page

I write this message having just returned from the Association's November Council meeting, coupled with the Scientific Program meeting. Some 580 abstracts were reviewed for our 2008 meeting in Boston. Scientific Program Chair Susan Northrup and the entire committee did an outstanding job in evaluating the submissions and arranging presentation schedules. I look forward to a great meeting.

The Council had a very full day dealing with important Association issues. We discussed proposed bylaw changes, policy and procedure changes, communications, position papers, committee reports, and many other issues. I would like to inform the membership of two particularly important developments.

The Association has an ever-present problem with up-to-date communications within the membership. Leaders of constituent and affiliate organizations have encountered similar problems. This is not difficult to understand. AsMA has 11 constituent and 31 affiliate organizations, 15 standing committees, and frequently changing email and other demographic information among military and civilian members. Military members change locations, and many are currently deployed overseas. We have members from 70 countries. Yet communications is essential to a global organization such as ours.

A clean, accurate, flexible, and functional membership database is the cornerstone of all member interaction with the home office, officers, committees, and fellow members. The database should be fully integrated with the website, easily accessed by the members for updating of information, and easily understood by members with limited computer experience. There have been some difficulties with database/host/website integration that have hampered our communication abilities. Recognizing this, the Council approved formation of an ad hoc committee to explore potential solutions to this recurring theme. We are committed to finding a remedy that will improve our communications ability.

There was a major announcement at the Council meeting. After more than fifteen years of distinguished service as Executive Director of AsMA, Dr. Russell Rayman has announced his plans to retire from that position on January 2, 2009. There have been five Executive Directors of AsMA since its inception in 1929, and average tenure of just over 15 years. Dr.



John D. Hastings, M.D.

Rayman will have served in the position for 17 years upon his retirement, and he will be missed. We will have the good fortune of working with and exchanging thoughts with Russell in the coming year.

In my view, the Executive Director is a highly important position in the Association. The President and Officers, Executive Committee and Council members, committee chairs and committee members, and others are present for a time and then move on. We may be involved in one capacity or another for one or many years. We are scattered around the globe, and after volunteering our services to the Association we return to our daily work. We contribute to the Association in our spare time, and many contribute greatly. While we do these things, the Executive Director keeps a steady hand on the tiller all the while. He or she answers questions for members, the press, governments, and numerous organizations. He or she represents the policy of the AsMA, advocates for the Association, monitors its affairs, and calls attention to important issues. He or she works closely with Council and the Executive to serve the mission and vision of AsMA.

The process of seeking applications for the Executive Director position at AsMA was set into motion following the November Council meeting. Please direct any inquiries to the Home Office.

I close this message with an often experienced reflection. The volunteer spirit and camaraderie I witnessed at the meetings of the Council and Scientific Program committee of AsMA are unparalleled in my experience. We have a strong and vibrant Association.

Association News

Executive Director's Column



Rayman

So Much More to Be Done

During the past 15 years our Association has published approximately 100 position papers, resolutions, and related letters that have been sent to interested agencies worldwide. This represents a considerable amount of work by your Officers and Committees charged with advocacy responsibilities. If you review these documents that are on our website under Policy Compendium, I think you will agree that our vision has been extremely broad and our voice has been heard in various councils worldwide. Our primary interest is advancement of the health and safety of aviation/space crews as well as passengers and support personnel. However, our second agenda is to sustain our calling as the international leader in aerospace medicine. Although we could congratulate ourselves for all these accomplishments, I think it would be more constructive if we kept uppermost in mind what we have not accomplished.

First, although we have answered the call when consulted by countries outside the United States, I would encourage more of our international members to team with AsMA to resolve any local or international issues. After all, we have members representing approximately 75 countries and 31 Affiliate groups from overseas. Parenthetically, this might be due to the fact that in the last 20 years or so, aerospace medicine has very much matured in many countries obviating the need, therefore, for outside consultation. In any event, we can say that we stand ready if called upon.

Secondly, your Aerospace Medical Association has not yet published a position policy in a number of aerospace medicine issues. For example, we still do not have a published policy on fatigue countermeasures, even though this issue has been front and center for many, many years.

Regarding the space program, we must forthrightly face the fact that current countermeasures are simply not optimally effective and that an enormous amount of research must be accomplished in order to fulfill the President's vision of a mission to the Moon and Mars. Consequently, we must steadfastly remind our lawmakers and NASA officials that adequate attention to this deficiency is essential.

Your Association has already examined

the issue of medical requirements for commercial space travel. However, we focused on short duration flights of several hours. But there is no doubt that in the future, space tourists will have the opportunity to stay in space for weeks and months as well. Therefore, we should begin examining the necessity of countermeasures for space tourists. This can be a very difficult issue because many space tourists will have a preexisting illness that might make the utilization of countermeasures unsafe. This is a long way down the road but we should begin giving it our attention.

The subject of post traumatic stress disorder (PTSD) has received much attention in recent years although I have seen practically nothing on PTSD as it might apply to airmen. We know from our experiences in previous wars that airmen, like ground personnel, are susceptible. (I've had personal experience with this in the Vietnam War.) I would encourage that we explore this issue not only to discern its prevalence among aircrew, but also to find ways to prevent PTSD.

And finally I would say that the number of clinical articles and air evacuation articles that appear in our Journal are too few. Those of us engaged in these activities, particularly practicing flight surgeons and flight nurses, should be willing to prepare more articles in these areas as they are central to our specialty and are of great interest to our readers.

Obviously, there is a lot more we could do. Winston Churchill at a social gathering was approached by a woman who accused him of drinking too much. He replied, "So much accomplished, so much more to be done."

This Month in Aerospace Medicine History-- January 2008

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

Seventy-five Years Ago

Determining if pilots are fit to fly (Chief Flight Surgeon, Department of Aeronautics, State of Connecticut; Assistant Medical Director, CT; and Mutual Life Insurance Company, Hartford, CT; presented at the Annual Convention of the National Association of State Aviation Officials, Nashville, TN): "I hope I have made it plain... that every physician who undertakes the duty of selection of flying people assumes the initial responsibility in a serious business. He should ask himself whether he is equal to the task. Whether it be your friend, the public or the business world, who seeks the answer, the finger of responsibility is pointed at you. They want to know about the very keystone of the arch of flying - the pilot. You, above all individuals, should be able to answer the question, 'Are They Fit to Fly?' You are not passing upon their ability to fly, but whether or not, physically and mentally, they are fit to fly.

"Before we can answer this question we must have a standard or a yard stick by

which we measure the individual's qualifications. I shall not dwell at length on the yard stick. All of us who have had the golden opportunity of having been educated for this work by the U. S. Army School of Aviation Medicine know what this yard stick is. We know that it is the grouping together of the specialties of medicine in such a fashion that when this system is applied to any individual the result primarily indicates whether or not he is physically and mentally fit to fly. Remember this is a cut and dried standardization. In my opinion it is only twenty-four inches of the school of experience. It is only acquire in the school of experience. It is

See HISTORY, p. 73.

