



# EVENT PROGRAMME

#Space4Earth #S4EHackathon

20 October 2019

Walter E. Washington Convention Center, Room 143B

Washington DC

USA



SPACE GENERATION  
ADVISORY COUNCIL

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# Schedule

9:00 AM	Registration (20 min)	
9:20 AM	Opening Ceremony (40 min) <i>Dr Dana Johnson, Director, International Outreach and Policy, U.S. Department of Defence</i>	
10:00 AM	Airbus Optional Challenge Introduction (10 min) <i>Vera Leister, Application Developer, Airbus</i>	
10:10 AM	Next Technology Introduction and Ideation (80 min)	Digital Technology introduction (10 min) <i>Dr Hannah Kerner, Department of Geographical Sciences, University of Maryland</i>
		Digital Technology ideation (10 min)
		Medical Technology introduction (10 min) <i>Jules Lancee, Biomedical Engineer, Radbound UMC</i>
		Medical Technology ideation (10 min)
		Space Technology introduction (10 min) <i>Dr Erika Wagner, Payload Sales Director, Blue Origin</i>
		Space Technology ideation (10 min)
		Hardware Technology introduction (10 min) <i>Dr Tanya Harrison, Manager for Science Programs, Planet Labs</i>
		Hardware Technology ideation (10 min)
11:30 AM	Break + snacks (15 min)	
11:45 AM	UN SDGs Introduction (15 min)  <i>Shirish Raan, UN-SPIDER</i>	History of UN SDGs (5 min)
		Structure of UN SDGs (5 min)
		Utilization of UN SDGs (5 min)
12:00 PM	Ideation Categorization (60 min)	Categorization of ideas (20 min)
		Characterization of ideas (20 min)
		Presentation of categories & SDG connections (5 min x 4)

1:00 PM	Lunch (60 min)	
2:00 PM	Problem / Solution Identification (60 min)	Idea shopping (10 min)
		Problem / solution identification (45 min)
		Finalization (5 min)
3:00 PM	Hacking for Solutions (70 min)	Pitch layout introduction (10 min)
		Pitch preparation (60 min)
4:10 PM	(80 min)	Pitch #1 (10 min) + QnA #1 (10 min)
		Pitch #2 (10 min) + QnA #2 (10 min)
		Pitch #3 (10 min) + QnA #3 (10 min)
		Pitch #4 (10 min) + QnA #4 (10 min)
5:30 PM	Judging + coffee break(30 min) - Steve Eisenhart, Senior Vice President – Strategic & International Affairs, Space Foundation	
6:00 PM	Announcement of winners + closing ceremony (30 min)	

## Speakers

### **Dr Dana Johnson**

Director, International Outreach and Policy, U.S. Department of Defence

Dr. Dana J. Johnson is the Director, International Outreach and Policy, Office of the Under Secretary of Defense (Research and Engineering), U.S. Department of Defense. She is the principal advisor to the Under Secretary of Defense for Research and Engineering and senior leadership on matters concerning international engagement, defense strategy and policy pertaining to the Department's science and technology activities. She has held prior positions in space policy and security at the Department of State, Northrop Grumman's Corporate Analysis Center, RAND, and other industry and "think

tanks” in Washington, D.C. and California. Dr. Johnson is also an adjunct professor at Georgetown University and George Washington University, teaching classes on space policy. She has a Ph.D. in International Relations from the University of Southern California, an M.A. in International Studies from The American University, and an A.B. in Government from the University of Redlands, and has written and contributed to numerous books, monographs, and presentations.

**Vera Leister**

Application Developer, Airbus

Vera is currently working as an Application Developer in the Geo-Intelligence department of Airbus Defence and Space and focusing on SAR and mapping applications.

She holds a Bachelor Degree in Mathematics and a Master's degree in Geodesy and Geoinformation Science. Previously, Vera commenced the Young Graduate Trainee programme at ESA (ESTEC) working for the metrology team in the satellite test centre as well as in Earth Observation Mission Science - related to GNSS reflectometry.



**Dr. Hannah Kerner**

Assistant Research Professor, Department of Geographical Sciences, University of Maryland

Dr. Hannah Kerner is an Assistant Research Professor in the Department of Geographical Sciences at the University of Maryland. Her research involves developing new machine learning methods for analyzing remote sensing data for agricultural monitoring, food security, Earth science, and planetary applications. Hannah received her B.S. in computer science at the University of North Carolina at Chapel Hill and her PhD at Arizona State University, where she developed new methods for facilitating scientific discovery in planetary exploration investigations at Mars, the Moon, and Earth using machine learning. She has developed onboard software for the world's largest constellation of satellites at Planet, Inc., and worked at NASA's Jet Propulsion Laboratory, Goddard Space Flight Center, and Langley Research Center.



### **Jules Lancee**

Biomedical Engineer, Radboud UMC

Jules is a Dutch biomedical engineer and private pilot, working at the innovation team of the Radboud university medical center in The Netherlands. In his work he is actively exploring emerging technologies, like Artificial Intelligence, Virtual Reality, and 3D printing in the terrestrial healthcare setting. It's his role to demystify these new technologies through innovation projects with patients and healthcare professionals, and describing what the future of health and care might bring.

He also shows how these new, often digital health tools, will benefit the health and medical needs of astronauts on future deep space missions. It's his goal to bridge the worlds of space and healthcare (innovation) to eventually send humankind on a healthy journey to the Moon, Mars and beyond. He regularly gives presentations and workshops on these topics and from 2017 on he helped set up the Global Network of Healthcare Innovation Centers (twitter), in order for healthcare institutions to leverage the power of these new technologies.



