

Space Policy Institute

THE GEORGE WASHINGTON UNIVERSITY

SPRING 2017 NEWSLETTER

RECENT EVENTS

February 22: The Space Policy Institute hosted Dr. Bleddyn Bowen of King's College, London, for a seminar titled, *The Wrath of Mahan: Space Warfare on the Cosmic Coastline*. His lecture addressed the topics of the role of space command in grand strategy, astro-economic warfare and consequences of the spread of spacepower on earth.

February 28: In cooperation with the DC chapter of the Planetary Society, the Space Policy Institute hosted Planetary Society Director of Space Policy, Casey Dreier, who presented a lecture on the history and relevance of space policy followed by Q&A and group discussion.

March 30: SPI and The Universities Space Research Association co-hosted a symposium titled, *Space Situational Awareness: Research for Today, Training for Tomorrow*. The event offered a platform for discussion of issues at various levels to answer the question of how SSA capabilities can contribute to science, commerce and security. Major General Roger Teague delivered the keynote address.



Scott Pace moderating a panel at the USRA Symposium on March 30

May 9-11: The *2017 Humans to Mars Summit*, presented by Explore Mars, attracted a large and diverse audience at the GW Lisner Auditorium and via webcast. The agenda included panels and discussions on space and small business, Mars and Hollywood, diplomacy's role in exploration, risk assessment, mission architectures, STEM education and the role of the Moon. Speakers included Scott Pace, Buzz Aldrin, Robert Lightfoot, Bill Gerstenmaier, Penny Boston, Steve Jurczyk, Thomas Zurbuchen and John Grunsfeld, among many others.



Scott Pace on a panel at the Humans to Mars Summit on May 11

May 16: In partnership with the Secure World Foundation and the Harris Corporation, the Space Policy Institute hosted a reception for the US and Japanese government delegations to the "Fourth Comprehensive Dialogue on Space." These talks covered a broad range of civil and security space cooperation between the two countries.

FACULTY AND STAFF NEWS

Dr. Scott Pace, in addition to instructing a graduate course, titled “Issues in Space Policy,” has maintained a presence in the local and global space communities through a series of events, presentations, panel appearances, interviews and research projects on a wide range of U.S. civil, commercial, and national security space policies. Additionally, Dr. Pace has continued as Vice Chair of the Department of Commerce’s Federal Advisory Committee on Commercial Remote Sensing, as well as his service as a special counselor to NASA’s Position, Navigation, and Timing Advisory Board. He authored opinion articles that were published in *Space News*, *The Hill*, and *Aviation Week and Space Technology*, and was featured for expert commentary for dozens of national and international news outlets, including *The Wall Street Journal*, *USA Today*, *Washington Post*, *the New York Times*, *Christian Science Monitor*, and *Wired*.

Dr. John Logsdon continues to be active in research and speaking. He is drafting the third in his series of books on U.S. presidents and space, tentatively titled *Ronald Reagan and the Space Frontier*. The book is scheduled for 2018 publication. On March 27, Dr. Logsdon gave a “work in progress” talk on the book at the National Air and Space Museum. In January, he spoke to a student-organized space policy class at Stanford University and then was dinner keynote speaker at the annual “Status of Human Spaceflight” symposium organized by the company Special Aerospace Services in Boulder, CO. In late February Dr. Logsdon attended the annual meeting of the Academic Council of the International Space University in Strasbourg, France; he is an elected member of the Council. On May 12, he participated in a Reddit “Ask Me Anything” Q&A session which received over 100 inquiries. His comments were featured in *The Washington Post*, *Los Angeles*

Times, *Atlantic*, *Quartz*, *Christian Science Monitor*, *SpaceNews*, *Phys.org*, *Slate* and *The Space Review*, among others.

Dr. Henry Hertzfeld taught a graduate course in Space Law, cross listed with GW’s School of Law, and acted as an advisor for the 2017 Manfred Lachs North American Space Law Moot Court Competition. He presented in several speaking engagements, including a keynote address at Michigan State University Law School, a panel at Johns Hopkins SAIS and a lecture at National Defense University. Dr. Hertzfeld also authored “Developing Issues in the Law of Outer Space,” which was published in the University of Pennsylvania Undergraduate Law Journal and is continuing research in the areas of federal regulation of private activities and registration of space objects. His comments were featured in a number of publications, including *The San Francisco Chronicle*, *New York Times*, *Washington Post*, *Wired* and *The Verge*.

Dr. Pascale Ehrenfreund, who is currently on leave to serve as Chair of the German Aerospace Centre (DLR) Executive Board, was also elected Vice President of the International Astronautical Federation for her studies on “Communication, Publications and Global Conferences,” and Vice Chancellor of International Space University. She will open the Global Space exploration conference GLEX 2017 in Beijing in June where stakeholders will gather from all over the globe to discuss future space exploration plans. In February, she participated in a colloquium at Harvard discussing the topic of “Space Exploration of our Solar System: Organics for Life and Habitability.” She has published several papers with a consortium on results of the Rosetta comet rendezvous mission and astrobiology research in extreme environments on Earth and in low Earth orbit.

