



THE GEORGE WASHINGTON UNIVERSITY

THE ELLIOTT SCHOOL
OF INTERNATIONAL AFFAIRS

SPACE POLICY INSTITUTE

FALL 2012 NEWSLETTER

Workshop on “Developing a Responsible Environmental Regime for Celestial Bodies”

As new countries and private entities begin to take part in planetary exploration, international agreements and domestic policies concerning the protection of planetary environments are of increasing interest. Planetary science is affected when existing geological or biological systems are disturbed by human activity, and guidelines for responsible exploration can help mitigate impacts. Many governments and private entities conduct planetary exploration and no single authority exists to enforce international guidelines.

The Space Policy Institute, in collaboration with the COSPAR Panel on Exploration, the COSPAR Panel on Planetary Protection, held a workshop on December 7th to discuss the challenge of establishing guidelines and regulations for responsible planetary exploration.

The one-day workshop included presentations by experts from government, academia and industry, including companies involved in private space exploration. The four panels of speakers covered the history of space exploration and planetary exploration, experiences in developing the current COSPAR Planetary Protection regime, developing reasonable and responsible new incentives for stewardship, and implementing agreed-upon standards.

Although, as expected, there was no resolution of these issues, the meeting was productive in that it brought together diverse experts from industry, academia, and governments to share their views on ensuring a responsible and sustainable space environment for commercial and scientific activities.

The workshop was conducted under the Chatham House Rule of confidentiality, and a report without attributions will be available in the coming months.

Congressional Testimony on NASA

Dr. Scott Pace testified before the House Committee on Science, Space and Technology on NASA's strategic direction on December 12th. The hearing was called in response to a report recently released by the National Research Council Committee.



“We should be visionary but focused on practical actions.” – Scott Pace

The panel of witnesses also included Robert Walker of Wexler & Walker; Maj. Gen. Ronald Sega, Vice Chair of the NRC Committee; Marion C.

Blakey, President and CEO of the Aerospace Industries Association; and Dr. Thomas Zurbuchen of the University of Michigan.

Dr. Pace's testimony pointed to the lack of strategic direction guiding NASA budgets and mission priorities, and encouraged a more integrated approach to space policy, taking into consideration human, robotic, civil, commercial, and national security space activities and the ways these areas can reinforce one another. The testimony can be found on the SPI website under 'News'.

The Space Policy Institute Hosts Distinguished Speakers

The Space Policy Institute welcomed a number of notable experts this fall, who spoke to students and members of the space community about various issues in space policy.



Dr. Mazlan Othman, the founding Director General of the Malaysian National Space Agency and Director of the United Nations Office for Outer Space Affairs (UNOOSA), spoke to students and professionals on October 15th. Her lecture described the structure and functioning of the

UNOOSA as well as general challenges in international cooperation and coordination in space.

The SPI's own Dr. Kris Lehnhardt, an Emergency Physician at the George Washington University Hospital and Assistant Professor at The George Washington University School of Medicine & Health Sciences, spoke to students and members of the space community on September 24th. He discussed the field of space medicine and the hurdles in health sciences that must be overcome in order to pursue human interplanetary exploration.

George Washington University space policy classes heard from several guest speakers, including John Sloan, International Outreach Program Lead at the Federal Aviation Administration's Office of Commercial Space Transportation; Chris Gilbert, a Visiting Scholar previously with Astrium Space Transportation in Bremen, Germany; Richard Leshner, in NASA's Office of the Chief Technologist; Al Condes, NASA Deputy Associate Administrator for International and Interagency Relations; Chris Shank, Deputy Chief of Staff for Rep. Lamar Smith (R-TX); Chirag Parikh, Director of Space Policy for the National Security Council; John Olson, Assistant Director for Space and Aeronautics at the White House Office of Science and Technology Policy; and David Radzanowski, Chief of Staff for NASA.