Aerospace Medical Association Seeks Executive Director

The Aerospace Medical Association (AsMA) is seeking applicants for the position of Executive Director. The Executive Director serves as the chief operating officer responsible for all management, administration and professional activities of the Association. Applicants should possess a doctoral degree and be familiar with the AsMA. Major responsibilities include membership services, planning and conducting an annual scientific meeting, publishing a scientific journal, and conducting liaison with related national and international organizations. Salary will be commensurate with these responsibilities and the experience of the applicant. Applications should include a 1- to 2-page narrative describing interest, professional qualifications, and vision for the Association. Also include a professional resume, salary history, and salary requirements. A position description may be obtained by calling (301) 469-5461. Mail applications to: Robert R. McMeekin, M.D., Chair, Search Committee, 7435 Arrowood Road, Bethesda, MD 20817-2822.

HISTORY, from p. 72.

well enough to say that this individual has a stable nervous system, a good pair of eyes, a good heart, but, after all, it is of the utmost importance that these particular factors be interpreted in terms of the air. As I just stated, twelve inches of the yard stick must be credited to experience alone...

"In conclusion, then, may I emphasize that the determining of the fitness to fly is the very root of safe flying? This can only be accomplished by trained men in small territories, with adequate regulations to back them and unhampered by outside pressure. Neither has politics any place in such a highly technical field. The air is an unlimited space, but very limited indeed when defective people use it. I hope I have presented this paper in the interests of public safety and that, in the near future, Friend, Public and Business alike will proclaim safe flying as the safest means of transportation. This goal can never be realized until 'They Are Fit to Fly'" (4).

Fifty Years Ago

AMA support of a CAA medical department: "Strong support of a 'completely adequate and competent' Civil Aeronautics Administration medical department, directly responsible to the CAA administrator, was given by the American Medical Association in a resolution adopted by its house of delegates in Philadelphia last month. The resolution was introduced by Dr. L. O. Simenstad of Osceola, Wisconsin, a member of the committee on aviation medicine of the AMA Council on Industrial Health which is headed by Dr. Jan H. Tilliseh, Rochester, Minnesota" (2).

Exercise to enhance altitude acclimatization (Department of Physiology and Biophysics, U. S. Air Force School of Aviation Medicine, Randolph Air Force Base, TX): "Advances in aviation that permit flight at very high altitudes were made possible by the technical development of oxygen breathing equipment and later by pressurization of the aircrew compartments. Space travel eventually might become a reality from a physiologic point of view if a more or less normal atmosphere can be provided for the crew in a cabin sealed off from the surrounding outer atmosphere. In such a man-machine combination each of both factors appears to be of equal importance to assure the most effective performance. Some of the limitations of this dualism can be predicted only if the physiologic adaptabilities of man are known and utilized to the fullest extent.

"Our interest in the optimal effectiveness of this man-machine complex was concentrated on the physiologic flexibility of the human in regards to hypoxic tolerance. An attempt was made to evaluate the effects of physical training and natural altitude acclimatization upon altitude tolerance as determined in experimental tests while breathing ambient air and oxygen under ambient pressure as well as under positive pressure. For practical purpose, natural acclimatization to higher altitudes would be feasible only if the improvement of altitude tolerance could be maintained for some length of time after return to more normal barometric conditions. This study, therefore, is also concerned with experimental investigations of a method to preserve the level of hypoxic tolerance achieved by living at high altitude...

"The altitude tolerance of six subjects was tested in a low pressure chamber before and after a physical conditioning training and after acclimatization to an altitude of 14,000 feet. The physical training resulted in an improvement of altitude tolerance of approximately 3,000 feet. Altitude acclimatization caused a further improvement of similar magnitude. Regular physical activity during the period of altitude acclimatization provided for a faster and more effective adaptation.

"'Ceiling studies' were made with two subjects to investigate the combined effects of pressure breathing tolerance and hypoxia tolerance at very high altitudes. In the control tests of the latter experimental series the subjects stayed at a simulated altitude of 50,000 feet for three minutes, breathing 100 per cent oxygen under a mask pressure of 30 mm Hg. During this time psychomotor performance deteriorated to 66 per cent of normal. With altitude acclimatization in effect the same subjects tolerated altitudes of 55,000 to 57,000 feet repeatedly for considerable length of time. Positive intrapulmonic pressures of 30 to 40 mm Hg were tolerated for thirty minutes and longer without circulatory embarrassment. Intermittent daily exposure to simulated altitudes of 15,000 to 18,000 feet for one and one-half hours preserved the hypoxic tolerance gained by the natural altitude acclimatization" (1).

Twenty-five Years Ago

Detecting ventricular tachycardia in aircrew (Biodynamics Branch, Crew Technology Division, USAF School of Aerospace Medicine, Brooks AFB, TX): "In this study, the findings in 15 apparently healthy asymptomatic males who had short runs of ventricular tachycardia during +Gz acceleration stress are described. All had echocardiograms in an effort to Kreen them for possible mitral valve prolapse. The only individuals with mitral valve prolapse were two aircrewmen already undergoing aeromedical evaluation for mitral valve prolapse, which included +Gz acceleration stress testing. The episodes of ventricular tachycardia occurred in association with very stressful +Gz exposures on a human centrifuge. Anthropomorphic and physiologic response parameters suggest that these individuals were under unusually high stress when they had the episodes of ventricular tachycardia. The multistress environment of the advanced fighter aircraft pilot represents a summation of factors that have previously been associated with significant dysrhythmias, such as ventricular tachycardia. These results suggest that in-flight episodes of ventricular tachycardia may occur

frequently in asymptomatic, apparently healthy aircrewmembers with completely normal aeromedical evaluations. If documented, ventricular tachycardia alone or mitral valve prolapse associated with significant dysrhythmias, such as ventricular tachycardia, are both currently disqualifying for continued USAF flying status. Continued investigation of ventricular dysrhythmias and mitral valve prolapse is imperative for assurance of both aeromedical safety and prevention of unnecessary medical restriction of aircrewmembers from continued flying duty" (5).

Perception of spatial orientation in a weightless environment (Department of Psychology, Brandeis University, Waltham, MA and Naval Aerospace Medical Research Laboratory, Naval Air Station, Pensacola, FL): "In orbital flight and in the free-fall phase of parabolic flight, feelings of inversion of self and spacecraft, or aircraft, are often experienced. We show here that perceived orientation in free-fall is dependent on the position of one's body in relation to the aircraft, the architectural features of the aircraft, and one's visual appreciation of the relative configurations of his body and the aircraft. Compelling changes in the apparent orientation of one's body and of the aircraft can be reliably and systematically induced by manipulating this relationship. Moreover, while free-floating in the absence of visual, touch, and pressure stimulation, all sense of orientation to the surroundings may be lost with only an awareness of the relative configuration of the body preserved. The absence of falling sensations during weightlessness points to the importance of visual and cognitive factors in eliciting such sensations" (3).

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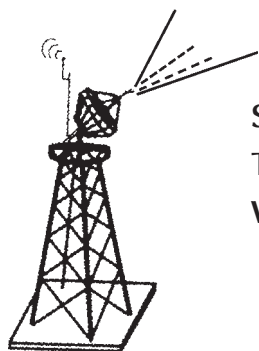
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Science & Technology Watch

Keeping You Informed Of The Latest Advances In Science And Technology

This month we present a review of the latest cardiac imaging technologies; pros, cons and applications.

New Trends in Cardiovascular Imaging Technology

James R. De Voll, MD, MPH, Manager, Medical Appeals Branch, Office of Aerospace Medicine, Federal Aviation Administration, Washington, DC

The incidence and the prevalence of coronary artery disease (CAD) remains the most significant cause of morbidity and mortality to general public health. Pilots suffer equally from CAD, and the evaluation of disease severity and risk stratification remain a major challenge in aerospace medicine. For the aviation medical examiner, the challenge is to ensure that the right testing is done to accompany the application for airman medical certification for pilots with CAD. At the level of the medical certification authority, the further challenge is to decide what additional information may be required to assess risk posed by CAD and associated cardiac dysfunction.

