THE GEORGE WASHINGTON UNIVERSITY
THE ELLIOTT SCHOOL OF INTERNATIONAL AFFAIRS

SPACE POLICY INSTITUTE

FALL 2011 & WINTER 2012 NEWSLETTER

Space Policy Institute Holds Symposium on Space Transportation Policy and Market Risks

In anticipation of a forthcoming national space transportation policy statement, the Space Policy Institute held a symposium on November 16 to discuss the many policy, technical, and market risks facing the space launch industry. Participants observed that the United States and the U.S. launch industry were comparable to a car sliding on black ice at night—not knowing whether it would regain traction or hit an unidentified obstacle. This metaphor was prompted by numerous uncertainties that reflect conflicting management, technical and budgetary issues at all levels of government and consequently the ability of the private sector to make rational decisions. The symposium featured a number of distinguished speakers including: Mr. Brett Lambert, Deputy Assistant Secretary of Defense for Acquisition for the DoD; Mr. Daniel L. Dumbacher, Assistant Associate Administrator, Human Exploration Capabilities, NASA; Mr. Michael Gass, President and CEO, United Launch Alliance; Mr. Kenneth Lee, Senior Vice President, Space Systems, Intelsat; Mr. John Schumacher, Vice President for Space, EADS North America; Ms. Courtney Graham, Associate General Counsel, NASA; Mr. Jim Chilton, Vice President and Program Manager, Exploration Launch Systems, Boeing Company; Mr. Charlie Precourt, Vice President and General Manager, Space Launch Systems, ATK; Mr. Brendan Curry, Vice President, Space Foundation; Mr. Clayton Mowry, President, Arianespace; Mr. Jim Maser, President, Pratt & Whitney Rocketdyne Inc.; Mr. Jay P. Penn, Engineer, Launch Systems Division, Aerospace Corporation; Ms. Julie Van Kleeck, Vice President, Space Programs, Aerojet; Dr. L. Dale Thomas, Associate Center Director, Marshall Space Flight Center; Dr. Michael Hawes, Director, Human Space Flight Programs, Lockheed Martin; and Mr. Richard Dunn, Former General Counsel, Defense Advanced Research Project Agency. Copies of the presentations can be found on the 'events' page at the SPI website along with a summary of the symposium.

Dr. Pace Testifies on Capitol Hill

Dr. Scott Pace testified before the U.S. House of Representatives Committee on Science, Space, and Technology on September 8 regarding the proposed LightSquared wireless broadband network. He stated that:

"The technical evidence gathered to date clearly shows that the LightSquared network poses an

unacceptable interference threat to all GPS users and especially high-precision scientific users of GPS*."* Dr. Pace's full remarks are on the 'events' page at the SPI website.

Dr. John Logsdon Earns Awards for his Book *John F. Kennedy and the Race to the Moon*

Professor Emeritus John Logsdon's recent book, *John F. Kennedy and the Race to the Moon,* was selected as the 2011 winner of the American Institute of Aeronautics and Astronautics Gardner-Lasser Aerospace History Award and co-winner of the American Astronautical Society Eugene M. Emme Astronautical Literature Award. Dr. Logsdon gave a book talk and signed copies of the study in September at the James Baker Institute of Rice University and led a workshop on the teaching of space history for 4th-12th grade teachers in Madison County, Idaho. The workshop was sponsored by the New York-based Gilder Lehrman Institute for History.

Dr. Henry Hertzfeld Authors a Paper, a Book Chapter, and a Prototype Glossary of Space Law Terms.

In October, Professor Hertzfeld attended the International Astronautical Congress (IAC) in Cape Town, South Africa and presented a paper based on his recently finished NASA study on "Space as a Global Utility." The study analyzed different metrics that show society's trends regarding its reliance on space applications.

Professor Hertzfeld, with the assistance of former student Raymond Jones, authored a chapter on export controls in a new book, *Outer Space in Society, Politics and Law*, (Brunner & Soucek, editors). With the assistance of Liana Yung, a recent graduate of the GW Law School, he has developed a draft glossary of space law definitions to aid practicing attorneys as well as policy students who are not lawyers.

