



THE GEORGE WASHINGTON UNIVERSITY

THE ELLIOTT SCHOOL
OF INTERNATIONAL AFFAIRS

SPACE POLICY INSTITUTE

SPRING 2012 NEWSLETTER

Space Policy Institute Holds Symposium on Suborbital and Small Satellite Missions in Cooperation with Universities Space Research Association

There has been increasing interest within the university community regarding the potential research and educational advantages of small satellites and suborbital missions. In response to this interest, the Space Policy Institute and the Universities Space Research Association (USRA) held a symposium on March 22 to discuss small satellite missions and suborbital research and to discuss how research and education objectives can be met at lower cost and on a faster schedule compared to conventional space science missions. The symposium featured a number of distinguished speakers including: Dr. Mason Peck, Chief Technologist, NASA; Mr. Robert Robinson, Program Manager, Geospace Section, National Science Foundation; Mr. Jason Crusan, Chief Technologist, Human Exploration and Operations, NASA; Dr. Therese Moretto Jorgensen, Program Director, Geospace; Dr. James Cutler, Assistant Professor, University of Michigan; Mr. David L. Pierce, Chief, Balloon Program Office, NASA; Dr. Webster C. Cash, Jr., Professor, University of Colorado at Boulder; Mr. Richard Pournelle, Senior Vice President of Business Development, NanoRacks; Dr. Alex Saltman, Executive Director, Commercial Spaceflight Federation; Mr. Bruce Yost, Program Manager, Office of the Chief

Technologist, NASA; Dr. Thomas Zurbuchen, Chair, Council of Institutions, USRA; and Dr. Frederick A. Tarantino, President and CEO, USRA. Copies of the presentations can be found on the 'events' page at the SPI website along with a summary of the symposium.

GPS Debates on Capitol Hill

Dr. Scott Pace testified before the House Subcommittee on Aviation, Transportation and Infrastructure on February 8, 2012 on issues associated with improving the nation's aviation satellite-based Global Positioning System infrastructure. He was part of a panel of government and industry witnesses concerned with aviation.



"There have been and continue to be many policy and legal risks for GPS. The most serious threats, however, may not be to GPS itself but to the spectrum environment upon which it depends."

His testimony focused on the need to protect the radio frequency spectrum used by GPS from terrestrial wireless broadband communications while implementing modernized GPS signals.

The testimony can be found on the SPI website under 'news'.

SPI Collaborates with NASA for Women, Innovation and Aerospace Symposium

As part of Women's History Month, the Space Policy Institute worked with NASA to hold a full-day symposium entitled "Women, Innovation and Aerospace" on March 8, 2012. Attendees included early career professionals, as well as middle school girls interested in science and technology topics. They heard from senior women in government such as Deputy NASA Administrator Lori Garver (an Elliott School alumna) and the first US woman to walk in space, Kathryn Sullivan. They also had the opportunity to engage in small breakout sessions on mentoring and career paths. The symposium concluded with a question and answer session with NASA Administrator Charles Bolden.

Professor Hertzfeld Gives Lectures Across the U.S. and Abroad and Coaches the GW Space Law Moot Court Team

In January, Professor Henry Hertzfeld led a workshop in Brussels at the European Commission (DG for Enterprise and Innovation) on the relevance of GNSS technology for the economy. He also returned to the U.S. Industrial College of the Armed Forces to deliver a lecture to the Space Industry Study Program on International Space Law. In addition, he delivered a legal lecture at the

Aerospace Corporation in El Segundo, CA and was a panelist at the American Bar Association's Forum on Aviation and Space Law.

In March the GW Space Law Moot Court Team, coached by Professor Hertzfeld, competed in the North American Round of the Manfred Lachs International Competition and finished in 2nd place out of the 13 school participating. Professor Hertzfeld also released a pre-publication volume entitled "A Guide to Space Law Terms". This draft version can be accessed at: <http://swfound.org/a-guide-to-space-law-terms> (Password: DraftVersion1). All students and alumni are invited to preview this guide and comments and suggestions are welcome.



From Left to Right, Patrick Rigney, Jessica Russo, Rachel Heflin, Professor Hertzfeld

Finally, Professor Hertzfeld continues to work on space liability issues and is conducting a study of the changing structure of the space sector and of the resultant impacts on the space industrial base.

Professor Ehrenfreund Continues to Produce Results with O/OREOS Project

Professor Pascale Ehrenfreund continued her task as Project Scientist for the O/OREOS (Organism/Organic Exposure to Orbital Stresses) Flight Project developed by NASA-Ames Research Center's Small Spacecraft Division. In addition to her work on the O/OREOS project, Professor Ehrenfreund was elected into the Framework Program (FP7) Space Advisory Group of the European Commission and started her four-year term in January 2012. She also serves on the Subcommittee on Horizon2020-Space.



Professor Ehrenfreund moderated the Human and Robotic Exploration: A COSPAR Perspective Panel at the Global Space Exploration Conference 2012

Professor Ehrenfreund also attended the ISS Symposium 2012: "Research in space for the benefit of humankind" in Berlin and participated in the Roundtable discussion – "Space Technology and Astrobiology". She chaired the Human and Robotic

Exploration Science Panel at the May 2012 Global Space Exploration Conference in Washington, DC. Sponsored by the International Academy of Astronautics (IAF) and the American Institute of Aeronautics and Astronautics (AIAA).