SPI Students

The Space Policy Institute welcomed four new Masters students this term,

all of whom we able to receive fellowships thanks to the SPI's generous supporters.

Over the summer and fall the SPI's twelve Masters students secured jobs and internships in a variety of areas, including NASA, ATK, the State Department, SpaceX, the Commercial Spaceflight Federation, Virgin Galactic, the Naval Research Laboratory, and the Johns Hopkins Applied Physics Laboratory.

The George Washington Space Society organized several events for SPI students and alumni this term, including a trip to NASA Headquarters.

SPI Faculty News

Assistant Professor Zoe Szajnfarder of the School of Engineering and Applied Sciences joined the Elliott School of International Affairs and the faculty of the Space Policy Institute this year. She teaches Engineering Management and Systems Engineering, and is a Research Affiliate at MIT in the Engineering Systems division. Her research focuses on strategies for encouraging innovation in the space sector through a deeper understanding of the interactions among administrative policies, management structures and the evolution of technical architectures.

This term, Dr. Szajnfarder received a new grant from NASA's Office of the Chief Technologist to explore technology investment as an innovation lever. She has an ongoing project with the European Space

Agency studying "innovation pathways" in their space science directorate. This led to a follow-on NASA-ESA comparative study. She also has a grant through MIT's Lincoln Labs to look at "Evolvability in the U.S. Military Tactical Communications Network".

Dr. Szajnfarder published two new journal articles the fall: the first argues for the need to move beyond traditional "Stage-Gates" in space technology management and the second describes an inductive process model of NASA's space science innovation system. She also led several working sessions and gave a number of invited talks at NASA Goddard and Langley and at the European Space Agency on innovation management in space agencies. Information about past and ongoing research in her laboratory can be found at:

www.seas.gwu.edu/~zszajnf

Professor Henry Hertzfeld delivered two papers last October at the International Astronautical Congress in Naples, Italy. One was at an International Institute of Space Law session and addressed the fact that the Liability Convention is insufficient to ensure a fair and equitable resolution of damages from an on-orbit accident, particularly with respect to private ventures in space. He outlined a number of concrete suggestions for improvements that might be applicable to future incidents. The other paper was delivered to an economics session and outlined a number of issues that need attention to improve

the reliability and validity of economic studies of space applications.

In late October, Professor Hertzfeld, who is Co-Chair of the Space Law Committee of the American Branch of the International Law Association (ABILA), headed a panel at the ABILA meeting in New York City. That panel discussed liability issues in space. Additionally, he was a panelist in a session that addressed similarities and differences between space law and the law of the seas.

In November, along with Professor Ehrenfreund, Professor Hertzfeld co-chaired the Workshop on Developing a Responsible Environmental Regime for Celestial Bodies.

Professor Pascale Ehrenfreund attended the 39th Scientific Assembly of the Committee in Space Research COSPAR in July 2012 in Mysore, India. In her role as chair of the Panel on Exploration (PEX) she organized the session “A vision for space exploration: Science as a bridge connecting stakeholders” and gave several talks on Mars exploration, Small Satellite Technology and Science Policy.

She also attended the XXVIII General Assembly of the International Astronomical Union in August 2012 in Beijing, China where she was elected President of the IAU Commission 51: Bioastronomy. She served in the organizing committee for sessions on extrasolar habitable planets and astrochemistry. During her visit to China she was invited for a research visit at the National Space Science

Center at the Chinese Academy of Sciences and gave a seminar on the signatures of life in the Solar System.

Professor Ehrenfreund attended the 63rd International Astronautical Congress in Naples Italy in October 2012 and presented on the progress of the assessment phase of the European asteroid sample return mission MarcoPolo-R. In November 2012, she attended the Canadian Space Summit in London, Ontario where she gave a keynote lecture on: “Enabling activities to enhance future cooperative space exploration efforts”. She participated in the public panel discussing human space exploration, including NASA center directors and several astronauts. As a member of the FP7 Space Advisory, Professor Ehrenfreund worked in summer and fall 2012 on the recommendations for the European Commission program “Space research in Horizon 2020” that was completed in December 2012.