In addition to clinical examination and resting ECG, exercise stress test, echocardiography, myocardial perfusion imaging, and cardiac catheterization coronary angiography are the staple tests. In many cases, the question is not whether the pilot has CAD; the real question is whether CAD or cardiac dysfunction have been sufficiently addressed to acceptably mitigate risk. A typical clinical dilemma is interpretation of the results of a myocardial perfusion imaging (MPI) study and whether findings of potential reversible myocardial ischemia are significant or not. New challenges are compounding this problem. For example: a) atypical chest pain or silent ischemia seems increasingly prevalent, especially with the rising number of female aviators; b) identifying the culprit lesion along the several plaques that may be causing downstream ischemia; c) evaluating the rupture risk for a single plaque; and d) evaluating whether a perfusion defect that appears fixed is scar or hibernating myocardium.

Currently available testing modalities have well defined uses. Invasive coronary angiography is the gold standard for diagnosing significant stenoses and dovetails with stent placement techniques. Echocardiography, especially in conjunction with exercise stress testing, is useful for evaluating structure and left ventricular function. Myocardial perfusion imaging, specifically SPECT (single photon emission computed tomography) using thallium or technetium, is used to evaluate ischemic segments and is especially valuable

in conjunction with coronary angiography. Intravascular ultrasound is a percutaneous invasive technique that is now becoming the gold standard for evaluating the risk posed by specific plaques, but it is not universally available, and long-term risk implications are not fully understood. To supplement these techniques, numerous new technology applications are being developed or becoming available.

Positron emission tomography (PET) is a technology that has been used for over 25 yr in advancing cardiovascular physiology and pathology. Originally, it was a powerful investigative tool for quantifying in vivo pathologic processes to include myocardial perfusion and metabolism and neuronal receptor function. Limited availability and lack of data supporting its use stunted clinical acceptance as a stand-alone technology. However, integration with CT has fomented widespread acceptance of PET/CT scans in clinical oncology and is now moving into cardiovascular medicine. Using isotopes of Rb or N-ammonia, emission images can be acquired by ECG gated, multi-frame or dynamic, or preferably list-mode imaging techniques. Stress testing can be done using exercise or pharmacologic means (e.g., adenosine, dipyridamole, or dobutamine). Diagnostic accuracy is in the 0.84 to 0.98 range, and compares favorably with SPECT imaging studies. ECG gated PET at rest and peak stress is useful in evaluating multivessel CAD with global ischemia. In risk stratification, increasing burden of disease translates into proportional increases in predicted mortality. Combining CT identification of plaques and PET quantification of myocardial dysfunction allows ability to identify specific culprit plaques.

Advances in multidetector computed tomography (MDCT) technology have exploded recently, especially with the 64 slice scanners with submillimeter collimation and faster gantry rotation. The entire heart can be imaged in a single breath hold with excellent temporal spatial resolution. Diagnostic accuracy of MDCT to detect significant coronary stenosis has compared very favorably with coronary angiography, with sensitivities generally ranging from 80% to 97%. The sensitivity in detecting calcified plaque is higher than non-calcified tissue. There has been some improvement in the ability of MDCT coronary angiography to evaluate native and bypass vessels following grafting procedures. The procedure can be used to assess recurrent stenosis in stents, but use of metal struts impairs the value of the information obtained. MDCT can be used to assess global and regional left ventricular function, but there are limitations to the quality of this technique including the fact that beta-blockers are frequently used in these examinations. MDCT is also useful in determining the degree of myocardial perfusion and viability, especially utilizing delayed hyperenhancement techniques. The ideal goal with MDCT is to combine all of these uses to provide a single comprehensive cardiac CT study. However, increased radiation exposure, contrast administration, and the lack of data establishing prognostic clinical value are major drawbacks.

One of the most exciting areas is the development of faster scan techniques and software advances that enable MRI to be used for morphological and functional evaluation of the heart. More institutions are using this technology to identify coronary artery stenosis, evaluate myocardial viability, assess left ventricular

wall motion and function, and measure coronary blood flow and flow reserve. This methodology can be used for true comprehensive cardiac studies, especially providing visualization of peripheral coronary branches without the need for contrast agents. MRI appears to be comparable and potentially superior to other technologies. Cardiac MRI is also now being used in stress perfusion primarily in conjunction with pharmacologic stress testing protocols. Currently, the time required for the examination, cost, availability and other technical limitations along with lack of clinical validation have not allowed widespread use.

Other new technologies of potential significant clinical utility are being investigated. Radionuclide techniques are being explored for examining sympathetic innervation of the heart, especially following infarction damage. Radiolabelled matrix metalloproteinase inhibitors, Annexin V and caspase inhibitors, and Endothelin are being used experimentally to identify vulnerable plaque in larger arteries. New radiotracers are also being used to image hypoxia and identify potentially salvageable myocardium in acute coronary syndromes. There is also interest in identifying sites of angiogenesis, since it may be helpful or detrimental depending on the clinical situation. Reporter gene imaging and cell imaging are additional techniques under exploration.

The plethora of new noninvasive imaging techniques obviously holds great promise for risk stratification and mitigation in aeromedical decision making. However, the basic clinical utility and prognostic value of these techniques needs to be fully established and adopted in evidence-based guidelines. Once widely accepted and available, these new techniques may be integrated with application of existing technologies to help enhance aviation safety.

Further Reading

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See *SCI-TECH WATCH*, p. 80

Space Medicine at the University of Texas Medical Branch

by Richard Jennings, Robert Johnson, Jim Vanderploeg, and Jeff Davis

The University of Texas Medical Branch (UTMB) in Galveston has a long tradition in aerospace medicine, and continues to be a leader in aerospace medicine education, research, clinical care, and operations. Dr. William K. Douglas, a graduate of UTMB, served as the personal physician for the Project Mercury astronauts, and in 1966 Dr. Charles A. Berry was named as the chair of the aerospace medicine program. The UTMB/NASA-JSC aerospace medicine relationship was restarted in 1993 with the initiation of a space medicine fellowship that became an ACCME approved aerospace medicine residency in 1996. Since that time, UTMB has created an aviation medicine center for commercial and civil pilot medical support and added partnerships with Wyle and the Mayo Clinic - Scottsdale for spaceflight medical support. In addition, an analog spaceflight facility and short arm centrifuge were developed to assist NASA in microgravity countermeasure research. To support the UTMB programs, the faculty currently includes Drs. Robert Johnson, Jim Vanderploeg, Jeffrey Davis, and Richard Jennings.

Education

The UTMB/NASA-JSC residency continues to train physicians for employment in the space program, and for the last 7 years has also provided Masters in Public Health training for Army, Navy, and Air Force aerospace medicine residents. There are six residents currently enrolled in the military MPH program. The UTMB/NASA-JSC residency has five

residents in the internal medicine/aerospace medicine combined program and two in the traditional space medicine track. The aerospace medicine practicum year can be completed on an aviation medicine track or space medicine track. There are a variety of practicum opportunities available including the Johnson Space Center, Kennedy Space Center, Gagarin Cosmonaut Training Center, Brooks City-Base, and the FAA Civil Aerospace Medicine Institute. Most UTMB space medicine track residents eventually work in the space program, and 18 residents have been placed at NASA-JSC or with NASA contractors. Two former fellows have been selected as astronauts, and a third resident was already an astronaut.

