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## SPACE MEDICINE BRANCH REPORT

### Awards of the Space Medicine Branch

At the Scientific Meeting of the Aerospace Medical Association in May 1996, the Space Medicine Branch (SMB) presented two awards, the Hubertus Strughold Award, and the Young Investigator Award.

#### Hubertus Strughold Award

*The Hubertus Strughold Award is presented each year for dedication and outstanding contributions in advancing the frontiers of Space Medicine, for sustained contributions to further the goals of the Space Medicine Branch and to whom best exemplifies the ideals of Hubertus Strughold.*

*The recipient of the award is selected by the Strughold Award subcommittee. This year's Hubertus Strughold Award subcommittee members were Drs. Denise Baisden, Irene Long, David McKenas, and Stanley White (Chair). Nominations for this award are made by the members of the SMB Executive Committee and by former recipients of the Hubertus Strughold Award. The nominations are submitted 90 days before the annual meeting. The award is presented at the annual business luncheon of the Space Medicine Branch.*

#### **Norman E. Thagard, M.D.**

A native of Jacksonville, FL, Dr. Thagard graduated from Paxon Senior High School in Jacksonville in 1961. He then attended Florida State University, where he received bachelor and master of science degrees in engineering science in 1965 and 1966, respectively, and subsequently performed pre-med course work. He received a doctor of medicine degree from the University of Texas Southwestern Medical School in 1977.

In September 1966, he entered active duty with the United States Marine Corps Reserve. He achieved the rank of Captain in 1967, was designated a naval aviator in 1968,

and was subsequently assigned to duty flying F-4s with VMFA-333 at Marine Corps Air Station, Beaufort, SC. He flew 163 combat missions in Vietnam while assigned to VMFA-115 from January 1969 to 1970. He returned to the United States and an assignment as aviation weapons division officer with VMFA- 251 at the Marine Corps Air Station, Beaufort, SC. As a pilot he has logged over 2,200 hours flying time, the majority in jet aircraft. He has been awarded 11 Air Medals, the Navy Commendation Medal with Combat "V", the Marine Corps "E" Award, the Vietnam Service Medal, and the Vietnamese Cross of Gallantry with Palm.

Thagard resumed his academic studies in 1971, pursuing additional studies in electrical engineering, and a degree in medicine. He is a licensed physician and prior to joining NASA, he interned in the Department of Internal Medicine at the Medical University of South Carolina. Dr. Thagard was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed the 1-year training and evaluation period, making him eligible for assignment as a mission specialist on the Space Shuttle. Now a veteran of five spaceflights, he has logged over 140 days in space. He was a mission specialist on STS-7 in 1983 aboard Challenger, STS 51-B in 1985 also aboard Challenger, STS-30 in 1989 aboard Atlantis, was the payload commander on STS-42 in 1992 aboard Discovery.

Most recently, Dr Thagard was the cosmonaut/researcher for the Russian Mir-18 mission. In the course of the 115 day Mir flight, 28 experiments were conducted. The first American astronaut to launch on a Russian spacecraft, liftoff was from the Baikonur Cosmodrome in Kazakstan on March 14, 1995. The mission culminated in a landing at the Kennedy Space Center in the Space Shuttle Atlantis on July 7, 1995.

Dr Thagard retired from the astronaut corps this year and has become Director of External Relations, College of Engineering and Visiting Professor of Engineering at Florida State University in Tallahassee, Florida. During his free time, he enjoys classical music and electronic design, and has published articles on digital and analog electronic design. Dr Thagard is a member of the American Institute of Aeronautics and Astronautics, the Aerospace Medical Association, and Phi Kappa Phi.

Dr Thagard was selected for this award in recognition of his personal participation and contribution in the conduct of extensive medical and life sciences experiments during the historic long duration mission aboard the Russian Space Station Mir. The data collected by him is a major extension of the data base gained by the United States during the three missions of Skylab. His work also helped prepare for longer duration human missions aboard the International Space Station and beyond.



**STRUGHOLD AWARD**—The Hubertus Strughold Award was presented to Norman E. Thagard, M.D., (left) by David A. Tipton, M.D., (right), President of the of the Space Medicine Branch.