Dr. Pascale Ehrenfreund has Success with NASA's O/OREOS Spacecraft

Professor Pascale Ehrenfreund, project scientist for NASA's Organism/Organic Exposure to Orbital Stresses (O/OREOS) spacecraft celebrated with her team the receipt of a NASA Group Achievement award and the one-year anniversary of spacecraft operations. O/OREOS is the first nanosatellite to conduct autonomous biological and chemical measurements in the region of space known as the exosphere. O/OREOS has been returning data from a pair of months-long science experiments. The first science results of the O/OREOS's Space Environment Survivability of Living Organisms (SESLO) payload were reported in the journal *Astrobiology* in December 2011. The O/OREOS mission has demonstrated that cubesats can be cost-effective platforms for performing science research and conducting technology demonstrations. Dr. Ehrenfreund was identified as an astrobiology pioneer in a portrait in the October 2011 issue of *Astrobiology*.

SPI and the George Washington Space Society Hosts Guest Speaker Series

SPI held three guest speaker events during the summer and fall. In July, visiting scholar Dinesh Kumar discussed the evolving space programs and policies amongst space fairing nations in

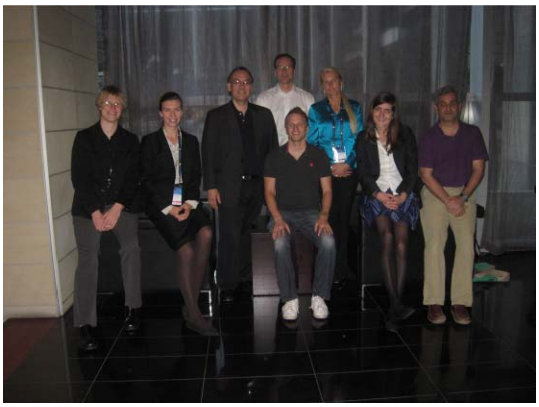
Asia. Mr. Kumar held a second lecture in October in which he discussed the implications of emerging space cooperation dynamics in Asia. The GW Space Society hosted a distinguished guest speaker in November: Lynn Cline, former Deputy Associate Administrator for Space Operations at NASA. Drawing on her personal experiences, she discussed the history and negotiating process that enabled the construction of the International Space Station. In November, Former Executive Secretary of the National Space Council, Dr. Mark Albrecht came to the Elliott School to discuss his book, *Falling Back to Earth.* He argued why the American era of human space flight has come to a close and what might come next.

SPI Partners with Government Agencies for Conferences

SPI supported the United States Telecommunications Training Institute for a three-day conference in November to train spectrum managers from developing countries in the use of space systems for natural disaster management. On November 17, SPI partnered with NOAA for a workshop to develop better criteria for end-of-life disposal of commercial remote sensing satellites to mitigate orbital debris.

SPI Attends the International Astronautical Congress 2011

The Space Policy Institute had a major presence at the 62nd International Astronautical Congress in Cape Town, South Africa. The conference took place the first week of October and it was the first to be held on the African continent. Faculty members from the Space Policy Institute attended, as well as an SPI Visiting Scholar and several graduate students. Dr Ehrenfreund was elected as full member of the International Academy of Astronautics.



From Left to Right, Kate Becker, Alanna Krolikowski, Dr. Scott Pace, Joel Hicks, Jacob Sutherlun, Dr. Pascale Ehrenfreund, Emmanuelle David, Madood Khan

SPI students and alumnae were able to participate in the Space Generation Advisory Council (SGAC) at the Space Generation Congress (SGC) preceding the IAC. SPI second-year student Kate Becker served on the 2011 SGC Coordinating Team as the Project Coordinator. Becker, SPI alumni Stephanie Wan and Nicole Herrmann, and recent SPI Visiting Scholar Alanna Krolikowski participated as delegates at the Congress.