In addition to residency education, the program also provides educational conferences that are available to NASA physicians and others. These opportunities include Aerospace Medicine Grand Rounds (available by teleconference or on the web), the Patty Robertson Aerobic and Aviation Safety Symposium, the Introduction to Aerospace Medicine Course, and the Aerospace Medicine Journal Club. The Introduction to Aerospace Medicine Course was created to cover the didactic field of aerospace medicine and also introduce students and residents to physicians and scientists from throughout the aerospace medicine field. Hands-on activities for exploring the aerospace medicine environment are also included for those who are medically fit. This course is available without charge to 4th year medical students and aerospace medicine residents from any medical school or country, if they have access to the United States.

Recently, the Charles A. Berry Space Medicine Library was established to provide historical and space medicine data for use by those in the residency or elsewhere. It is named for Dr. Berry, the former Director of Medical Operations and Research at the Manned Spacecraft Center, who was the first chair of aerospace medicine at UTMB. It provides a repository for books and data related to aviation and space through the Blocker History of Medicine Collection at the Moody Medical Library. UTMB is also the new home for the only U.S. text that covers the field of aerospace medicine, *Fundamentals of Aerospace Medicine*, edited by Drs. Davis and Johnson. Other educational opportunities at UTMB include a Ph.D. in Space Life Sciences coordinated through the Graduate School of Biomedical Sciences. UTMB 1st year medical students may also participate in summer internships in NASA-related research through the Medical School Summer Research Program (MSSRP).

Research

UTMB has served as a research site for the International Artificial Gravity Project. Recent developments include the opening of the Center for Space Life Sciences that is dedicated to translational research in Human Space Flight. This program with

NASA and Wyle includes a dedicated Flight Analog Program and Research Unit (Bed Rest Facility), the General Clinical Research Center (GCRC), and the Short Radius Centrifuge that are directly relevant to answering critical questions for the Vision for Space Exploration announced by President Bush in January 2004. The Flight Analog Research Unit was expanded from 5 to 10 beds in 2006. A stand-alone Zero-Gravity Locomotion Simulator became available in 2007 for simulated walk or run during bed rest studies. The centers provide research opportunities for UTMB investigators and graduate students in space life sciences and space medicine. There are also many other scientists at UTMB who conduct joint projects with NASA including projects in nanotechnology and the recent study of *Streptococcus pneumoniae* gene expression in space. Physicians from UTMB and Wyle provide for the medical monitoring and patient safety.

Operations and Clinical Support

UTMB has partnered with Wyle to provide operational support for the Shuttle program and International Space Station. UTMB and Wyle provide NASA approximately 10 physicians through the Bioastronautics Contract that support the ISS program at the Gagarin Cosmonaut Training Center in Star City, Russia, advanced medical projects, and the International Artificial Gravity Project. In addition, UTMB physicians provide direct clinical care plus telemedicine support at the NASA-JSC flight medicine clinic. UTMB has initiated minimal telemedicine support for clinical services at the Gagarin Cosmonaut Training Center. UTMB also provides JSC Medical Operations with a clinical competency training program for NASA clinicians.

Starting in 1995, UTMB opened an Aviation Medicine Center that provides aeromedical expertise to pilots and passengers in the aviation or space environment. This service includes AME exams, fitness-to-fly exams, and commercial pilot disability assessments. Since 2003, UTMB has provided clinical evaluation and operational support for commercial spaceflight participants who fly to

See *UTMB SPACE MEDICINE*, p. 80.



Fig. 1. UTMB space medicine resident Serena Aunon at the launch pad in Baikonur prior to the launch of Soyuz TMA-10.



Fig. 2. The Short Arm Centrifuge constructed by Wyle Laboratories for NASA countermeasure research at UTMB.

AEROSPACE PHYSIOLOGY REPORT

Smith Whittier Ames

by Lt. Col. Andy Woodrow, USAF, USAFSAM,
Brooks City-Base, TX

The Smith W. Ames Lecture is the keynote address at the Aerospace Physiology Society luncheon each year during the annual AsMA symposium. The invited speaker is typically a recognized expert in the field of aviation physiology, human factors, crew integration, or flight safety, and provides the audience with a contemporary snapshot of current trends in the aerospace physiology industry. Following the symposium in Orlando in 2006, there was discussion and an informal move to drop the named lecture for a less formal luncheon event. It was clear to this writer that the Society should be re-introduced to Smith Whittier Ames!

Long before his capstone assignment as USAF Aerospace Physiology career field chief (BSC Associate Corps Chief), Smith W. Ames established himself as a leader in the field of aviation physiology and flight safety. A 1933 graduate of the University of Maine (BA/MA in zoology), Smith Ames taught high school and university science in Maine, Colorado, Arizona, and California for nearly a decade. In March 1944, he was qualified as an Aviation Physiologist at the School of Aerospace Medicine, Randolph Field, TX, and began his journey through many newly developing fields of altitude physiology. In 1953, he earned a Masters of Education from the University of Southern California, and in 1957 the same university conferred upon him the degree of Ph.D. with a specialty in aviation

physiology. In his Masters thesis, Ames sought to establish specialized training for flight safety officers, "to determine the kind and type of special training necessary for the successful accomplishment of the Flying Safety Officer's mission." This project led to the establishment of the first formal curriculum in flight safety in the USAF. The Air Force Safety Center, in collaboration with USC, soon after established the flight safety school at Norton AFB, CA, where it remained until the Safety Center moved to Kirtland AFB, NM. The original curriculum architecture was built around lecture and labs in subjects of aeronautical engineering, aviation physiology, educational methods, aviation psychology, and accident investigation techniques. His recommendation for the instructor cadre in flight safety training included a Ph.D. in education, a Ph.D. in psychology, a physiologist (M.D., Flight Surgeon), and two aeronautical engineers (pilots). Current Department of Defense flight safety training programs retain this critical life sciences association.

Following on from Armstrong's studies on the deleterious effects of negative radial acceleration in man, Ames' doctoral work investigated the application of counter-pressure garments on the head and chest during exposure to negative acceleration. He summarized that the application of pressure to the soft tissues of the head and neck would prevent over-stimulation of the carotid sinus nerves, and thus avert bradycardia. His seminal work ultimately led to advanced aircrew life support systems still in use today.

During his tenure as Aerospace Physiology career field chief, Ames expanded

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the USAF program to 45 chamber units and a total of 60 chambers. Pressure suit training was established at eight locations and operational hyperbaric chambers (99S-series) were installed at seven locations. Additionally, first-ever operational support was provided for high altitude low opening (HALO) jump missions, and for the first time research and development authorizations were opened to aerospace physiologists. Smith W. Ames retired from active duty in 1967 at the rank of Lieutenant Colonel, and then continued his career in the Air Force Surgeon's Office in the grade of GS-15 until his retirement from government service.

Smith Whittier Ames left an indelible mark on the field of Aerospace Physiology—from acceleration and high altitude physiology to flight safety and diving medicine; he established a flight path for us to follow, advance, and refine. There is no question that the Smith W. Ames Lecture should retain a special place on the AsPS annual calendar; and I for one look forward to the next installment in Boston!

