



SPACE POLICY INSTITUTE SPRING 2013 NEWSLETTER

Columbia + 10 Symposium: Lessons Learned and Unlearned

On March 8, 2013, the Space Policy Institute and the American Institute of Aeronautics and Astronautics held a daylong symposium to mark the recent 10th anniversary of the Columbia Space Shuttle Disaster.

On February 1st 2003, *Columbia* disintegrated as it returned to Earth because of damage caused to its wing during launch. The Columbia Accident Investigation Board (CAIB) was formed to determine the causes of the accident, physical and institutional, and to make recommendations for how NASA could move forward and return the Shuttle program to flight.

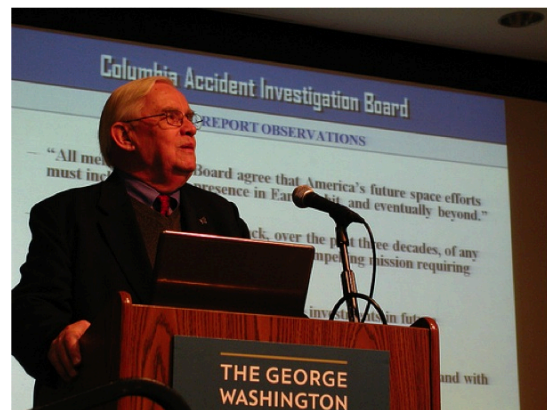
This symposium brought together panelists who were involved in the disaster and its aftermath to discuss what NASA and the space community learned from it and what lessons remain relevant today.

Vice Admiral Joseph Dyer, Chair of the Aerospace Safety Advisory Panel, gave the symposium's keynote address, speaking about the legacy of the accident on improved safety practices at NASA and the ongoing problem of trade-offs between cost and safety.

Former astronaut Scott "Doc" Horowitz and former NASA Marshall Space Flight Center Director David King then described the immense and intensive process of recovering the remains of the crew and the Shuttle that were

spread across an enormous area of East Texas and Louisiana.

CAIB members Douglas Cooke and John Logsdon then discussed the process of reconstructing the events that led to the disaster, both technical and institutional, and the standing of these issues with NASA today.



Former SPI Director John Logsdon at the Columbia+10 Symposium

Former astronauts Ken Bowersox, Kent Rominger and Pamela Melroy described their experiences in piecing together the causes of the disaster, recovering the crew, and moving the Shuttle program forward for its return to flight. Scott Pace, Bryan O'Connor, Julianne Mahler and William Parsons provided insights on the institutional problems at NASA that contributed to the disaster and remain problematic to this day.

The symposium concluded with remarks by CAIB Chair Admiral Hal Gehman and former Space Shuttle Program Manager and Flight Director Wayne Hale, who reminded the audience and those watching the

symposium on C-SPAN of the overarching lessons learned from the Columbia disaster, and of the ongoing importance of taking and managing risk for the sake of progress.

Science, Technology and Exploration: Research for Today, Training for Tomorrow

On March 28, 2013 the Space Policy Institute and the Universities Space Research Association partnered to host a symposium discussing research opportunities with NASA in Earth, space, and life sciences, notably aboard the International Space Station. Panelists also discussed partnership opportunities for universities and industry in combining science and exploration objectives in space missions. USRA is a non-profit research organization governed by 105 universities that work in space-related research and technology. Speakers included former astronaut John Grunsfeld, who is the NASA Associate Administrator for the Science Mission Directorate.

Humans to Mars Summit

The Space Policy Institute cooperated with ExploreMars, Inc to host this multi-day event covering May 6-8, 2013 that attracted approximately 450 attendees and extensive media coverage. Speakers included NASA Administrator Charles Bolden and Apollo astronaut Buzz Aldrin.