Professor Ehrenfreund was named to the National Research Council Committee on Human Spaceflight in December 2012. The goal of the committee is to review the long-term goals, core capabilities, and direction of the US human spaceflight program and make recommendations to enable a sustainable US human spaceflight program.

Professor Emeritus John M. Logsdon traveled to California in September to receive the Gardner-Lasser Aerospace History Award of the American Institute of Aeronautics and Astronautics for his book *John F. Kennedy and the Race to the Moon*. A

paperback edition of the book will appear in Fall 2014. While there, he made an initial visit to the Richard M. Nixon Presidential Library and Museum for archival research in connection with his new book on space policy during the Nixon administration.

Dr. Logsdon attended the International Astronautical Congress in Naples, Italy, where he presented a paper titled "The United States and Space Exploration: Direction or Drift?" In October he presented a talk on "The Survival Crisis of the U.S. Solar System Exploration Program in the 1980s" during a Solar System Exploration Conference sponsored by NASA and the National Air and Space Museum. That talk was based on a paper that appeared as a chapter in Roger Launius, ed., *Exploring the Solar System*, which was published by Palgrave Macmillan in December.

In November, Dr. Logsdon traveled to Tokyo, where he was a featured speaker in an International Space Exploration Symposium sponsored by the Japanese space agency, JAXA. In December, he gave the opening keynote address at a second international conference on space exploration in Paris, France.

SPI Hosts Visiting Scholars

The Space Policy Institute continued to host international scholars this past summer and fall. The scholars came from all over the globe to study and to conduct their own research. This fall, the Institute hosted Keiichi Anan from the Japanese Ministry of Education,

Culture, Sports, Sciences and Technology. Dr. Anan's work includes a paper on changes in Japanese Space Law. With him, Dr. Pace has been closely following Japanese space policy developments and recent elections in Japan.

Space Policy in the News

In the past several months the Space Policy Institute was cited extensively as an expert source in television, radio, and print media. SPI professors were seen on television (C-SPAN, RTTV-America); heard on the radio (National Public Radio, The Space Show, Radio Free Europe, KPCC 89.3); seen on the Web (Space.com, CBS); read in magazines like *Time*, *Science*, *New Scientist*, *Nature*, *The National Journal*, *Aviation Week*; and in newspapers like *The Wall Street Journal*, *Washington Post*, *Associated Press*, *LA Times*, and *Politico*.

News from the Director



This has been a busy fall semester, with numerous talks and a wide variety of symposia and conferences. Along with other SPI faculty and students I attended the International Astronautical Federation Conference in Naples, Italy in October. My paper dealt with integrating US national security and civil space interests in international space cooperation. The conference also hosted side meetings of a regulatory expert group supporting a UN study on the sustainability of space activities.

I also participated on the US delegation in UN meetings of the Committee on the Peaceful Uses of Outer Space. Meeting topics included GPS, an international space Code of Conduct, and space sustainability.

Activities in the US included talks at the National Research Council, the Aerospace Corporation, the Secure World Foundation, DARPA, the GPS Independent Advisory Team, and the US Telecommunications Training Institute. I was also asked to join the Department of Commerce's Federal Advisory Committee on Commercial Remote Sensing.

In addition to debate over the future of human space flight (as covered in recent congressional testimony), I continue to be engaged in debates involving the management of radio frequency spectrum used by GPS. The regulatory, economic, and technical pressures on GPS spectrum are also applicable to other space users, civil, commercial, and military, so spectrum management will be an important issue for national space policy for some time.

The Obama Administration is beginning a second term and budget issues are continuing to pose uncertainties for US space activities – and indeed on all government activities. This year will likely see additional opportunities to comment and provide analysis on the future of US space activities and international cooperation.

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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