Certification in Aerospace Physiology

Applications for Aerospace Physiology Board Certification are available from the Admissions Committee
Chairman: CDR Thomas J. Wheaton, MSC
USN, 13529 Osprey Lane, P.O. Box 202
Dowell, MD 20629; tjwheaton@comcast.net (personal); thomas.wheaton@navy.mil (professional)
Deadline for Application: 07 March 2008.

AEROSPACE NURSING SOCIETY NEWS

President's Message

Greetings to all ANS members! You should be receiving this message in the New Year and I hope you're all well and prospering. This message was written at the Scientific Planning Meeting that is held every year in Alexandria, VA. I had the pleasure of representing ANS at the AsMA Council meeting held the day before the Scientific Program Committee meeting. The Council meeting was informative and we voted on several items that will be up for general vote during the May 2008 AsMA business meeting. If you were unaware, as an AsMA member you can attend any meeting and your presence at the business meeting is certainly most welcome. At the business meeting you can vote on critical issues regarding ANS and AsMA.

Besides voting on changes and proposals at the planning meeting, we heard reports from all of the AsMA committees and constituent organizations. AsMA is a very active organization! For further updates on AsMA-

related happenings, go to the AsMA webpage (www.asma.org) or look for updates in upcoming journals.

At the Scientific Program Committee meeting we reviewed abstracts and panels for presentation at the 2008 AsMA meeting in Boston, MA. All three ANS panel presentations will be on Monday, in a row, following the opening ceremony. There will also be several posters on aeromedical transport and evacuation that will be scheduled. Expect more information about the 2008 AsMA meeting in upcoming ANS messages.

Of great importance are deadlines for award nominations which are quickly approaching. Hopefully, the nomination deadlines have not already passed as you read this (January 15th). The four awards still needing nominees are the 1) Hoefly, 2) Garrecht, 3) Krakauer, and the 4) Iverson awards. The Brigadier General E. A. Hoefly Award honors an ANS section member who has made an outstanding contribution to the field of nursing (the deadline for this award was December 15th). The Brigadier

General Claire E. Garrecht Award, sponsored by Education Enterprises Incorporated, honors an ANS member for an outstanding scientific paper presented during the annual scientific meeting of the Aerospace Medical Association. Junior nurses can be awarded the Dr. Hans Krakauer Junior Flight Nurse award if they meet specific criteria for outstanding professional accomplishments in the aerospace field, clinical practice, education, management and/or aerospace research. Finally, the Edward R. Iverson Sr. Award is sponsored by the Iverson Family and is given to a deserving Allied Health Professional/Technician who has made contributions to the aeromedical evacuation profession.

Please forward your nominations to Charles Tupper or me at catherine.p.dibiase@nasa.gov

Until our next encounter, stay safe and Happy New Year.

Regards,
Cathy DiBiase, RN, BSN
ANS President 2007-2008

Send information for publication on this page to: Cathy DiBiase
Mail code: BIO-1
Kennedy Space Center, FL 32899
email: Catherine.PDibiase@nasa.gov

WING NEWS & NOTES

Send information for publication on this page

to: **Dale Orford**
15516 E Acacia Way,
Fountain Hills, AZ 85268
480-837-7919; dorford@cox.net

Phyllis Hain, Civilian of the Year

Phyllis Hain, a Wing member at the Fleet and Family Support Center, was selected NAS Pensacola Civilian of the Year in 2006 for her ongoing excellent work. She is an educational specialist and former coordinator of the Sexual Assault Victims Intervention (SAVI) Program. She became the SAVI coordinator in 2000, initiating



changes such as partnering with Rape Crisis Center to provide increased training to active-duty personnel at NAS Pensacola. During the first year she was coordinator, she trained approximately 17,000 people. When reforms were made to the SAVI program in 2005, she provided extensive training to commands to ensure awareness of and compliance with the changes.

Hain also increased the number of trained points of contact and addressed issues of non-reporting at the command level. This resulted in better recording of incidents and in the number of sexual assaults at NAS Pensacola being reduced by 70% during the past 5 years. Hain also collaborated with military and community agencies to assist them in prevention of sexual assault, and in offering better services and more sensitivity

to the victims of assault. Additionally, she spent time assisting the naval hospital in passing the sexual assault portion of their accreditation.

Hain currently serves as Vice President of Northwest Florida Victim's Coalition, an organization that provides assistance to victims of violent crimes. She has provided training to victim advocates to ensure knowledge of DoD directives and has served as the Sexual Assault Response Coordinator for the past 5 years. Despite having changed jobs in December of 2005, she continued to fill her former job responsibilities until another person was hired so that services could continue to be provided to commands and sexual assault victims.

Condensed from an article by Bobbie Simpkins, Director FFSC, that ran in the *Gosport Spotlight* on April 27, 2007.

Christmas and New Year's Eve Traditions a la Nana

As I was preparing for the holidays this year, I realized that many of the traditions that have been kept in my family all stem from things I remember during my "growing up" years with "Nana", my Aztec Grandmother. The preparation for Christmas and New Year's Eve always bring fond memories of all the "family" things that were done during this time. Although there were many traditions during the various holidays, the ones that stand out most in my mind are those during the Christmas and New Year's holidays.

Preparation for the traditional homemade tamales began shortly after Thanksgiving Day. There are so many things that need to be done prior to actually making the tamales. My most vivid memory is shopping for all the things we would need for the tamales. Once the ingredients were in house, Nana would begin the preparation of the masa (dough) for the tamales. This involved cleaning fresh ears of corn, removing the kernels from the cob, and then bringing out the metate to grind the corn; a task I never mastered!

Once the corn was ground, it was put aside until it was time to prepare the dough. The next step was preparing the meats, which would be used as the filling for the tamales, pork, beef, and chicken. Then we would prepare the cornhusks for the tamales. This involved soaking the husks, washing them, and then keeping them moist until it was time to assemble the tamales. Nana would probably make 20-25 dozen tamales prior to Christmas Eve.

After all the tasks were completed in preparation to make the tamales, Nana would begin the job of decorating our home for Christmas. Our first job was to prepare the paper bags for the luminarias. This involved a trip to the Colorado River to bring clean sand to put in the bags. Then we added the candles to each bag and lined them up our sidewalk and driveway. These were not

lit until Christmas Eve and then were kept burning until New Year's Eve.

Then it was time to get the Christmas trees (3); one for the house and two to be placed outside, along with the Nativity Scene. My Grandfather was a talented carpenter and had made all the statues for the Nativity scene: Joseph, Mary, Baby Jesus, Shepherds, Wise men, and all the animals, etc.

One of the special things I remember is the Advent Calendars Nana would have for us. We would "open" a window for each day and get a treat of delicious chocolate from each window. Also, the Advent Wreath was prepared and we celebrated lighting each candle as a family. Once all this was done, we would begin making the tamales. In addition to our regular stove in the house, Nana had a wood-burning stove in the back yard, and this was fired up and most of the tamales were cooked on the wood burning stove.

On Christmas Eve, we would attend Midnight Mass at St. Thomas Indian Mission, and then all the priests, nuns, and friends would come home with us and enjoy the tamales and other foods Nana and I had prepared. Most of the friends who came to our home on Christmas Eve would bring their specialty dish or beverage and our celebration would begin after mass and continue until morning.