#### Young Investigator Award

*The Young Investigator Award is presented to an investigator who is the first author of an outstanding paper (slide or poster session) in the area of aviation and/or space medicine presented at the current or previous scientific meeting of the Aerospace Medical Association. In addition to being the first author, the investigator must be presenting at the annual scientific meeting for the first time. The Young Investigator Award subcommittee nominates these candidates and submits them to the SMB Executive Committee which selects the recipient(s) by a majority vote. The award is presented at the annual business luncheon of the Space Medicine Branch. This year's Young Investigator Award subcommittee members were Drs. Dimetri Economos, Rainer Effenhauser, Smith Johnston, Jeffrey Myers (Chair), Philip Scarpa, and Lloyd Tripp.*

#### **Chrysoula Kourtidou-Papadeli, M.D., M.S.**

Dr. Chrysoula Kourtidou-Papadeli was awarded the Space Medicine Branch's Young Investigator Award for her paper entitled "Hypoxia Induced Alterations in EEG and Continuous Task Performance at High Altitude." The work was performed by Dr. Kourtidou during her aerospace medicine residency at Wright State University utilizing facilities and support provided by Wright-Patterson Air Force Base. Dr Kourtidou was able to demonstrate reproducible EEG changes which correlated with hypoxia in the altitude chamber at the 25,000 foot level. The findings of her research may be useful in the development of inflight crew EEG monitoring systems to help protect astronauts, military, commercial, and perhaps even private pilots. Further research into EEG monitoring may even be extrapolated to develop sleep warning devices for motor vehicle operators.

Dr. Kourtidou was totally involved in her project from inception through conclusion (see SMB AWARDS, p. 809)



**YOUNG INVESTIGATOR'S AWARD**—Chrysoula Kourtidou-Papadeli, M.D. (left) receives the Young Investigator's Award from Dr. Tipton (left) and K. Jeff Myers, M.D., Chair of the Awards Committee (right). The award was underwritten by EG&G, Inc. and the McDonnell-Douglas Corp.

## AsHFA Awards

### Sarter Receives Roscoe Award

Nadine Sarter was the 1996 recipient of the Stanley N. Roscoe Award given by the Aerospace Human Factors Association at the annual meeting in Atlanta, GA.

Dr. Sarter received her M.S. degree in experimental and applied psychology from the University of Hamburg (Germany) in 1983. In 1985, she became a research scientist with the Shiphandling and Stimulation Facility SUSAN, Hamburg Polytechnic (Germany) where she was responsible for the design, implementation and evaluation of full-mission simulation studies on the effects of ship bridge automation (e.g., ARPA, ECDIS) on mariners' workload and performance, and on crew requirements for merchant marine vessels.

In December 1994, Dr. Sarter received a Ph.D. in industrial and systems engineering from Ohio State University.

In 1988, Dr. Sarter joined the Cognitive Systems Engineering Laboratory (CSEL) at the Ohio State University where she became the lead researcher on NASA- and FAA-funded projects concerning human-automation interaction in the field of commercial aviation. She carried out field research as well as full-mission and part-task simulation studies of pilot-automation coordination on various advanced commercial "glass cockpit" aircraft. She also looked at the impact of ATC automation (e.g., VSCS, DataLink) and of new concepts for future air traffic management ("FreeFlight") on air-ground and ground-ground communication and coordination. In 1994, she was asked to serve as a technical advisor to the FAA Human Factors Team to provide recommendations for the design and operation of, as well as training for, advanced "glass cockpit" aircraft.

Currently, Dr. Sarter is an assistant professor in the Institute of Aviation at the University of Illinois in Urbana-Champaign. She also holds appointments in the Department of Psychology and in the Department of Mechanical Engineering/Industrial Engineering, and at the Beckman Institute Human Perception and Performance Group. Her fields of professional interest include human error, the evolution of automation properties/philosophies and their impact on human-machine coordination and cooperation, mode awareness, strategies of automation management, attention allocation in highly dynamic multi-display environments, and the development of new approaches to training for advanced automated cockpits. Dr. Sarter's work is grounded in the field of cognitive systems engineering which emphasizes the need for a principle-based system-oriented approach to the design and evaluation of modern technology. The goal is to integrate the constraints associated with humans, machines, and the environment in which they cooperate.