SGC delegates discussed space debris mitigation, spectrum management, integrating space technology into society, the future of robotic exploration, and space for developing regions. SGC project groups briefed space agency officials on their conclusions, and the reports are available on the SGAC website and will be presented to the UN Committee on the Peaceful Uses of Outer Space.

SPI Hosts Visiting Scholars

The Space Policy Institute hosted another set of international scholars this past summer and fall. The scholars came from all over the globe to study at the Space Policy Institute and conduct their own research. This summer the institute hosted Edwin Tachlian from Sergio Arboleda University in Columbia and Dinesh Kumar from Ministry of Defense, Government of India. This fall, Chris Gilbert previously with EADS Astrium joined the institute as well as Seiji Anai from the Japan GPS Council.

SPI Co-Sponsors the "Women and Mars" Conference

From Left to Right, NASA Associate Deputy Administrator for Policy Integration Rebecca Keiser, SPI Alum Stephanie Bednarek, SPI Professor Pascale Ehrenfreund, and Staff Director House Committee on Science, Space, & Technology Leslee Gilbert

In November, the Space Policy Institute and Explore Mars Inc. teamed up to host a conference on Women and Mars. Conference attendees heard panels discuss a range of issues, including Mars science, policy related to Mars exploration, challenges facing women working in these areas, and STEM education. The variety of perspectives present--including panelists from NASA, congressional staff, academia, NGOs, and industry--made for lively discussion. SPI Professor Pascale Ehrenfreund, former SPI faculty member Colleen Hartman, and SPI alum Stephanie Bednarek participated as panelists.

Graduate Student Participates in the Caltech Space Challenge

SPI student Andreas Frick participated in the Caltech Space Challenge to design a human mission to a Near-Earth Object hosted by the Keck Institute for Space Studies. The students were assigned to two teams, Team Explorer and Team Voyager, to competitively develop their mission concepts.

The challenge encompassed the engineering, science, human factors, and policy aspects of the mission. While Team Voyager's mission relied on long-term cryogenic propellant storage, Team Explorer's spacecraft used advanced solar-electric propulsion in addition to chemical propellants for the majority of the mission. Both teams saw the need (and preliminary parameters) for a robotic precursor mission and articulated the scientific and societal benefits of a crewed mission. Ultimately, the judges favored Team Voyager's design, after initial scoring rubrics resulted in statistical ties between both teams.

News from the Director:

The academic year got off to a good start with several new graduate students. Please check out our updated web site to see the diverse backgrounds each of them

brings to the Institute. I have been spending a lot of time on GPS issues, particularly those related to spectrum management and modernization. I visited Japan in December for ten days to give space policy lectures at the University of Tokyo and the Japanese space agency. While attending the IAC 2011 meeting in Cape Town, I participated in meetings on improving space situational awareness and informal meetings of a UN expert group on regulatory regimes for the long term sustainability of outer space activities. Lastly, I contributed a chapter on space cooperation to a longer study by the US-Korea Institute at SAIS on "Missile Negotiations with North Korea." The election season is now upon us again and so I expect the coming semester and summer will also see opportunities for comment and analysis of the Presidential candidates and what implications there may be for U.S. space activity and international cooperation.

Space Policy Institute in the News

In the past several months you may have heard a member of the Space Policy Institute on the radio on National Public Radio, TBS eFM (Seoul), Radio Australia, Voice of Russia, or Radio Free Asia; seen one of us on C-Span, Fox News, and Deutsche Welle; read a quote in Science, Flight International, Scientific American, Congressional Quarterly, Via Satellite, the Wall Street Journal, the Washington Post, National Geographic, Politico, USA Today, Space News, the New York Times, Associated Press, the Los Angeles Times, and Bloomberg News; as well as international publications such as Respekt (Prague), German Press Agency, Kyodo News (Japan), The Hindu (India), AFP (France), the Global Times (China), and Kommersant (Russia).

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.

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