Dr. Michael Keidar and his team at the School of Engineering and Applied Science licensed their recently-developed plasma thruster technology for small satellite propulsion to Vector, a space launch provider. It was also announced that the micro-cathode arc thruster (μ CAT) technology will be further demonstrated as a payload on missions scheduled in 2018, 2019 and 2020 as part of NASA's CubeSat Launch Initiative.

Dr. Peter Hays engaged in great number of national security space events this spring, including the Space Security Index Working Group Meeting in Montreal, a panel titled "Space Law in Evolution: Practice and Policy" at Johns Hopkins University SAIS Space Law Conference, a presentation titled "Space and Missile Defense: Issues and Challenges," at the CSIS-PSSI Space Security: Issues for the New U.S. Administration Conference, and a presentation titled "National Security Space: Issues and Challenges," at the Space Security Symposium, Global Space Congress in Abu Dhabi. Dr. Hays also participated in a Secretary of Defense/Net Assessment (OSD/NA) Commercial Space Futures Tabletop Exercise, an International Legal Implications of Military Space Operations Workshop at Stockton Center for the Study of International Law, Naval War College, Newport, and functioned as the Red Team Chair for a RAND Strategic Messaging for Space Tabletop Exercise at the Strategic Command Wargaming Center.

Dr. Kris Lehnhardt has continued his practice of emergency medicine at George Washington University Hospital and instructed a semester-long class on "Human Health in Aerospace," which was attended by students from SPI and GW's School of Medicine & Health Sciences. He was featured in several panels, including a recent symposium sponsored by The Atlantic, in which he discussed health concerns of long-term human spaceflight. Dr.

Lehnhardt also progressed to the Canadian Space Agency's top 72 candidates of their next astronaut corps selection process.



Kris Lehnhardt (far right) at the Atlantic Live "On the Launchpad" event on May 17

Dr. Zoe Szajnfarber's research group (Szajnlab) spent the spring semester making progress on their research into policy and technology management in the aerospace sector. In addition to their ongoing NASA and NSF grants, the group was awarded a new NSF grant to study design processes and the impact of a poor organization-technical "fit" on design outcomes. The work will be conducted at NASA's GSFC and JPL and SPI alumni Nik Joseph will be returning to GW to pursue a PhD funded by this grant. In other grant news, the lab's role in NASA's Systems Engineering Consortium will be expanding in the fall. The group had a busy conference season presenting three papers at the Conference on Systems Engineering Research in March and four more at the Industry Studies Conference (ISA) in May. Professor Szajnfarber serves as the Technology Management Track Chair for ISA and will also be organizing a panel at the conference. More activities can be found at www.seas.gwu.edu/~zszajnf/

STUDENT NEWS

Evan Linck co-authored "Beyond the RD-180" for the Center for Strategic and International Studies, where he contributes as an analyst for the Aerospace Security Project.

Cody Knipfer authored "To Guarantee American Space Leadership, NASA Must Partner with Private Industry," which was featured in *Huffington Post*.

Zach Hester authored "After the International Space Station: National Aeronautics and Space Administration, Industry, and the Future of Commercial Spaceflight in Low-Earth Orbit." His work considers the future of the American human spaceflight program in the context of a future retirement of the International Space Station and was published in the *New Space Journal*.

VISITING SCHOLARS

Taehwan Cho

Republic of Korea Air Force
(January 2017 – June 2017)
Research Topic: *A Development Plan for Korean Satellite Based Augmentation System*

Alissa Haddaji

Committee on Space Research
(September 2016 - May 2017)
Research Topic: *Planetary Protection*

Tomas Hrozensky

Matej Bel University, Slovakia
(August 2016 - February 2017)
Research Topic: *Changing Structure of the Global Space Sector*

Keiichi Tabuchi

Research Promotion Bureau, Japan
(March 2016 – April 2017)
Research Topic: *Political Trends of Space Development and Utilization*

Paul Wohrer

International Space University
(January 2017 - February 2017)
Research Topic: *Comparing International Commercial Launch Markets*

MESSAGE FROM THE DIRECTOR

The Spring Semester has been a busy one with intense interest in the future direction of U.S. space activities in light of a new Presidential Administration. I provided informal support to the transition team for NASA and have continued to be in touch with space-related persons on the "beachhead" teams at NASA and Defense.

My colleague, and the founder of SPI, John Logsdon, noted that 2017 is the 30th anniversary of the establishment of the Space Policy Institute. Today, we have a faculty with a combined 150 years or so of experience in the space sector, most of it dealing with policy, law, economics, and history, with a record of publications, grants and contracts, and service on committees at the national and international level. We have a long record of graduate education, research, professional and public outreach. Most importantly, we have contributed to the development of a wide range of students, scholars, and professionals who have held and continue to hold responsible positions in government, industry, and academia related to a wide variety of space activity.

We are grateful to our colleagues, students, and the space community for the opportunity to be part of this great adventure.

SUPPORTERS

Our efforts would not be possible without the generosity of our sponsors. We sincerely appreciate the continued support of the following partners:

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