

# Aerospace Medicine Program Achieves Milestone

By Robin Suits

As the Miami Valley celebrates the centennial of the invention of powered flight, another milestone in aviation history has been achieved here this year. Wright State University's Aerospace Medicine Residency Program, the longest running civilian training program of its kind in the world, marked its 25th anniversary.

The program has graduated more than 100 physicians whose medical and scientific contributions to aviation and space programs worldwide have been vital in ensuring the continued progress of human endeavors in air and space. The majority of the medical officers at NASA's Johnson and Kennedy Space Centers are Wright State alumni, and graduates have made major contributions to the health and functional well being of pilots, crewmembers, and commercial airline passengers, through leadership positions within the Federal Aviation Administration and its sister agencies around the world.

The program has attracted physicians from more than 20 countries. International graduates include the (retired) chief of the medical division of the Japanese space agency and his staff, a flight surgeon for the European Space Agency, the medical directors of four major international airlines, several air force flight surgeons (including officers in South Korea, the United Arab Emirates, Singapore, and Thailand), and the head of a large research laboratory in Brazil.

Since the Mercury Program, physicians have been integrally involved in NASA's human space flight efforts, and for the past

two decades, Wright State graduates have been among them. "Flight docs" take part in astronaut selection and training, in their physical health care and psychological support, and in the monitoring of the environment on board spacecraft. For example, when Senator John Glenn returned to space in 1998, he received around-the-clock medical coverage from NASA flight surgeons who graduated from the Aerospace Medicine Program—Denise Baisden, M.D., and Phil Stepaniak, M.D.—and two Japanese physicians who trained at Wright State provided support for Japanese astronaut Chiaki Mukai, M.D., during the STS-95 mission.

Wright State graduates Mike Barratt, M.D., David Ward, M.D., Gaylen Johnson, M.D., Terry Taddeo, M.D., and Pat McGinnis, M.D., served as NASA flight surgeons during international missions of the Russian space station Mir. Besides overseeing the astronauts' health and the life support situation on board Mir, they traveled to Russia to assist the astronauts during training and served as important communicators and facilitators during their Mir residencies.

Dr. Barratt also worked with his counterparts at the Gagarin Cosmonaut Training Center and Institute of Biomedical Problems as medical operations lead for the International Space Station. In 1998, he was named lead crew surgeon for the first expedition crew to the space station, and in 2000, he was selected as an astronaut candidate.

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Several graduates have maintained ties to Wright State by serving as clinical faculty for the program. They include Irene D. Long, M.D., chief medical officer at Kennedy Space Center; Jeffrey R. Davis, M.D., director of Space and Life Sciences at Johnson Space Center; Brig. Gen. Annette Sobel, M.D., a national security analyst at Sandia National Laboratories and director of intelligence for the Air National Guard Bureau, who was recently named director of homeland security for the state of New Mexico; and Melchor J. Antuñano, M.D., director of the Civil Aerospace Medical Institute, who is directly responsible for the administration of the FAA Office of Aviation Medicine's programs in aeromedical certification, aeromedical education, aeromedical research, human factors research, and occupational health services.

A component of Wright State's Department of Community Health, the Division of Aerospace Medicine offers an M.S. degree in aerospace medicine as well as residency training. The residency program provides all of the ACGME-required training to establish eligibility for the board examination for certification by the American Board of Preventive Medicine for the specialty in aerospace medicine. A minimum of one ACGME-accredited clinical year (PGY-1) in a recognized direct primary care specialty must be completed prior to entering the residency program. The ideal candidate will have additional broad experience in fields such as emergency medicine, internal medicine,

family practice, or another clinical field. U.S. Citizenship is required for admission to the residency but not for the master's program.

Program faculty and students engage in a wide range of research in aerospace medicine and produce theses covering subjects like G-induced loss of consciousness (G-LOC), spatial disorientation, in-flight medical emergencies, and space flight-induced orthostatic intolerance. Residents also complete several clinical rotations, including one in flight medicine, ophthalmology, and ENT at Wright-Patterson Air Force Base; forensic medicine at the Montgomery County Coroner's Office; aircraft accident investigation with the National Transportation Safety Board and FAA Civil Aerospace Medical Institute; aerospace medicine and occupational health at Kennedy Space Center; and hyperbaric medicine at Brevard Regional Hyperbaric Center in Florida.

In an oral history recorded for the Mir-Shuttle program as it came to an end, Dr. Barratt described life as a flight surgeon at the Johnson Space Center as "a wonderful conglomeration of everything that most of us really enjoy." He had, he said, "the second best job at JSC, the first being the astronauts." Thanks to his specialized training, experience, and professional dedication, he'll probably get the chance to test his theory as part of the astronaut class of 2000.