Dr. Sarter is the author or co-author of several journal papers and book chapters analyzing the reasons for, nature of, and possible countermeasures to breakdowns in human-automation cooperation and coordination. She was awarded the George E. Briggs

Dissertation Award by the American Psychological Association, Division of Applied Experimental and Engineering Psychologists for her dissertation on pilot-automation interaction on advance flight decks. In 1992, she obtained her private pilot license, and in 1994, she completed airline pilot training for the Airbus A-320, one of the aircraft under consideration in her research.

### Bagian Receives Hansen Award

James Bagian, M.D., is the 1996 recipient of the Paul T. Hansen Award for his most noteworthy contributions to the field of Aerospace Human Factors research.

Dr. Bagian received a bachelor of science degree in mechanical engineering from Drexel University in 1973 and doctor of medicine degree from Thomas Jefferson University in 1977.

During his professional career, Dr. Bagian has distinguished himself as an engineer, military flight surgeon, astronaut, civil physician, and scientist. As a NASA Space Shuttle astronaut, Dr. Bagian flew on Discovery in 1989 and Columbia in 1991. A major contributor to the U.S. Space Program, Dr. Bagian formulated and managed the design, development and testing of the current space shuttle high altitude escape/anti-exposure suit, functioned as a team leader for the design, development and testing of the present space

shuttle escape system and developed the first successful treatment for space motion sickness. Throughout his varied career activities, Dr. Bagian applied his unique mix of engineering, medical and human factors knowledge and experience to enhance aerospace systems development and crew safety, thereby contributing in large measure to the ultimate success of the U.S. Space Program.

Dr. Bagian is also an experienced aviator with over 1500 flying hours in aircraft ranging from high performance jets and high altitude research aircraft to general aviation aircraft, sailplanes and helicopters. Presently, Dr. Bagian serves as Deputy Director of Regional and State Programs, U.S. Environmental Protection Agency in Michigan, performs as an occupational medicine physician at William Beaumont Hospital and is a Pararescue Flight Surgeon in the 939th Air Rescue Wing of the U.S. Air Force Reserve, where he holds the rank of Colonel.

#### SMB AWARDS, from p. 808

and presentation. She instructed, instrumented, photographed, phlebotomized, monitored and debriefed all of the test subjects herself. The study design, coordination, logistics, data analysis, and interpretation were also hers. This degree of involvement and effort represents the highest character and spirit of the Space Medicine Branch's Young Investigator Award.

There were 88 contestants in this year's competition. The first runner up was Dr. Sven-Eric Stangerup, Gentofte University Hospital, Copenhagen, Denmark. Other finalists included: Dr. Anne Thews, Center of Internal Medicine III, University of Mainz, Germany; Yoshinori Takeuchi and Maj. Shinichi Nishibe both from the Aeromedical Laboratory, Japan Air Self Defense Force, Tokyo, Japan; Lt. P. Eric Poole, Armstrong Laboratory, Brooks AFB, San Antonio, TX; Dr. Bassam Shahin, Royal Jordanian Air Force Medical Facility, Amman, Jordan; Capt. Patrick Gillen, 375th Aeromedical Evac Sqn, Scott AFB, IL; Dr. Alain Haertig, Institute of Legal Medicine, Universite Rene Descartes, Paris, France; Dr. Katerina Neuhauser, Wilford Hall Medical Center, Lackland AFB, TX; LTC Nina Page, US Army Medical Research Institute of Infectious Diseases, Ft Detrick, MD; and Maj Lihong Kong, Institute of Aviation Medicine, Beijing, China.



**AsHFA AWARDS**—(Upper photo) Henry L. Taylor (left) of the Aerospace Human Factors Association presented the Stanley N. Roscoe Award to Nadine B. Sarter (right). (Lower photo) David J. Schroeder, Ph.D. (Left) presented the Paul T. Hansen Lectureship Award to Col. James P. Bagian (right).

## Society of USAF Flight Surgeons Awards

### Malcolm C. Grow Award

The 1995 USAF Malcolm C. Grow Award winner is Maj. Marc S. Robins from the 86th Aeromedical Evacuation Squadron, Ramstein Air Base (USAFE), Germany. He is a Board Certified Family Practitioner who completed the Aerospace Medicine Primary Course at Brooks AFB, TX, in 1992. He established and directed an ACLS training program and EMT basic and refresher courses for his base. He was the primary flight surgeon supporting aeromedical evacuation missions that resulted in the saving of numerous lives under strenuous conditions. He conducted studies demonstrating the feasibility of using pulse oximetry to determine blood pressure in high noise environments and researched the need for glucose monitoring equipment for diabetic patients involved in long aerevac flights.