Although I have not continued this tradition in its entirety, I still keep most of these traditions during the Christmas holidays. I have handed these down to my two sons and they try to keep as many of these in place. My favorite tradition for New Year's Eve were the bunuelos (fritters) which Nana made each New Year's Eve. These are prepared and then sprinkled with cinnamon and powdered sugar. A wonderful treat!

Register for the Meeting!

The Wing Registration form is available in the front of the journal. Join us for our this year's activities:

"A Boston Tea Party" Annual Welcome Reception, Monday, May 12, 12:30-4:30 p.m.

"350 Years in a Day" tour, Tuesday, May 13, 9:00 a.m.-1:30 p.m.

Annual Luncheon and Business Meeting, Wednesday, May 14, 11:30 a.m.-2:30 p.m.

Cambridge Tour with Charles River Cruise, Thursday, May 15, 10:00 a.m.-2 p.m.

The Wing Hospitality Room and Registration will be open Sunday 1-5 p.m., Monday 10 a.m.-1:30 p.m., Tuesday 8-9 a.m., and Wednesday 8-9:30 a.m.

We look forward to seeing you!



Join
the
Wing!

The Wing of the Aerospace Medical Association was formed in 1952 "to support the specialty of aviation, aerospace, and environmental medicine by facilitating cooperation among its practitioners and by increasing public understanding and appreciation of its importance." Dues are \$20 per year. For more information, contact:

Judy Waring
4127 Kenyon St.
Seattle, WA 98136
(206) 933-0884
e-mail: judywarig@comcast.net

NEWS OF MEMBERS



Charles Barker and his wife Conoly.

Charles O. Barker, M.D., M.P.H., FACHE, retired from the Navy in June, stepping down during a change of command and retirement ceremony held at Pearl Harbor, HI. He has relocated to Dallas, TX, along with his wife, Conoly.

Paulo Magalhães Alves, M.D., M.Sc., formerly the General Medical Manager of the Ruben-Berta Foundation, VARIG Brazilian Airlines, Rio de Janeiro, Brazil, is now serving as Medical Director at MedAire, Inc., in Tempe, AZ. He is responsible for providing technical guidance regarding product and business development and a company spokesperson. I also assist with medical case reviews, staff training, medical marketing and client support for 93 airlines, 3000 business jets, 500 commercial shipping vessels and 350 luxury yachts. He is a member of the Aero-space Medical Association, the Airlines Medical Directors Association (and has been Vice-President three times), Member of the International Academy of Aeronautical and Space Medicine (IAASM); and the International Airlines Medical Advisory Council (IAMAC). He is also Past President of the Brazilian Society of Aerospace Medicine and an ex-member of IATA Medical Advisory Group.

Gordon Landsman, M.D., FAAFP, retired from the U.S. Air Force at Creech Air Force Base in June 2006 and is currently the Regional Flight Surgeon, United Airlines, Mountain Division, in Denver CO. Dr. Landsman continues as the Chairman of the AsMA Registration Committee and is looking forward to seeing everyone in Boston for the annual meeting.

MAJ Glen D. MacPherson, USAF, MC, is now the Chief, Studies Analyses, at the 33th Human Systems Wing/Performance Enhancement Directorate, at Brooks City-Base, San Antonio, TX.

Royse Moser, Jr., M.D., M.P.H., was recently chosen as the President-elect of the Harvard School of Public Health Alumni Association and Chair-elect of the Harvard School of Public Health Alumni Council. He remains as Chair of the HSPH Alumni Award of Merit Committee.

Col. Jay C. Neubauer, USAF, MC, originally serving as Commander, 52nd Medical Group, 52nd Fighter Wing, at Spangdahlem Air Base, Germany, is now serving as Surgeon General, 1st Air Force (Air Forces Northern), at Tyndall

Air Force Base, FL. He was recently awarded the Legion of Merit with oak cluster.

Col. Charles Tupper has assumed command of the 439th Aeromedical Evacuation Squadron (AES) at Westover Air Reserve Base in Chicopee, MA. Previously, Col. Tupper was the Director of Operations at the 315th Aeromedical Evacuation Squadron at Charleston Air Force Base, SC.

A native of Southampton, NY, Col. Tupper joined the Air Force in 1970 as an aircraft maintenance technician on the KC-135A. He was deployed in support of Operation Linebacker I and II during the Vietnam War and Operation Nickel Grass during the Yom Kippur War in 1973 and deployed in support of the Global War on Terrorism in 2006 and flew OIF/OEF aeromedical evacuation missions. He earned a direct commission in 1979 after receiving a Bachelor of Science Degree in Nursing from the University of South Carolina and served 23 years active duty Air Force. He retired from active duty in 2003 and entered the Air Force Reserve in 2004.

The new 439th AES commander is a chief flight nurse with more than 2400 flight hours in several aircraft. During his career, Col. Tupper accrued more than 80 combat hours in various missions over Vietnam, Iraq, and Afghanistan. He is a past-president of the Aerospace Nursing Society.

New Members

Abdalla, Elizabeth L., Capt., USAF, MC, Bellevue, NE
Amaratunga, Ruwan, B.Sc., M.D., London, ON, Canada
Bleckley, M. Kathryn, Ph.D., Oklahoma City, OK
Bolyard, Brent L., M.D., Fayetteville, AR
Colon, Eric J., Maj., USAF, MC, Bridgewater, MA
Elefant, Ronen, M.S., M.D., New York, NY
Ficek, Silas, Maj., USAF, Penn Valley, CA
Goodwin, Meredith A., Lt.Col., USAFR, MC, Tallahassee, FL
Hollis, Lisa, R.N., Juneau, AK
Kelly, Jason A., Capt., USAF, MC, Wichita Falls, TX
Lopez, Joseph A., Lt.Col., USAF, MC, Prattville, AL
Ludtke, John R., Capt., USAF, MC, FS, Royal Oak, MI
Molloy, Jeffrey W., Maj., USAF, MC, FS, APO, AE
Mull, Shane R., MAJ, MC, USA, Leesville, SC
Nast, Justin B., Maj., USAF, MC, Tucson, AZ
Nishimura, Naoko, Tokyo, Japan
Rohde, Christopher S., Maj., USAF, MC, Rapid City, SD
Sarkar, Subhajit, M.B., Ch.B., M.Sc., Portland, OR
Schreml, Julia M., Mannheim, Germany
Screws, Melinda D., Maj., USAF, MC, Melbourne, FL
Truong, Anthony, Capt., USAF, MC, FS, Belleville, IL
Valentine, James L., Lt.Col., USAF, MC,

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Alexandria, VA 22314-3579
pday@asma.org

Meridian, MS
Vinson, Eric D., MAJ, ANG, MC, Clarion, PA
Wages, John W., M.D., Austin, TX
Williams, Patrick K., MAJ, ANG, MC, Dothan, AL

In Memoriam Oleg G. Gazenko

By Arnauld Nicogossian, M.D., School of Public Policy, George Mason University, Arlington, VA

On November 17, 2007 Academician Oleg Gueorgovitch Gazenko passed away after a complicated illness. He is survived by his spouse of almost 68 years and two children.

Dr. Gazenko was the former Director of the Institute of Biomedical Problems (IBMP) of the 3rd Main Department of the USSR Ministry of Health, Past President of the Russian I. P. Pavlov Physiological Society, Fellow of the Aerospace Medical Association, and the recipient of the NASA Distinguished Public Service Medal as well as the AsMA Louis H. Bauer Founders Award. He was buried with full military honors at the Troieukrovskaya Cemetery in Moscow.

