

Innovation is a Critical Capability in Great Power Competition
Thursday, 4 February 2021, 1:30-3:00 pm EST

Program



**US Space Policies for the New Space Age:
Competing on the Final Economic Frontier**

Bruce Cahan, J.D. and Dr. Mir Sadat
based on Proceedings from
State of the Space Industrial Base 2020
Sponsored by United States Space Force,
Defense Innovation Unit,
United States Air Force Research Laboratory
Illustrations by James Vaughan

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In support of this report
release, NewSpace New Mexico will
host five webinars to delve into the
substance of this study.



NewSpace New
Mexico Webinar
Hosts: Casey
Anglada
DeRaad and
Scott Maethner



Authors:
Bruce Cahan and
Dr. Mir Sadat



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Thursday, 4 February 2021, 1:30-3:00 pm EST
Moderated by NewSpace New Mexico

Keynote: Tory Bruno, CEO, United Launch Alliance

Roundtable Panelists:



Brig Gen Steven
(Bucky) Butow
DIU



Tom Cooley
AFRL



Lars Hoffman
Rocket Lab



Brig Gen (r) Wayne
Monteith
FAA



Jordan Noone
Embedded
Ventures

Innovation is a Critical Capability in Great Power Competition

Innovators look at existing products, services and markets with an eye on disrupting access, cost, quality or a mixture of them. Innovators are creating the commercial space sector for dual use, and thereby grow the space sector's capabilities, and in turn, change preconceived procurement, license and government processes. The lag time between how fast innovators version their designs and business models, and how slow government can respond represent an opportunity for government. Reducing delay and uncertainty of government procurements and growing the pools of capital and funding can improve the success of innovators, while attracting talent to the space sector.

Authors of "Space Policies for the New Space Age: Competing on the Final Economic Frontier"



[Bruce Cahan](#) is a Lecturer in Stanford University's Management Science and Engineering Department, a Distinguished Scholar at Stanford's Human-Sciences and Technologies Advanced Research Institute's mediaX Program, and an active member of CodeX Fellow at Stanford's Center for Legal Informatics. Bruce co-founded the Sustainable Banking Initiative at Stanford, and teaches Redesigning Finance, Ethics of Finance, Buy-Side Investing and Sustainable Banking at Stanford. As an Ashoka Fellow and as CEO of Urban Logic, Inc., a NY nonprofit, Bruce researched and leads the effort to create the Space Commodities Exchange as essential "financial engineering" for the New Space Economy. Bruce is licensed as a lawyer in CA, NY and PA, and practiced as a Wall Street lawyer in NYC with the international law firm of Weil Gotshal & Manges. Bruce graduated The Wharton School at the Univ of Pennsylvania (BS Econ & Int'l Business) and Temple Law School (J.D.)



[Mir Sadat](#), Ph.D., recently departed the U.S. National Security Council at the White House, where he led the interagency on defense and space policy issues. In this role, Mir prepared the President, National Security Advisor, and White House Senior Officials on significant civil, commercial, and national security space topics. Mir is also a naval officer with intelligence and space qualifications and in his preceding two naval assignments, he served as a Space Policy Strategist with Chief of Naval Operations and a Space Operations Officer with U.S. Tenth Fleet. Mir has a PhD from Claremont Graduate University and has taught at various universities in California and in Washington, DC. Prior to joining the government, Mir spent 10 years in various capacities at Lockheed Martin, Northrop Grumman, and Raytheon.

Agenda

NewSpace New Mexico Welcome: Casey Anglada DeRaad

Introduction Webinar & Report: Bruce Cahan & Mir Sadat, Authors

Keynote: Tory Bruno, CEO, United Launch Alliance

Roundtable Panelists:

Brig Gen Steven (Bucky) Butow, Defense Innovation Unit

Tom Cooley, Air Force Research Laboratory

Lars Hoffman, Rocket Lab

Brig Gen (r) Wayne Monteith, FAA

Jordan Noone, Embedded Ventures

Moderator: Casey Anglada DeRaad, NewSpace New Mexico

Q&A – Led by Scott Maethner, NewSpace New Mexico

Wrap Up and Report Overview – Bruce Cahan & Mir Sadat

Speaker Information:



Tory Bruno, CEO, United Launch Alliance

Tory Bruno, Tory is the CEO of United Launch Alliance. Under his leadership, ULA has transformed into a competitive powerhouse that is shaping the future of space launch by making it more affordable, accessible, and introducing revolutionary new capabilities to meet the challenges of the future. Over the past 35 years, Tory has developed and fielded dozens of critical defense and space launch systems that form the backbone of America's national security and her efforts in space exploration. He has a deep history in Missile Defense, Strategic Deterrence, and Space Launch. Tory is also an expert in several rocketry and hypersonic technologies and holds multiple related patents. He is a tireless advocate for the industry, sharing his passion for space technology and his vision of a self-sustaining human presence beyond earth. Tory is also a strong communicator on space. His social media presence is legendary world-wide and is an inspiration to many. Tory is an American Institute of Aeronautics and Astronautics (AIAA) Fellow, a member of the DoD Defense Innovation Board Space Advisory Committee and serves as a member of the National Space Council Users' Advisory Group. Tory is also an awardee of the Von Braun Trophy, a holder of the von Karman Medal, and a member of the Space & Satellite Professionals International Hall of Fame.



