



NSBRI Explorer

National Space Biomedical Research Institute • July 2005

Participation in Human System Working Group

NASA's Human System Working Group brings together leadership from the Exploration Systems Mission Directorate, Space Operations Mission Directorate and the Office of the Chief Health and Medical Officer to coordinate research and operational activities supporting human spaceflight for exploration. The group is chaired by Jeffrey R. Davis, M.D., Director, Space Life Sciences, at NASA Johnson Space Center. NSBRI is represented by Jeffrey P. Sutton, M.D., Ph.D., Institute Director. ♦

Pilot Tissue-Sharing Program Initiated

Marcelo E. Vazquez, M.D., Ph.D., NSBRI/NASA Space Radiation Liaison (Brookhaven National Laboratory), initiated a pilot tissue-sharing program that provides access to tissue from mice irradiated with iron ions at Brookhaven for his NSBRI-funded project.

The program is open to all NSBRI and NASA-funded investigators. The radiation run for Vazquez' project occurred June 21. Tissue specimens can be requested and will be available one and six months after exposure. For more information on this pilot program, contact Vazquez at vazquez@bnl.gov. ♦

Earth Benefits of Space Research Showcased on Capitol Hill

NSBRI held a research, technology and education demonstration on Capitol Hill in March. The event highlighted the Earth benefits of NSBRI's program addressing the health and medical barriers to long-duration space exploration. The table-top, interactive exhibits covered bone health, expanding medical care, real-time radiation risk assessment, combating sleep loss and shift work problems, computer recognition of stress, and educational activities for the next generation of explorers. Sen. Kay Bailey Hutchison delivered remarks at the event attended by Congressional members and staff, the NSBRI Board of Directors, and leadership from NASA Headquarters. ♦

Education Program holds Evaluation Exploration Workshop

Members of the Education and Public Outreach Program attended an Evaluation Exploration Short Course in Houston, May 9-11. The workshop, conducted by the American Physiological Society, focused on metrics for evaluation of educational products and programs. The emphasis on improving evaluation mechanisms is part of the NSBRI education program expansion and was strongly encouraged by the External Advisory Council. ♦

Graduate Education Program RFP Released

NSBRI is soliciting proposals for a Graduate Education Program to broaden students' academic and career skills in space life science. The Request for Proposals, [NSBRI-RFP-05-02](#), contains detailed program and application information on this open solicitation. Proposals are due September 14. ♦

Summer Internship Program

Seven interns will work at NASA Johnson Space Center for 10-to-15 weeks through NSBRI's Summer Internship Program. Open to undergraduate, graduate or medical students, the program pairs students with mentors working on projects such as pharmacology, regulation of skeletal muscle mass/protein synthesis, cardiovascular regulation, balance and mobility after space flight, and the effects of virtual-reality training on postural control and eye-hand coordination. The interns represent six universities – Dartmouth College, Durham University, Johns Hopkins University, University of Houston, University of Minnesota, and University of South Alabama. ♦

Team Name Changes to Sensorimotor

The Neurovestibular Adaptation Team, headed by Team Leader Charles Oman, Ph.D., (MIT), has been renamed the Sensorimotor Adaptation Team. This name better reflects the scope of the countermeasure development activities within the team. ♦

Sutton Testifies on Benefits of Human Spaceflight

Jeffrey P. Sutton, M.D., Ph.D., NSBRI Director, spoke at the Senate Subcommittee on Science and Space on April 20 during a hearing on the Benefits of Human Spaceflight: International Space Station (ISS) and Beyond. The subcommittee heard testimony on ISS research benefits and future opportunities for scientific research and applications that support exploration and other national missions. The Chairperson is Sen. Kay Bailey Hutchison of Texas and the Ranking Member is Sen. Bill Nelson of Florida. Both Senators placed Sutton on their witness lists. His remarks were well received and generated additional questions from the subcommittee members. ♦

Recent Publications

Buckey, J. C., D. A. Knaus, D. L. Alvarenga, M. A. Kenton, and P. J. Magari. Dual-frequency ultrasound for detecting and sizing bubbles. *Acta Astronaut* 56(9-12):1041-7, 2005. (Technology Development Team) ♦

Carter, J. R., N. T. Kupiers, and C. A. Ray. Neurovascular responses to mental stress. *J Physiol* 564(Pt 1):321-7, 2005. (Cardiovascular Alterations Team) ♦

Eto, Y., H. Yamada, J-H. Shin, D. A. Agler, H. Tsujino, J-X. Qin, G. Saracino, N. L. Greenbert, J. D. Thomas and T. Shiota. Automated mitral annular tracking: a novel method for evaluating mitral annular motion using two-dimensional echocardiography. *J Am Soc Echocardiogr* 18(4):306-12, 2005. (Smart Medical Systems Team) ♦

MacLeish, M. Y., N. P. Moreno, W. A. Thomson, D. J. Newman, P. J. Gannon, R. B. Smith, J. J. Denton, R. K. James, C. Wilson, M. Sognier, and D. L. Illman. Communicating bioastronautics research to students, families and the nation. *Acta Astronaut* 56(9-12):773-82, 2005. (Education and Public Outreach Team) ♦

The June issue of *Aviation, Space, and Environmental Medicine* [76(6 Suppl)] entitled New Directions in Spaceflight Behavioral Health: A Workshop Integrating Research and Application featured eight articles by members of the Neurobehavioral and Psychosocial Factors Team. ♦

Reid, M. Response of the ubiquitin-proteasome pathway to changes in muscle activity. *Am J Physiol Regul Integr Comp Physiol* 288(6): R1423-31, 2005. (Muscle Alterations and Atrophy Team) ♦

Zhong, Q., S. Sridhar, L. Ruan, K. H. Ding, D. Xie, K. Insogna, B. Kang, J. Xu, R. J. Bollag, and C. M. Isales. Multiple melanocortin receptors are expressed in bone cells. *Bone* 36(5):820-31, 2005. (Bone Loss Team) ♦

Accolades

Alfred Goldberg, Ph.D., Muscle Alterations and Atrophy Associate Team Leader (Harvard Medical School), was elected to the American Academy of Arts and Sciences and was invited to give one of the monthly Nobel Lectures at the Karolinska Institute in Stockholm. ♦

The research of **Ann Kennedy, Sc.D.**, Immunology, Infection and Hematology Team Leader (University of Pennsylvania School of Medicine), was highlighted in the Featured Investigator Column of NASA's Space RAD Health Newsletter. ♦

JoAnne Lupton, Ph.D., Nutrition, Physical Fitness and Rehabilitation Team Leader (Texas A&M University), is President-Elect of the American Society for Nutritional Sciences, the professional organization for nutrition research. She will become President in 2006. ♦

Jeffrey P. Sutton, M.D., Ph.D., NSBRI Director, received the President's Special Citation from the Society of NASA Flight Surgeons. The Society is an affiliate of the Aerospace Medical Association. ♦

In Memoriam

James E. "Jim" Cooper, NSBRI Director of Finance, a dedicated, highly competent, and beloved member of the NSBRI Headquarters Office, died on April 10. He is greatly missed. ♦

Calendar Update

Board of Scientific Counselors Meeting
July 26, Indianapolis, Ind.

External Advisory Council Meeting
September 7-8, Houston, Texas

Board of Directors Meeting
September 22, Houston, Texas ♦