Dr. Gazenko was born on December 12, 1918 in the Transcaucasia village of Nikolaevka. In early childhood he became interested in mountain climbing and biology, which probably led him to choose a medical career. In 1941 he graduated with honors from the military school of the 2nd Moscow Medical Institute with the rank of captain of medical services. This was the year of the start of the Great Patriotic War for the Soviet Union (WW II). Together with the whole graduating class he was sent to the front. He became the commander of the Aero Medical Clinic of the 197th Battalion,

See GAZENKO, p 79.

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www.asma.org

Log into the Members Only page, where you can:

- Update your address, phone number, and e-mail address
- Access the Blue Journal online
- View Association news
- Renew your membership
- Join the Mentor program
- View the Job Fair and classifieds
- REGISTER FOR THE ANNUAL MEETING!!!!

GAZENKO, from p. 78.

15th Air Corps and served with distinction in the West, South West, Baltic, and Belorussian frontlines. He received many decorations and citations for his valor in combat.

From 1946 through 1947 Dr. Gazenko trained in altitude physiology and aviation medicine at the Military Medical Academy in Leningrad (now Petrograd). He studied under the guidance of renowned Soviet physiologists: Col. Gen. L. Orbeli and Maj. Gen. M. Berestkin. In 1947 Dr. Gazenko was transferred to the Aviation Medicine Institute of the U.S.S.R. Ministry of Defense. He steadily progressed from the ranks of scientist to the position of the Deputy Director of the Institute.

Dr. Gazenko designed and conducted critical experiments in crew workloads and human factors, especially under the influence of exposures to extreme flight and environmental conditions. From 1948 to 1950 he participated as a lead medical expert and researcher during the deployment of the Soviet Air Force in the Arctic and arid areas of the U.S.S.R. He was a team member for the Ministry of Defense expeditions "North Pole - 2, 3 and 4" and worked on the ice drifting stations in the Arctic Ocean and in the Kara Kumakh desert. Between 1951 and 1952 he was assigned combat duties in North Korea.

In 1955 Dr. Gazenko developed a keen interest in space biology and medicine. He concentrated his efforts in designing and executing hypokinesia studies, ground based and space biology experiments on biosatellites. He became one of the leading scientists in the Soviet animals in space program and a member of the first group to study the gravitational effects of acceleration and weightlessness on Soviet sounding rockets. He investigated many aspects of the space related health risks on humans, and was directly involved in the medical evaluations and preparations of Yuri Gagarin for spaceflight.

In 1969 the Central Committee of the Communist Party and the Council of Ministers officially assigned Dr. Gazenko to the Third Main Department of Health of the Ministry of the U.S.S.R. as director of the Institute of Biomedical Problems. He remained in this position until he retired in 1988 after choosing his successor, Academician Anatoly Grigoriev.

Starting in 1970 Dr. Gazenko devoted his efforts to organize the nascent Soviet field of space biology and medicine. His efforts led to the development of a first rate fundamental space biology, physiology, and medicine programs attracting outstanding researchers and scientist from the Soviet Academy of Sciences and other countries. He initiated many "firsts" in human factors, medical risk assessments, hypoxia and life support and space suit development with his colleagues such as Guy Severin and Arnold Baer. He also developed an extensive radiation protection program and promoted hyperbaric and undersea medicine with the help of Dr. Abraham Guenin. He attracted young and talented researchers such as Dr. Anatoly Grigoriev, the current Director for the IBMP and Acting Vice President of the Russian Academy Sciences, and Dr. Eugene Ilyin, the Director of the Biosatellite (Kosmos series) program.

In 1978, Dr. Gazenko began focusing on long duration space missions and the development of medical countermeasures. Grigoriev, Kakurin, Egorov, Bogomolov, Goncharov, Kozlovskaya, and many others were among

the physicians, scientists, and biomedical engineers assisting him in fulfilling this goal. Under his leadership a series of international biological experiments on biosatellites and Salyut orbital stations were implemented. Bulgaria, Hungary, Germany, Czechoslovakia, Poland, USA, France, and many other countries did take part in these experiments.

For many years Dr. Gazenko led the Soviet delegations to the United Nations Committee on the Peaceful Uses of Outer Space. He proposed and succeeded in presenting special annual sessions at the U.N. dedicated to the medical benefits derived from space technology. He insisted on making this an international forum and invited NASA to participate. Dr. Gazenko was a strong proponent of international collaboration. He was the Co-Chair of the Soviet-NASA Joint Working Group on Space Biology and Medicine. As a matter of fact, he provided the continuity for the Joint Working Group from 1972 until 1988 as worked with the ever changing NASA Directors of Life Sciences (Drs. Charles Berry, David Winters, Jerald Soffen, and Arnauld Nicogossian). He was also a moving force behind the IAA/IAF Man in Space Annual Symposia.

Dr. Gazenko was an avid writer and published over 300 articles. "Animals in Space" (1960), "Life and Space" (1961), "Space Cardiology" (1967), "Humankind and Space" (1987) are among select books edited and published by Dr. Gazenko. He was the initiator, contributor, and co-editor of the Russian Academy of Sciences and NASA joint publications on Space Biology and Medicine. He edited "The Problems of Space Biology," now totaling over 80 volumes. He was the Senior Editor of the journal *Astrobiology and Medicine*. He was the editor and contributor to many national and international scientific journals and publications, including *Izvestia of the Russian Academy of Sciences, Science and Life, and Aerospace and Environmental Medicine*. He also served as the Chair of the Scientific Council of the Russian Academy of Sciences on space biology and medicine. In 1987 Dr. Gazenko was elected president of All-Union (now Russia) Physiological Society and served for many years on the Board of Directors of the G. Galileo International Fund (USA, 1982). In 1988 he was honored with the prestigious Demidov Prize for his scientific achievements.

On a personal note I have known and worked with Dr. Gazenko since 1972. As an OSU resident I introduced myself to Dr. Gazenko at the AsMA Annual Scientific Meeting (in Russian of course!). This legendary man took time to enquire about me and my future plans, and invited me to visit him in Russia. Since then our paths crossed many times and over many decades. I had the opportunity to share in his family life and to reciprocate as well. I met his spouse, an outstanding endocrinologist and researcher, and his children. I was honored with a request to autograph the special wall in his apartment, and did squeeze my name among the many famous individuals who had visited him before me. I always enjoyed listening to him, understanding his meanings and more so learning from him. Dr. Gazenko was always composed, kind, thoughtful, and forgiving. He knew a lot and loved to share his experiences and knowledge and at the same time he was also keen to learn. He always took time to ask everybody's opinion, no matter the importance or rank of the individuals surrounding him.

Dr. Gazenko was proud of the Russian science and the accomplishments of his colleagues and employees. Dr. Grigoriev asked him to remain as a senior advisor after he retired as the Director of the IBMP. It was always reassuring to hear Dr. Gazenko's wise advice and suggestions during impasses which resulted from complex international negotiations. He was always ready to help, and his assistance was given selflessly and with a great depth of thought. Dr. Gazenko and I worked closely using telemedicine to provide help to the earthquake devastated Armenia in 1989. Dr. Gazenko went through many difficult negotiations for this project and supported many other international humanitarian projects. In 1979 all collaborative research activities between U.S.S. and U.S.S.R. were suspended with two exceptions: the NIH Collaborative Cardiac Risk Study and the Biosatellite experiments. The collaboration in space biology research was saved through the efforts of Dr. Gazenko. He was respected by NASA officials, scientists and politicians alike. Among his friends were Melvin Calvin, George Muller, James Fletcher, Orr Reynolds, Earl Wood, Ashton Graybiel, Larry Dietlein, Carolyn Huntoon, Stanley White, John Marbarger, Rufus Hessberg, and many others. He seemed acquainted with everybody, especially the research community in the Soviet Union and the U.S.