Brig Gen Steven (Bucky) Butow, Director, Defense Innovation Unit

Defense Innovation Unit Director - Brig Gen Butow is former Commander of the 129th Rescue Wing, Air Combat Command, with 3,500 flying hours in H/MC-130P, T-38 and T-37 aircraft. As a researcher with the SETI Institute, he worked on instrument concepts for Mars surface soil analysis at NASA Ames Research Center and was Co-PI on two NASA/USAF airborne science campaigns. He was recognized for outstanding achievement by the Space Science Division in 1999 and received an Ames Honor

Award as a member of the first astrobiology mission in 2000. He holds a B.A. in Physics & Astronomy from San Jose State University, M.S. in Air & Space Strategic Studies from the University of Maryland and is an invited member of the Honor Society of Phi Kappa Phi.



Dr. Tom Cooley, Chief Scientist, Space Vehicles Directorate, Air Force Research Laboratory

Dr. Thomas Cooley is the Chief Scientist, Space Vehicles Directorate, Air Force Research Laboratory, Kirtland Air Force Base, New Mexico, where he is responsible for the technical quality of a \$200+ million annual Air Force space science-and-technology investment. He coordinates \$500+ of DoD Space S&T investments with other government agencies and industry internal research and development to avoid duplication of effort and/or gaps. He began his career at NASA's Jet Propulsion Laboratory developing advanced

microwave communications and remote sensing technologies while attending graduate school at Caltech. After completing his doctorate at the University of Arizona in Optical Sciences under a NASA fellowship, he spent a year as a Post-Doc Researcher advancing optical calibration techniques in Toulouse, France. He joined AFRL in 1998 and has contributed to a wide range of technologies focused on Electro-Optic sensors and imaging spectroscopy from space. In 2004, he became the Principal Investigator of TacSat-3/ARTEMIS satellite, a hyperspectral sensor built to demonstrate the value of the data for a wide range of military applications. In 2015 he became the lead for Space Situational Awareness technology efforts at AFRL, before stepping into his current role in 2017. He is a Fellow of SPIE and of AFRL.



Lars Hoffman, Senior Vice President, Rocket Lab

Lars Hoffman is Rocket Lab's Senior VP of Global Launch Services. He leads the business development and customer experience strategy for the Electron program. With 30+ years of experience in national security and aerospace, Lars has deep knowledge of the launch industry and the ever-evolving needs of satellite owners and operators. Previously Lars was the Senior Director of Government Sales at SpaceX, where he was responsible for National Security Space (NSS) strategy and business development. Lars also led a distinguished USAF career. He holds advanced engineering degrees from the Air Force Academy, AFIT and the USAF Test Pilot School. He also earned national security degrees from MIT, Air University and National Defense University and an M.B.A. from UCLA.



Brig Gen (r) Wayne R. Monteith, Associate Administrator for Commercial Space Transportation, FAA

Mr. Monteith was appointed to his current position as the Federal Aviation Administration's Associate Administrator for Commercial Space Transportation in January 2019, after retiring from US Air Force as a Brigadier General. In this role he is responsible for regulating the safety of the US commercial space transportation industry. Mr. Monteith's last USAF assignment was operating the world's busiest spaceport leading over 9,000 military, civilian and contractor personnel. As the Commander of 45th Space Wing and Director of the Eastern Range, he oversaw the successful execution of 66 space launches, 23 booster landings and the first successful operational use of a fully autonomous flight safety system. Mr. Monteith has also served as the Assistant Deputy Under Secretary of the Air Force (Space), Senior Military Assistant to the Secretary of the Air Force, and as the Commander of the 50th Space Wing.



Jordan Noone, Co-Founder and Partner, Embedded Ventures

Jordan is a co-founder/Partner at Embedded Ventures, an early-stage venture capital fund focused on dual-use technologies. He is also a co-founder and the founding CTO of Relativity Space - building humanity's multiplanetary future. Relativity invented a new approach to design, build, and fly their own rockets, starting with Terran 1 - the world's first entirely 3D printed rocket. Relativity has raised \$700M in venture capital and was most recently valued at \$2.3B.



Casey Anglada DeRaad, Chief Executive Officer and Founder, NewSpace New Mexico

Casey Anglada DeRaad is CEO and Founder of NewSpace New Mexico, a non-profit established to grow the commercial space industry from New Mexico for the nation and to create a bigger voice to NM's space industry stakeholders from industry, Air Force, the national labs, and local, state, and federal organizations. Casey is an energetic builder of partnerships and growth strategies to help all stakeholders succeed. She has over 30 years of leadership experience in space technology, business development, investment leveraging, technology engagement/transfer, strategic planning, workforce development, and portfolio investment for Air Force, NASA and private industry. Casey has promoted opportunities for New Mexico students and industries for her entire career. Casey has her Master's in EE from UNM.



Scott Maethner, Strategy & Operations Lead, NewSpace New Mexico

Scott Maethner (Colonel, USAF Retired) is a results-oriented leader who helps people and organizations reach their full potential. He has over 29 years of experience in the areas of science & technology, space research & operations, program management, strategy & policy development, strategic planning, studies & analysis, corporate communications, sales, marketing, and talent acquisition.