



SPACE POLICY INSTITUTE FALL 2016 NEWSLETTER

RECENT EVENTS

September 9: The 2016 US-Japan Space Forum was co-hosted with the Maureen and Mike Mansfield Foundation and highlighted the rollout of policy recommendations that reflect the results of the U.S.-Japan Space Forum's two-year study on critical developments and opportunities for bilateral space activities. The event featured commentary from members of the defense and space policy communities in Washington, D.C. and Tokyo, including a keynote address from Diet member, Dr. Karen Makishima, who discussed the significance of space within Japan's broader priorities and the important role of U.S.-Japan space collaboration.

September 21: Planetary Society cofounder Dr. Louis Friedman discussed his new book, [Human Spaceflight: From Mars to the Stars](#), which examines nanotechnology, space sails, robotics, biomolecular engineering and artificial intelligence as vehicles of the future.

October 21: The [Geeks Without Frontiers Connectivity Is The Revolution!](#) thought leadership forum featured panelists from The World Bank, U.S. Department of State, International Finance Corporation, Google, Facebook, SES, O3B, ManSat and The Space Policy Institute, as well as former NASA astronaut, Col. Alvin Drew. The discussions examined how to accelerate global internet connectivity with the possibility of positively impacting a billion people over the next decade.

November 2: The Space Foundation and Space Policy Institute Networking Reception gave dozens of young professionals the opportunity to meet with and learn from their peers, as well as senior-level industry leaders from organizations such as Lockheed Martin, Orbital

ATK, U.S. Department of State, NASA and the Commercial Spaceflight Federation.



December 7: The 2nd EU-US Space Policy Conference (above) was co-hosted by The Space Policy Institute, U.S. Department of State and The European Union Delegation to the United States. The event focused on the newly released space strategy for Europe and featured panelists from Virgin Galactic, Spire, Planetary Resources, Astrobotic, the US Department of State, the National Oceanic and Atmospheric Administration, the Department of Defense, the European External Action Service's Special Envoy for Space, the European Space Policy Institute and the Secure World Foundation.

FACULTY AND STAFF NEWS

Dr. Scott Pace authored several articles and commentaries, including [Space Cooperation Among Order-Building Powers](#), which was published in *The National Maritime Intelligence-Integration Office Technical Bulletin*, [Navigating in Space - Taking GNSS to New Heights](#), which was published in *Inside GNSS*, and [How Trump Should Restart U.S. Space Momentum](#), which was published in *Aviation Week*. He also spoke on a number of panels, including the [CSIS Aerospace Security](#)



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Project and at the 9th Annual Werner Von Braun Symposium. He was featured in dozens of media outlets including *The New York Times*, *New Scientist*, *Quartz*, *Fox News*, *Wired*, *Ars Technica* and *Space.com*.

Dr. John Logsdon was awarded the 2016 AIAA Gardner-Lasser Aerospace Literature Award for his 2015 book, *After Apollo? Richard Nixon and the American Space Program*, which was acknowledged as the year's "best original contribution to the field of aeronautical or astronautical non-fiction literature." He previously received the award for his 2010 book, *John F. Kennedy and the Race to the Moon*. John was also featured in the National Geographic Miniseries, *Mars*, providing expert commentary in an episode of the series that depicts the first manned Mars landing. In a Facebook Live broadcast for National Geographic on the topic, Dr. Logsdon's 15-minute Q&A segment amassed over 80,000 views. He was featured in many media outlets, such as *The Guardian*, *Washington Post*, *National Geographic*, *Yahoo News*, *Nature*, *Scientific American*, *Planetary Society*, *Wired*, *Daily Mail*, and *Fox News*.

Dr. Henry Hertzfeld was featured published as a panelist at *The 5th Annual Space and Satellite Regulatory Colloquium* and published several works, including and *Le secteur privé: quel rôle dans la conquête spatiale de demain?* for *Les Grands Dossiers De Diplomatie No. 34 Geopolitique De L'Espace*. He will instruct a graduate course in Space Law this spring.

Dr. Pascale Ehrenfreund, who is currently on leave to serve as Chair of The German Aerospace Center (DLR) Executive Board, has also maintained activity in astrobiology research as a member of the of the science team for the Micro-Imaging Dust Analysis System instrument (MIDAS) onboard the Rosetta

comet rendezvous mission. The team was published the first detailed 3D images of "Aggregate dust particles at comet 67P/Churyumov-Gerasimenko" in *Nature*.

Dr. Michael Keidar and his team developed a 4-microcathode arc thruster propulsion system for CANYVAL-X (Cubesat Astronomy by NASA and Yonsei University using the Virtual Telescope Alignment Experiment), a cubesat technology demonstration mission by NASA's Goddard Space Flight Center and Yonsei designed to validate technologies that allow two spacecraft to fly in formation along an inertial line of sight.