There is so much to say and share about Dr. Gazenko and his contributions. He will be sorely missed by the international aerospace and physiology community, but more so by his exceptional family and colleagues. I hope that all of us remember him as he truly was an officer and a gentleman.

In Memoriam Gordon D. Francis, M.D.

AsMA has just learned that Gordon D. Francis, M.D., died in August 2006. Dr. Francis received his B.A. degree in 1952 from the University of Nebraska at Lincoln, where he was active in the U.S. Army ROTC. He earned his M.D. from the University of Nebraska College of Medicine in Omaha in 1955 and began his career in the U.S. Army Medical Service with an internship at William Beaumont U.S. Army General Hospital in El Paso, TX. His postgraduate training was in otorhinolaryngology at Walter Reed U.S. Army Medical Center in Washington, DC.

Dr. Francis entered the U.S. Naval Reserve in 1948 and served there until 1950, when he enlisted in the U.S. Army Reserve, where he served until 1959. During this time, he also served in Germany as a general surgeon until 1958, when he was discharged. In 1960, he began a private practice in family and general medicine in Arapahoe, which he moved to Grand Island in 1966. He also served as a part-time ER physician at several area hospitals.

Dr. Francis was a member of the Omaha-Douglas Co. Medical Society, the South-West Nebraska Co. Medical Society (where he served as President from 1965-1966), the Hall Co. Medical Society (he served as President from 1974-75), the Nebraska Medical Association, the American Medical Association, the Association of Military Surgeons, the American Academy of Family Physicians, the American Board of Family Practice, the Flying Physicians Association, and a Fellow of the Aerospace Medical Association.

the International Space Station with Space Adventures. This effort has been augmented by the staff from Wyle. Dr. Vanderploeg currently serves as the medical director for Virgin Galactic and Dr. Jennings as the medical director for Space Adventures. Recently UTMB, Wyle, and the Mayo Clinic - Scottsdale formed an Alliance to provide space medicine expertise to a variety of commercial spaceflight venues. UTMB clinical expertise in medicine and aerospace medicine has proven valuable for evaluating and treating individuals who fly in space. There is potential for continued expansion in this field.

UTMB remains positive about the future role of aerospace medicine and opportunities for practitioners in the field. To support train-

SMA JEFF MYERS YOUNG INVESTIGATOR AWARD

The Space Medicine Association's Jeff Myers Young Investigator Award is presented to a young investigator who is the primary author of an outstanding presentation in the area of Aerospace Medicine presented at the current Annual Scientific Meeting of the Aerospace Medical Association. In addition to being the primary author, the work must be original and the young investigator must be presenting at the Annual Scientific Meeting for the first time. The Award is intended to encourage young investigators new to the field of Aerospace Medicine.

The applicant must submit a draft manuscript of their presentation to the chair of the Jeff Myers Young Investigator Award sub-Committee. To be considered for the 2008 award, manuscripts must be submitted by March 15, 2008 to:

K. Jeffrey Myers, M.D.
Space Medicine Branch
Young Investigator Award Chair
P.O. Box 540305
Merritt Island, Florida 32954
Phone: (321) 867-2026
jeffrey.myers-1@kmail.ksc.nasa.gov

ing in this field, endowed funds such as the William K. Douglas and Jeffrey R. Davis funds have been started to support scholarships for UTMB aerospace medicine students and residents. In addition, the Patty H. Robertson and Charles A. Berry funds support clinical symposia, aerobic flight experience, and the Berry Library. Information about these programs or the UTMB aerospace medicine educational and employment opportunities can be found on the UTMB website or by contacting the residency office at 409-747-6131.

SCI-TECH WATCH, from p. 74

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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 AsMA News link under Publications.

AME 2008 Seminar Schedule

January 18-20	Irvine, CA	OOE†
March 03-07	Oklahoma City, OK	BASIC*
April 04-06	Minneapolis, MN	NPN†
May 12-15	Boston, MA (AsMA)	AP/HF‡
June 02-06	Oklahoma City, OK	BASIC*
August 01-03	Washington, DC	CARDIO†
November 03-07	Oklahoma City, OK	BASIC*
November 14-16	Reno, NV	NPN†

AP/HF = Aviation Physiology/Human Factors Theme

CARDIO = Cardiology Theme

OOE = Ophthalmology - Otolaryngology - Endocrinology Theme

N/NP/P = Neurology/Neuro-Psychology/Psychiatry Theme

The Civil Aerospace Medical Institute is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

* A 4½-day basic AME seminar focused on preparing physicians to be designated as Aviation Medical Examiners. Call your regional flight surgeon.

† A 2½-day theme AME seminar consisting of 12 hours of Aviation Medical Examiner-specific subjects plus 8 hours of subjects related to a designated theme. Registration must be made through the Oklahoma City AME Program staff: (405) 954-4258 / 4830.

‡ A 3½-day theme AME seminar held in conjunction with the Aerospace Medical Association (AsMA). Registration must be made through AsMA at (703) 739-2240. A registration fee will be charged by AsMA to cover their overhead costs. Registrants have full access to the AsMA meeting. CME credit for the FAA seminar is free.

CLASSIFIEDADS

POSITION WANTED

I am interested in exploring employment opportunities in the space life-sciences area. I am a science and engineering specialist with a broad and in-depth background in the physical and life sciences, computer programming/simulations, applied math, and data analysis/statistics.

My fields of expertise include neuropsychopharmacology, developmental neurobiology, acoustics, microscopy, stereology, molecular biology, histology, histochemistry, and general psychology / human factors. I also have a background in physics & astronomy, aerospace engineering, materials science, economics, and business administration. This year, I graduated from Brown University (Experimental Psychology Department), where I worked in two labs that specialized in neuroscience, pharmacology, and acoustics.

Some highlights of my educational and professional background are as follows:

- Successfully completed challenging PhD program (research, teaching, coursework; 4.0 GPA), voluntarily took courses at other universities at the same time, and reduced my labs' expenses by securing funding from other sources (fellowships, teaching assistantships; \$114,873 altogether).
- Cut experimental failure rate in half (no shortcuts, no sloppiness, uncompromising quality control).
- Routinely worked on complex projects that required work during non-core business hours.
- Proven written, oral, and graphic communication skills, as demonstrated in laboratory training and classroom teaching settings.

Also: Habit of working across disciplinary boundaries and outside professional comfort zone; acquire new skills rapidly. Great accuracy, attention to detail, continuous quality control, and troubleshooting skills. Strong concern for health and safety. Ability to work independently and in a team and to supervise the work of others. Commitment to excellent work in biomedical science or engineering.

I am happy to discuss job opportunities with any interested employer (academic or non-academic). A résumé/CV is available on request. I am willing to relocate for the position. My contact information is: Thomas Templin, (401) 351-2397, Thomas_Templin@cox.net.

I would be happy to hear from you!

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