**GROW AWARD**—The Malcolm C. Grow USAF Flight Surgeon of the Year for 1996 is Maj. Marc S. Robbins, USAF, MC (left), from the 86th Airlift Wing. Presenting the award is Lt. Gen. Edgar R. Anderson, Jr., USAF Surgeon General (right).

### George E. Schafer Award

The 1996 George E. Schafer Award winner for career accomplishment in the field of aerospace medicine is Brig. Gen. Robert P. Belihar. In 1970, as a newly trained flight surgeon at Homestead AFB, he took what was at that time a highly unusual and controversial step to improve the medical care received by his squadron of F-4 crewmembers. He established a small flight surgeon's clinic within the squadron and accomplished the majority of his clinical practice from this setting. This practice set the stage for what is now considered commonplace and the standard of care in flight medicine. He helped blaze the trail for today's practice of flight surgeon involvement in the flying mission by being one of the first flight surgeons to become a fully qualified "full up crewmember" in the back seat of the RF-4. Following an ophthalmology residency, he was assigned to Myrtle Beach AFB and was three times chosen as the Wing's "Red Flag" flight surgeon where he was directly responsible for saving the life of his squadron commander follow-



**SCHAFFER AWARD**—The George E. Schafer Award for Career Contributions to Aerospace Medicine was presented to Brig. Gen. Robert P. Belihar, USAF, MC (center) by Maj. Gen. George K. Anderson (left) and Lt. Gen. Edgar R. Anderson, Jr. (right).

ing an out-of-envelope ejection from an F-4. He was reassigned to Luke AFB where he developed and conducted one of the first "G-awareness" surveys in the USAF. He completed the Residency in Aerospace Medicine in 1983 and was sent to Edwards AFB where he arranged for flight surgeons to work with the Combined Test Forces on human factors issues. In 1986, he moved to Headquarters, Tactical Air Command as Chief, Aeromedical and Requirements and later became Chief, Aerospace Medicine. He laid the groundwork for the G-tolerance enhancement program, aviator contact lens program, and the development and fielding of the high contrast visor in use by combat crews today. In 1988, he became the Command Surgeon, U.S. Central Command. When Operation Desert Shield/Storm kicked off in August 1990, he remained General Schwartzkopf's principle medical advisor and directed a preventive medicine program that clearly represents one of the most successful efforts in military history. He then became the AFMPC Surgeon and developed the first Career Development guide for physicians. In July 1992, he became the Command Surgeon, AF Material Command and in August 1994 Commander, Human Systems Center.



**UNGER AWARD**—The Howard R. Unger Literary Award was presented to Lt. Col. Cesario F. Ferrer, Jr., USAF, MC (right) by Col. Steve Sterne, Commander 39th Operations Group (right). Lt. Col. Ferrer's paper was entitled "Circadian Rhythm Desynchronization in Military Deployments: A Review of Current Strategies," appearing in *Aviat Space Environ Med* 1995; 66:571-8.

## Howard R. Unger Award

The 1995 Howard R. Unger Award winner is Lt. Col. Cesario F. Ferrer, Jr. from the 39th Medical Group, Incirlik AB, Turkey. He was selected for his excellent article published in the June 1995 issue of *Aviation, Space, and Environmental Medicine* titled, "Circadian Rhythm Desynchronization in Military Deployments: A Review of Current Strategies."

## NAVY AWARDS



**LUEHRS AWARD**—The Richard E. Luehrs Memorial Award for Navy Flight Surgeon of the Year was presented to LT William P. Baugh, MC, USNR, (center left) by CAPT Donald Arthur, MC, USN (far left), VADM Harold M. Koenig, MC, USN (center right), and CAPT Conrad Dalton, MC, USN (far right)



**CARTER AWARD**—CAPT Donald Arthur, MC, USN (far Left), President of the Society of U.S. Navy Flight Surgeons, looks on as LCDR Scott A. Shappell, MC, USNR, (center left) is presented with the Sonny Carter Award by VADM Harold M. Koenig, MC, USN (center right), Surgeon General of the Navy, and CAPT Conrad Dalton, MC, USN (far right), Chair of the Awards Committee.



