

# SPACE MEDICINE BRANCH REPORT

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## President's Message

As your President for 2002-2003, I wish to express my gratitude to you all for giving me the opportunity to serve the Space Medicine Branch in this capacity. I would like to thank all my fellow officers: Vice-President—Dr. Annette Sobel, Secretary-Treasurer—Dr. Dwight Holland, Members-at-Large—Drs. Volker Damann, Patrick McGinnis, Joe Dervay, Alan Moore, Jim Collier, Clarence Jernigan, and the three former presidents—Drs. Robin Dodge, Phil Scarpa, and Mel Antuñano, who all are greatly supporting me in this role. Since I am not from North America, I recognize that good collaboration with not only my fellow officers, but also with all members of the SMB will be very important to fulfill my president's tasks this year.

I am looking forward to an exciting upcoming year in the SMB and also in the space program, especially with the International Space Station (ISS). Currently, the Expedition-5 crew are onboard the ISS from the end of last May, in which Dr. Peggy Whitson and two Russian cosmonauts are working and living. Dr. Peggy Whitson is not only an astronaut but also a research scientist of Human Adaptation and Countermeasures Office of Johnson Space Center and we look forward to her contributions for space medicine on the ISS.

Using President's privilege, I would like to mention to you a bit of the space medicine activities in Japan and about the Japanese Space Agency called NASDA. Space medicine activity in Japan had its beginnings in the early 1960's when Prof. Hisashi Saiki established the Space Medicine Laboratory at the Jikei Medical School from which I graduated at 1968. At that time, I was a medical student who was very much interested in this area. After I graduated medical school, I joined the Space Medicine Laboratory and got my first job, which was as a special subject for 0-G simulation study using water immersion. I experienced a typical fluid shift with dehydration during water immersion. I still remember that it was a very exhausting and tough job. Later, actual space medicine study using spaceflight data started in the early 1990's when Japan joined NASA in its first space shuttle flight mission called Spacelab-J. Since then, NASDA has continued funding for space research to investigators in Japan where lots of Japanese investigators have participated not only in actual spaceflight research but also ground research such as simulation studies and animal studies. However, the field of space medicine is still a small area in Japan so we are still looking for more opportunities to conduct space medicine studies.

The National Space Development Agency of Japan (NASDA) was established on October 1, 1969, under the National Space Development Agency Law, to act as the nucleus for the development of space and promote the peaceful use of space. NASDA is responsible for the following tasks, based on the Japanese Space Development Program enacted by the Prime Minister:

1. Development of satellites (including space experiments and the space station) and launch vehicles, launching and tracking the craft.

2. Development of methods, facilities and equipment required for the above.

In 1985, the manned space program in NASDA began when the first three Japanese astronauts were selected for the Spacelab-J mission. At that time, I was the only physician in NASDA when I joined as a flight surgeon caring for the astronauts. Since then, flight medicine activity in NASDA has been gradually growing and is now in the Medical Research and Operations Office, which currently has eight full-time physicians and several supporting staff. There are also currently eight Japanese astronauts in NASDA from whom four Japanese astronauts have already flown in space and three have been selected for the International Space Station. All members in this office are working hard not only to take care of the health of these Japanese astronauts but also to coordinate with our ISS international partners to assist in the conduct of operational space medicine research.

NASDA will contribute to the ISS by developing the experimental module named "Kibo." The Kibo module will consist of four systems: the pressurized module, the experiment logistics module, the exposed facility, and the remote manipulator. We are relying on leaving future manned space exploration to the Kibo which means "hope" or "a wish" in Japanese. These systems are currently scheduled to be launched from 2004 to 2005. As you know, the ISS that is now under construction will enable humans to stay in space. Astronauts from various countries will live there for long periods of time to conduct research of various experiments. Japan is one of the key members in the International Space Station project. In the space environment, it will be possible to carry out new research and development, which currently cannot be conducted on Earth. The ISS has great potential, not only as a base for investigating conditions to allow people to dwell in space, but also for conducting research on life sciences and for paving the way for humans to explore deeper into space. Utilization of the space environment could also help scientists better understand the aging process as well as intractable diseases such as diabetes, thus accelerating progress in medical care. Therefore, appropriate coordination with all ISS international partners is essential in order to utilize the ISS effectively. I believe that the ISS program will provide a basic step to an interplanetary manned spaceflight as well as commercial spaceflight (space tourism) in the 21st century. Although the budget for the ISS program is getting tighter and tighter, we must have more practical and effective countermeasures and medical sciences for these purposes. Therefore, the role of the SMB and its members is becoming increasingly important. SMB members consist of not only the U.S. but also other various countries so that this group is truly a worldwide talented organization. We need an international

collaboration for this purpose of space medicine. I hope that all of you will recognize this and conduct space medicine research for the future space program.

We are currently in the process of planning the next meeting in San Antonio and welcome your comments, suggestions and recommendations. If you have any, please contact me at sekiguchi.chiharu@nasda.go.jp and/or Dwight Holland, our Secretary-Treasurer, may be contacted at Dwightholl@aol.com. We are looking forward to a fascinating meeting in San Antonio and I hope to see each of you there.

I would like to thank you again for the opportunity and honor to serve as your President. I am looking forward to an exciting and productive year.

**Chiharu Sekiguchi, M.D.**  
2002-2003 President

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## SPACE MEDICINE BRANCH YOUNG INVESTIGATOR AWARD

The Space Medicine Branch's 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 if their presentation to the chair of the Young Investigator Award sub-Committee. To be considered for the 2003 award, manuscripts must be submitted by the end of March, 2003 to:

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