NASA Administrator Charles Bolden at the Humans to Mars Summit

This was a comprehensive conference designed to address the major technical, scientific, and policy-related challenges that need to be overcome to send humans to Mars. It was a cross-disciplinary effort with the involvement of key players from NASA, industry, the science community, and non-government organizations.

SPI Faculty News

Professor Henry Hertzfeld released a new publication (in cooperation with The Secure World Foundation) in January 2013, *A Guide to Space Law Terms*. Working with him as research assistants were GW students Liana Yung and Daniel Osborne. The *Guide* is available for download in PDF format from the SPI website (located under Publications/Books.)

In January, Professor Hertzfeld delivered a lecture on space law at the Eisenhower School (Industrial College of the Armed Forces), and in February gave a talk on satellite servicing at the Aerospace Corporation in El Segundo, California.



Prof. Hertzfeld with Prof. Gabrynowicz and NASA lawyer, Michael Schlabs at Williams College

Professor Hertzfeld also was on several panel discussions this spring. One was on “Threats to U.S. Space Assets” in the Rayburn Building, U.S. House of Representatives, another on “Measuring the Impacts of Space on the Economy” at the HEC Montreal in Canada, and the third was a panel on space law topics at Williams College, Williamstown, MA.

Finally, as coach of the GW Space Law Moot Team, Professor Hertzfeld participated in the North American competition at the end of March 2013. The team made it to the quarter-final round.

Professor Pascale Ehrenfreund was named to the National Research Council Committee on Human Spaceflight this year, and started her term in January 2013. 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.

Dr. Ehrenfreund also currently serves on the Independent Assessment Team for NASA’s Mars Rover 2020 and the Committee of Astrobiology and Planetary Science CAPS.

In January/February 2013, Dr. Ehrenfreund visited the European Space Policy Institute in Vienna for several weeks. She participated in the Science/Art Festival Sonic Acts XV: Dark Universe, Exploration in Music, Art & Science in February 2013 in Amsterdam with a Plenary Lecture: “Space Exploration and the search for life in the Universe”; and in the “From Stars for Life Meeting” at the University of Florida in Gainesville in April 2013. She was also a member of several panels during the Humans to Mars Summit at GWU in May 2013.

Professor Emeritus John Logsdon continued work this semester on research for a new book on the impact of the Nixon administration in shaping the U.S. space program after Apollo. The book will cover the conduct of the Apollo missions to the Moon, their aftermath, and the decision to build the Space Shuttle as the next major project for U.S. human spaceflight.

Dr. Logsdon had a paper on John F. Kennedy and the original Mercury astronauts published in the journal of spaceflight history, *Quest*, in April 2013. He also took part in a panel discussion at the Baker Institute at Rice University, “Lost in Space: Need for a Definitive U.S. Space Policy.” The panel of space policy experts discussed the present status and

future of NASA and the nation's civil space program.

Assistant Professor Kris Lehnhardt taught the second iteration of the graduate course EHS 6227: "Introduction to Human Health in Space" this term. Feedback from students was excellent and enrolment more than doubled from last year. The class this year was made up of a mix of graduate and senior-level undergraduate students from an interesting variety of disciplines: space policy, engineering, law, medicine, physics, and biology. Lecturers included Professor Lehnhardt, Dr. Rich Williams (Chief Health and Medical Officer for NASA), and Dr. Sandy Magnus (former NASA Astronaut and current Executive Director of the AIAA).

SPI Student Activities

Master's student Katrina Laygo was awarded a Freeman Foundation Fellowship to support her independent research in Manila, Philippines this summer. Based at the University of the Philippines Diliman School of Engineering, she will be studying the applications of satellite remote sensing, automatic identification systems (AIS), and geographic information systems (GIS) for support of maritime domain awareness (MDA) in the Tri-Border Area of Southeast Asia, a region highly contributory to transnational dissident, terrorist and criminal activity. With increased global coverage and reduced costs, satellite remote sensing, combined with AIS and GIS, continue to be of growing interest to the world's naval forces, port

authorities, and numerous stakeholder agencies for increasing MDA. Katrina will be coordinating with maritime agencies in the region to identify the debates and decisions that have shaped cooperative maritime operations, and the policy issues that must be addressed in order to determine the advancement of space assets for support of MDA.