**MITCHELL AWARD**—CAPT Robert E. Mitchell, USN(Ret), (center left) received the first Robert E. Mitchell Award for Lifetime Aerospace Medicine Contributions. The award was presented by CAPT Donald Arthur, MC, USN (far left), VADM Harold M. Koenig, MC, USN (center right), and CAPT Conrad Dalton, MC, USN (far right).

# Navy Award Winners Named at Luncheon

Over 120 members of the Naval Aerospace Medicine community and friends of Naval Aviation gathered to attend the 1996 luncheon of the Society of U.S. Naval Flight Surgeons (SUSNFS) held May 6 at the Atlanta Hilton Hotel.

The Society was honored to host VADM Harold M. Koenig, Surgeon General of the Navy, as the featured speaker. VADM Koenig emphasized that the future is NOW, and we must be in the "fast lane" in order to successfully address the important challenges facing Navy Medicine. The Surgeon General further elaborated on three pivotal themes: bringing Navy Medicine closer to the deckplates; moving information rather than people; and re-engineering processes for designation and training, in order to make Navy Operational Medicine more responsive and efficient. Following his speech, the Society awarded VADM Koenig a plaque naming him as an honorary member of the Naval Aerospace Medicine community.

CAPT Don Arthur, outgoing SUSNFS President, introduced the newly elected Society officers. Incoming President is CAPT Bruce Bohnker. CAPT Dave Hiland was named Vice President and will succeed to the presidency next year. CDR Michael Krentz was elected Secretary-Treasurer. Others elected to the Society's Board of Governors were: Senior Member, CAPT James Fraser; and Junior Members, LCDR Richard Baney and LCDR James Black.

The luncheon was highlighted by the presentation of awards in recognition of superlative accomplishments by SUSNFS members.

CAPT James Baggett, Awards Committee chairman, first announced that CDR Jennifer Berg, Chief of Psychiatry at the Naval Aerospace and Operational Medical Institute (NAMI), was recently honored at the annual meeting of the American Psychiatric Association (APA). CDR Berg received the Military Psychiatry Division's Distinguished Early Military Psychiatrist Award, and was also named a Delegate at Large.

The 1996 SUSNFS award winners were:

## Richard E. Luehrs Award for the Operational Flight Surgeon of the Year

Nominees as the 1996 Flight Surgeons of the Year from their respective aviation communities were: 1st MAW: LT Michael Hocker, Marine Medium Helicopter Squadron 463; 2nd MAW: LT John Lavan, Marine Medium Helicopter Squadron 264; 3rd MAW: LT Michael Akin, Marine Medium Helicopter Squadron 164; AIRLANT: LT William Baugh, Composite Squadron 8; AIRPAC: LCDR J. A. Swartz, NSAF; CNATRA: LCDR Matthew A. Carlberg, Training Air Wing Five; AIRRESFOR: LT Joseph McMahon, NAS Joint Reserve Base New Orleans.

Named from among these outstanding flight surgeons, the winner of the 1996 Richard E. Luehrs Award as Operational Flight Surgeon of the Year is:

### LT William Baugh

LT Baugh was characterized as a "one man Caribbean task force." He provides care for two squadrons, in addition to service as base

flight surgeon for Naval Station Roosevelt Roads. Regularly taking port and starboard MEDEVAC watch, he has made 19 "life or limb" MEDEVACS since assignment to Puerto Rico. He also serves as hyperbaric medical officer and hospital emergency room provider. He even makes house calls as part of sick call follow up. He wrote the VC-8 instruction for management of pregnant squadron members. As a disaster team member, LT Baugh participated in damage evaluation missions for two hurricanes, and received the Navy Achievement Medal for his work on Naval Hospital hurricane preparedness. He volunteers for service at the San Juan VA Center Department of Dermatology.