### **Dr Erika Wagner**

Payload Sales Director, Blue Origin

Erika Wagner serves as Payload Sales Director for Blue Origin, LLC, a developer of vehicles and technologies to enable human space transportation. Prior to joining Blue Origin, Erika worked with the X PRIZE Foundation as Senior Director of Exploration Prize Development and founding Executive Director of the X PRIZE Lab@MIT. Previously, she served at MIT as Science Director and Executive Director of the Mars Gravity Biosatellite Program, a multi-university spacecraft development initiative to investigate the physiological effects of reduced gravity.

From 2009 to 2012, Erika was a member of the Commercial Spaceflight Federation's Suborbital Applications Researchers Group, furthering the research and education potential of commercial suborbital launch vehicles. Today, she serves on the Boards of the Museum of Flight and American Society for Gravitational and Space Research, as well as the National Academies' Space Studies Board.

Erika's interdisciplinary academic background includes a

bachelor's in Biomedical Engineering from Vanderbilt University, a master's in Aeronautics & Astronautics from MIT, and a PhD in Bioastronautics from the Harvard/MIT Division of Health Sciences and Technology. Her research spanned both human and mammalian adaptation to microgravity, partial gravity, and centrifugation; as well as organizational innovation and prize theory. She is also an alumna of the International Space University.



**Dr Tanya Harrison**

Manager for Science Programs, Planet Labs

Dr. Tanya Harrison calls herself a “professional martian.” She has spent the last decade working as a scientist and in mission operations on multiple NASA Mars missions, including the Curiosity and Opportunity rovers. Her specialty lies in geomorphology: the study of a planet’s evolution based on its surface features. Before Mars however, Tanya had her head in the stars as an astronomer studying the metal content of star clusters and recurring novae systems. She holds a Ph.D. in Geology from the University of Western Ontario, a Masters in Earth and Environmental Sciences from Wesleyan University, and a B.Sc. in Astronomy and Physics from the University of Washington. Currently she is the Manager for Science Programs at Planet Labs. Tanya is also an advocate for advancing the status of women in science and for accessibility in the geosciences. You can find her prolifically tweeting about the Red Planet as @tanyaofmars.



**Shirish Raan**

UN-SPIDER

Shirish Ravan works for the United Nations Office for Outer Space Affairs in Vienna, Austria. He coordinates activities of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) in Asia and the Pacific. He is also involved in other programmes of the Office that promote the use of space technologies for sustainable development. His previous assignments include leading the UN-SPIDER Beijing Office and Illicit Crop Monitoring Programme of the United Nations Office on Drugs and Crime in Afghanistan. He has extensively worked with the countries in Asia, the Pacific and Africa to offer technical advisory services, institutional strengthening and outreach programmes for promoting applications of Earth observation disaster risk



reduction and sustainable development.

He holds Bachelor degree in Horticulture, Master in Environmental Sciences and Doctorate in Forest Ecology. His doctoral research explored the remote sensing technology for forest ecosystem analysis (biomass and biodiversity assessment), and he has authored over 50 publications including 20 research papers in the peer-reviewed journals.

## Judges



### **Steve Eisenhart**

Senior Vice President - Strategic & International Affairs, Space Foundation

As head of international affairs, Steve Eisenhart is principally responsible for the Space Foundation's global strategy and relationships with international space agencies and organizations, foreign embassies and U.S. organizations involved with global space programs. He is directly responsible for the program development and integration of key Space Foundation activities including the annual Space Symposium and the New Generation Space Leaders program.

Since joining the Space Foundation in 1996, Eisenhart has had a broad range of responsibilities, serving as senior vice president of strategic communications, director of communications and public affairs and communications manager. Eisenhart was a military public affairs official and is a graduate of the United States Military Academy at West Point.



### **Joerg Kreisel**

CEO, JKIC

Joerg specializes in technology commercialization – with a strong focus on space – and has been involved in numerous primarily international activities in both space and early-stage equity finance since 1987 (i.e. support to the creation and early years of RapidEye). After pursuing a first career in space business he became venture capitalist in the early 1990s. Joerg serves as board member of several high-tech startups and investor boards, has been involved with new business creation in the space arena around the globe. He holds a

degree in aerospace engineering from RWTH Aachen University (Germany) and is an ISU alumnus, acts as lecturer at different universities since the 1990ies, and is a frequent speaker at international events. Joerg was born in 1961 and is married, with two children.

His firm JKIC (JOERG KREISEL International Consultant – Independent Space Business + Finance Advisors) was formed in 1991 in Germany and is focused on innovative and commercial activities related to the space sector as well as on special activities in the private equity and venture capital industry. Today, JKIC is a recognized label in the global space community, advising space-related government authorities, industry, SMEs and selected investors worldwide using its proprietary global network of leading expertise, and acting as intermediary. JKIC supports space ventures, facilitates business partnerships, equity finance, global links and strategy development as well as new system concepts. The portfolio also spans over financing strategies and models beyond commercial endeavors, e.g. conceptualization and development support for national or international funding schemes.

Since 2000 JKIC is involved with on-orbit servicing (OOS) both space agency and industry projects or commercial offerings, was part of the iBOSS consortium, and instrumental in creating iBOSS GmbH which commercializes the iSSI (intelligent Space System Interface enabling plug-and-play space infrastructure and fully-fledged OOS).

In summary, Joerg is around in the industry for more than 30 years and deals with space finance for more than 25 years, moreover, he currently holds stakes in several space-related startups in different countries.

Moreover, Joerg is Associate Fellow of the AIAA (American Institute of Aeronautics and Astronautics) and founding member of the Space Entrepreneurship and Investment Committee (EIC) of the IAA (International Academy of Astronautics).