In April 2012, Professor Ehrenfreund participated in the organization of the very successful bi-annual Astrobiology Science Conference in Atlanta, Georgia. She published a review of the COSPAR Panel on Exploration "Toward a Global Space Exploration Program: A Stepping Stone Approach", in *Advances in Space Research* in January 2012 and supported the organization of the annual COSPAR conference to be held in July 2012, in Mysore, India

Dr. Logsdon Concludes Book Tour for *John F. Kennedy and the Race to the Moon*

Professor Emeritus John Logsdon recently concluded a guest speaking and book signing tour for his book *John F. Kennedy and the Race to the Moon*. His tour included appearances at the Hayden Planetarium of the American Museum of Natural History in New York, the Space Studies Program of the International Space University in Graz, Austria, and the European Space Policy Institute in Vienna, Austria. Professor Logsdon travelled to Herzliya, Israel where he was a featured speaker at the 7th Ilan Ramon Space Symposium. Finally, Professor Logsdon authored a chapter entitled "The 'Survival Crisis' of the U.S. solar system exploration program" for a book on planetary

exploration to be published in late 2012.

New Space Medicine Course Helps Expand SPI's Curriculum

A new special topics course, *Introduction to Aerospace Medicine*, was offered for the first time at GW and was taught by Dr. Kris



Lehnhardt, an emergency physician on the faculty of the George Washington University School of Medicine. This course was taught to a mixed class of graduate students from the Elliott School, the Medical School, and the School of Engineering and Applied Sciences. The course offered many distinguished guest speakers including Miguel Lopez-Allegria, a NASA Astronaut who holds the record for the longest American spaceflight (215 days) aboard the International Space Station. The students were able to gather great insight of the technical and policy issues of space medicine.

SPI Hosts Visiting Scholars

The Space Policy Institute hosted another set of international scholars this past winter and spring. The scholars came from all over the globe to study at the Space Policy Institute and to conduct their own research. This spring, the Institute hosted Chris Gilbert, previously with EADS Astrium, Zhang Ming with the Institute of Asia-Pacific Studies at the Shanghai Academy of Social Science, as well as Keiichi Anan from the Japanese Ministry of Education, Culture, Sports, Sciences and Technology.

SPI and the George Washington Space Society Hosts Guest Speaker Series

SPI and the George Washington Space Society continued their long-running guest speaker series. Mr. Paul Shawcross, the NASA examiner within the Office of Management and Budget spoke to SPI students about creating a budget for NASA and answered questions about the budgetary process. SPI students were guests at several Washington Space Business Roundtable luncheons where they were able to hear John Celli, from Space Systems Loral, speak on the commercial space market and House Representative Donna Edwards who spoke about the importance of STEM education and how space can help encourage more students to pursue training in STEM subjects.

SPI Alumna begins work at Marshall Space Flight Center

SPI Alumna Tabitha Smith was awarded funding to help conduct research as part of the DARPA 100-year starship project. Currently, she is in Huntsville, Alabama where she is working with a Nuclear Test Reactor Element Environmental Simulator at the NASA Marshall Space Flight Center. She is studying the Saturn V F-series engine and working on several nuclear test reactor projects.

Space Policy in the News

In the past several months you may have heard a member from the Space Policy Institute in the media. The

Institute was cited extensively as an expert source in television, radio, and print media. SPI professors were seen on television (Associated Press, C-SPAN, Icelandic Broadcasting Service, Fox News, Chanel 9 (Washington, DC local), and NHK PBS); heard on the radio (National Public Radio, TBS eFM (Seoul), KPCC, Radio Australia, Radio Free Asia, the Kojo Nnamdi Show, KCRW, NPR's Marketplace; seen on the Web (space.com, Global Post, Voice of America Korea, 38North.org, Radio Free Europe/Radio Liberty); read in magazines like *Science*, *Flight International*, *Scientific American*, *Congressional Quarterly*, *Via Satellite*, *IEEE Spectrum*, *Harvard International Review*, *Aerospace America*, and *Popular Science*; or newspapers such as *Stars & Stripes*, *Wall Street Journal*, *Washington Post*, *National Geographic*, *Politico*, *USA Today*, *Space News*, *New York Times*, *Associated Press*, *Los Angeles Times*, *Denver Business Journal*, *Bloomberg News*, and *National Geographic News*. International coverage included *Respekt* (Prague), Associated Press (China), German Press Agency, Kyodo News (Japan), *The Hindu* (India), *Global Times* (China), *Sunday Telegraph* (UK), and *New Scientist* (UK).

News from the Director



During the Spring semester, I have been busy giving numerous talks and attending a wide variety of symposia, and conferences.

Locations have included NASA, the

Aerospace Corporation, the National Spectrum Managers Association, the Washington Space Business Roundtable, Secure World Foundation, and the U.S. Telecommunications Training Institute. I have been engaged in technical, regulatory and policy debates involving protection of radio frequency spectrum used by the Global Positioning System. The debates have been primarily domestic, involving proposals for high-power broadband systems adjacent to GPS. Of course, decisions about GPS in the United States have worldwide impact and there has been close international interest in U.S. developments.

I have also been working with the Department of State and the Secure World Foundation as part of Track 1.5 and Track 2 efforts on improving space situational awareness and space sustainability. This involves participation in formal and informal international discussions at the UN Committee on the Peaceful Users of Outer Space and elsewhere on alternative international policies and regulations. I serve as a US member of a UN expert group contributing to a study on the long-term sustainability of the space environment. The US election season is in full swing and this summer and fall will likely see additional opportunities to comment and provide analysis on the future of US space policy and international engagement.

Please visit us on the web at:

www.gwu.edu/~spi

Alumni: we are looking to update our records. Please contact the Space Policy Institute if you have a new e-mail address.

**Space Policy Institute
Elliott School of International Affairs
1957 E Street NW, Ste. 403
Washington, DC 20052
202.994.7292
spi@gwu.edu**

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