## Sonny Carter Memorial Award

### LCDR Scott Shappell

This award is given to the member of the Naval Aerospace Medicine community who has done the most to promote cooperation and teamwork between flight surgeons, physiologists, and experimental psychologists, while making significant contributions to the health and safety of operational Naval forces. Sonny Carter was a superlative Naval officer, medical officer, flight surgeon, astronaut, and outstanding individual whose untimely death in 1991 deprived the community of a stellar role model. This year's award was given to LCDR Shappell for his exceptional accomplishments as a researcher, teacher, and author of 75 manuscripts in such diverse areas as air crew fatigue, aviation safety, psychopharmacology, and health promotion. LCDR Shappell is currently assigned to Commander, Naval Air Forces Atlantic, as Aeromedical Safety Officer and Aviation Experimental Psychologist.

## Ashton Graybiel Award

### CAPT Andrew Markovits and CDR Steven O'Connell

The Ashton Graybiel Award is given to the member of the Naval Aerospace Medicine community who has authored the most significant scientific publication during the preceding year. The award is named in honor of one of the fathers of aviation medicine research. The late Dr. Graybiel was one of only two flight surgeons to be inducted into the Naval Aviation Hall of Fame. This year's award was given to CAPT Markovits and CDR O'Connell for their article, "The Fate of Eyewear in Aircraft Ejections," published in *Aviation, Space, and Environmental Medicine*. CAPT Markovits recently retired after a distinguished career as Chief of Ophthalmology at NAMI.

## Lifetime Achievement in Naval Aerospace Medicine

This is a new award inaugurated by the Society. The first recipient is the only Naval Flight Surgeon whose career spans the dawn of modern Aerospace Medicine from World War II to the Space Age. He is universally acknowledged as the consummate clinician, the arduous researcher, the tireless teacher, and

outspoken proponent for the humanitarian care of our service population and their families. In honor of his outstanding aeromedical career, the Society proudly designated its first Lifetime Achievement Award to:

### CAPT (Ret) Robert E. Mitchell

From henceforward the award will be known as "The CAPT Robert E. Mitchell Lifetime Achievement in Aerospace Medicine Award."

During his 43 years of active service and 6 years of emeritus service, CAPT Mitchell accomplished the following:

He pioneered the 1000 Aviator and Repatriated Prisoner of War studies, both of which are ongoing today. CAPT Mitchell remains active in research programs, and regularly provides sage advice and assistance to the Special Studies programs at NAMI.

CAPT Mitchell's Navy career included multiple operational tours with Navy and Marine Corps units, and two tours as a Commanding Officer: first at Naval Hospital in Rota, Spain, and second at the Naval Aviation Medical Research Laboratory in Pensacola, FL. From this remarkable career, he has produced over 40 publications and presentations.

The SUSNFS Lifetime Achievement Award is the latest of a host of honors bestowed on CAPT Mitchell. His military awards include the Legion of Merit, and Bronze Star with Combat V. He has received the Aerospace Medical Association's Theodore C. Lyster Award for "Outstanding Achievements in the General Field of Aerospace Medicine." He is one of only five honorary members of the Vietnam Prisoner of War Association, and the only physician honorary member of the Golden Eagles, the Pioneer Naval Aviators Association. In 1991 Dr. Mitchell was designated an Honorary Naval Aviator by the Chief of Naval Operations. He remains the only flight surgeon to hold that honor.

The awards luncheon closed with one last special recognition. Occasionally over the course of several tours an individual makes contributions that are not immediately recognized or that have far flung effects on Naval Aviation Medicine. Often these contributions are made at great personal sacrifice and expenditure of time and energy, above and beyond that expected or required. In recognition of such achievement, CAPT Robert E. Hain, Commanding Officer of NAMI, presented a set of gold Flight Surgeon wings to:

### CAPT Conrad I. Dalton

CAPT Hain cited CAPT Dalton for his extraordinary sustained achievement as the Aerospace Medicine Specialty Leader and Director of the Aerospace Medicine Division of the Bureau of Medicine and Surgery from 1993-96. During his tenure, CAPT Dalton set the benchmark for honesty, integrity, commitment, and expertise. He led the way in supporting the entire spectrum of operational medicine, directly helping to ensure that the Fleet and Fleet Marine Force ultimately receive what they need from the Navy Medical Department, even in the face of constantly changing requirements. CAPT Dalton is honored and respected in his own community and among our sister services as an outstanding Naval Officer who will always do what is right.