Dr. Kris Lehnhardt furthered his research in space medicine through a number of endeavors, including a student-delivered oral presentation at IAC 2016 in Guadalajara, Mexico entitled "Fracture Risk in Spaceflight and Potential Treatment Options," while one of the medical residents that he is mentoring delivered an oral presentation at the European Congress of Aerospace Medicine in Oslo, Norway entitled "Medical Certification Recommendations for Commercial Spaceflight Crewmembers with a History of Spontaneous Pneumothorax". In addition, he has been a contributing author on two recently published articles: "Radiation Impacts on Human Health During Spaceflight Beyond Low Earth Orbit" in REACH – Reviews in Human Space Exploration and Commercial Spaceflight Challenges for Emergency Medical Response in the *Journal of Emergency Medical Services*. Currently, Dr. Lehnhardt is preparing for the upcoming spring semester of his graduate course EHS 6227: Introduction to Human Health in Space.



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Dr. Zoe Szajnfarber's research group (SzajnLab) had a busy fall semester continuing research on technology management and policy in the aerospace sector. The work was funded by five active NASA and NSF grants that produced four conference submissions and three journal papers to be presented in 2017. During the summer, Prof. Szajnfarber served as general chair when GWU hosted the International Engineering Systems Symposium, which was a great success. SzajnLab student and SPI alumna Samantha Marquart Brainard won best poster for her work on the impact of government oversight on engineering tasks. Lt. Col. Amy Cox defended her doctoral thesis in September 2016 and is now teaching at the Air Force Institute of Technology at Wright-Patterson AFB in Dayton, Ohio. More activities by students and faculty can be found at www.seas.gwu.edu/~zszejnfa/



Kate is shown above with Secretary of Commerce Penny Pritzker and NOAA Administrator Kathryn Sullivan.

SPI alumnus **Andre Bormanis** served as concept developer, writer, and co-executive producer of the six-episode National Geographic miniseries, *Mars*.

SPI STUDENT AND ALUMNI NEWS

First year graduate student, **Cody Knipfer** was published in *The Space Review*. His submission, [America's Future in LEO? The possibilities and challenges facing commercial space stations \(part 1\)](#) provides a detailed analysis of the future of ISS, specifically regarding research, commercial applications and eventual replacement options.

Space Policy Institute graduate **Kate Becker** was presented with the Silver Sherman Award for her contributions to NOAA. The award recognizes individual performance above normal requirements, achievement of a milestone that contributed significantly or critically toward the attainment of a particular program goal, and/or demonstration of leadership toward process improvement of a significant magnitude.

CURRENT VISITING SCHOLARS

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 Global Space Sector*

Keiichi Tabuchi

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



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MESSAGE FROM THE DIRECTOR

I have continued to work on a wide range of U.S. civil, commercial, and national security space policies. This fall has been a busy one with conferences on a new space strategy for Europe and recommendations for Japanese space policies. I visited Tokyo for week in December to give presentations on trends in GPS and satellite communications to industry associations. In addition, I met with Japanese Diet Members, members of the Japanese Ministry of Foreign Affairs, and the Cabinet Office for space policy, among others.

This year's Presidential election occupied a great deal of attention as might be expected. While space *per se* was not a major topic, space issues are integral to a wide range of national security and foreign policy challenges and will likely be receiving more attention. I finished work on a National Research Council committee on space protection and defense that completed a study of "space resilience" in response to a congressional mandate. An unclassified summary was made publicly available that indicated that Russian and Chinese counterspace capabilities are an increasing threat to US and allied space systems.

Under contract through GW, I am working with NASA on technical and policy issues related to the Global Positioning System. A continuing challenge has been regulatory protection of the radio frequency spectrum used by GPS from interference by commercial communication sources. In addition, I have been supporting efforts to update the GPS performance standard for navigation and positions services provided to spacecraft and serve as a senior advisor to a federal advisory committee for space-based positioning, navigation, and timing.

I continued to serve as a private sector advisor to the US delegation in UN meetings of the Committee on the Peaceful Uses of Outer

Space (COPUOS) in Vienna, Austria. Meetings have focused on the development of guidelines for the long-term sustainability of space activities (e.g., mitigating the risk of orbital debris). Most recently, I was named Vice Chair or the Advisory Committee on Commercial Remote Sensing (ACCRES) to NOAA. We had our first public meeting this fall and we look forward to providing recommendations on how to update US regulations for a rapidly changing global market.

Finally, I have chaired a doctoral dissertation committee under the Trachtenberg School of Public Policy and Public Administration for Brian Weeden for the past few years. I'm happy to report that Brian successfully defended his dissertation on a "Case Study of the Interagency Process for Making Presidential Policy Decisions on Dual-Use Space Technology: The Global Positioning System and Space Traffic Management" in December 2016 and is now "Dr. Weeden."

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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