This spring PhD student Patrick Besha successfully defended his dissertation, entitled "National, Regional and Sectoral Innovation Systems in China: Case Studies of the Renewable Energy and Space Technology Sectors".

Undergraduate student James Court had an op-ed published in *Space News*. In the article Court discusses the possibility that the progress of manned spaceflight in Asian countries might revitalize the American human spaceflight program.

PhD candidate Brian Weeden was also called upon for his expertise at the World Economic Forum's annual meeting at Davos, Switzerland. The panel on which he spoke was entitled 'The Future of Space'.

And the George Washington Space Society made a field trip to the Lockheed Martin Space Experience Center, learning about Lockheed's role in space exploration and national security, and gaining insight into the company's efforts to reach out to Congressional staff, international visitors and members of the general public.

SPI Hosts Visiting Scholars

The Space Policy Institute continued to host international scholars this past spring. The scholars came from all over the globe to study and to conduct their own research. This spring, the Institute welcomed Tomoko Ueta from the Japanese Ministry of Education, whose work focuses on space policy research from the perspective of national security, and evaluation methodology and techniques for science and technology policy.

The SPI also welcomed Shouping Li, Director of the Institute of Space Law at the Beijing Institute of Technology and Professor of International Space Law, who is studying the legal issues involved in new commercial uses of outer space.

The International Space University's Andrew Lee also joined the Space Policy Institute this spring. His research will focus on legal and policy issues associated with the remediation of space debris.

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. *C-SPAN*, *Space Policy Online*, *The Space Review* and *Aviation Week* covered the SPI-AIAA Event, "Columbia+10: Lessons Learned and Unlearned". Professor Henry Hertzfeld was interviewed on *The Space Show*. ScienceDirect.com included papers by SPI Faculty in their

'Top 25 Hottest Articles for 2012' from the journal *Advances in Space Research*.

News from the Director



This year, I have been looking at space cooperation with Japan and met this past year with senior Japanese government officials, including Junya Nishimoto, the Director-General of the Office of National Space Policy in the Japanese Cabinet Office and Kiyoshi Higuchi, the Vice President of Japan Aerospace Exploration Agency.

I wrote a chapter on U.S.-Japan space relations to the European Space Policy Institute's Yearbook on Space Policy, a chapter on U.S. geopolitical interests in space to a forthcoming book by the George C. Marshall Institute, and an article on Asia-Pacific space strategy to *The Diplomat*, a current affairs magazine for the Asia-Pacific region.

I have also been working with the State Department and the Secure World Foundation as part of efforts to improve space situational awareness and space sustainability (e.g., mitigation of orbital debris). This involves participation in discussions at the UN Committee on the Peaceful Users of Outer Space and participation in a UN study on the long-term sustainability of space activities.

The House Subcommittee on Space and Aeronautics invited me to testify

on The Future of NASA: Perspectives on Strategic Vision for America's Space Program on December 12, 2012. I talked about the need to reform policy toward human space flight and make a greater effort to involve international partners. I also spoke to the Council on Foreign Relations on April 15, 2013, along with former Congressman Robert Walker (R-PA), on U.S. space program budget cuts and international impacts to human space exploration.

Presentations and invited talks this year have been made to NASA, DARPA, the Department of Homeland Security, the Aerospace Corporation, the National Spectrum Managers Association, the Secure World Foundation, the US Telecommunications Training Institute, the U.S. Geospatial Intelligence Foundation, the National Research Council Space Studies Board, and Ohio State University as part of their John Glenn lecture series. I have also been serving as a member of the federal advisory board on commercial remote sensing for the National Oceanic and Atmospheric Administration (NOAA).

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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