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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

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

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



Authors:
Bruce Cahan and
Dr. Mir Sadat

The Great Game of Economics Afoot in Space

14 January 2021, 1:30PM-3:00PM EST

Moderated by NewSpace New Mexico



Keynote: Kevin O'Connell Director of the Office of Space Commerce at the U.S. Department of Commerce

Cross-Industry Panelists:



Carissa Christensen,
Chief Executive Officer and founder of Bryce



Keith W. Crane,
Economist,
Science & Technology Policy Institute (STPI)



Mike French, VP
Space Systems,
Aerospace Industries Association



Chris Johnson,
Space Law Advisor,
Secure World Foundation



Dr. Brendan Mulvaney,
Director, China Aerospace Studies Institute (CASI)



Christian Zur,
Executive,
Procurement & Space Industry Council, US Chamber of Commerce

"The Great Game of Economics Afoot in Space"

Thursday, 14 January 2021, 1:30-3:00 pm EST

Program

The Great Game of Economics Afoot in Space is the first webinar to delve into the substance of the recently released "Space Policies for the New Space Age: Competing on the Final Economic Frontier" [available here](#), a study on how to transform existing and emerging U.S. space policies, legislation, and strategies into action plans that will ensure U.S. strategic leadership in space for the 2040-2060 timeframe authored by Bruce Cahan (Stanford Lecturer) and Mir Sadat (former White House Official). The report is a continued assessment from the State of the Industrial Base Workshop 2020. Significant findings and recommendations in space policy and finance were developed in the Space Policy & Finance Working Group that are amplified in this report.

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.

"The Great Game of Economics Afoot in Space"

NewSpace New Mexico Welcome: Casey Anglada DeRaad

Introduction Webinar & Report: Bruce Cahan & Mir Sadat

Keynote: Kevin O'Connell, Director of the Office of Space Commerce at the U.S. Department of Commerce

Cross-Industry Panelists:

Moderator: Casey Anglada DeRaad

- Carissa Christensen – CEO & Founder, Bryce Space Technology
- Keith Crane - Keith W. Crane, Economist, Science & Technology Policy Institute (STPI)
- Mike French - Mike French, VP Space Systems, Aerospace Industries Association
- Christopher Johnson - Chris Johnson, Space Law Advisor, Secure World Foundation
- Brendan Mulvaney - Dr. Brendan Mulvaney, Director, China Aerospace Studies Institute (CASI)
- Christian Zur - Christian Zur, Executive, Procurement & Space Industry Council, US Chamber of Commerce

Q&A

Wrap Up and Report Overview – Bruce Cahan & Mir Sadat

Speaker Information:



Director of the Office of Space Commerce at the U.S. Department of Commerce

Kevin M. O'Connell is the Director of the Office of Space Commerce at the U.S. Department of Commerce. He leads an office with responsibility as a space industry advocate within the Executive Branch of the U.S. government. Mr. O'Connell brings over 35 years of experience in the U.S. government, in research organizations, and as an entrepreneur and business leader to this position. Mr. O'Connell has researched and written extensively on the policy, security, and global market issues related to commercialization of remote sensing. Mr. O'Connell's

background also includes extensive experience in national security and intelligence matters, including assignments in the Department of Defense, Department of State, National Security Council, and the Office of the Vice President.



Carissa Bryce Christensen, CEO & Founder, Bryce Space and Technology

Carissa Christensen is the Chief Executive Officer and founder of Bryce. She previously co-founded defense company The Tauri Group, acquired by LMI in 2019, and quantum computing software company QxBranch, acquired by Rigetti Computing in 2019. She is an active investor who serves on several early stage boards. Ms. Christensen is an internationally recognized expert on R&D processes, technology forecasting, and the space industry. She is currently a member of the National Research Council Space Technology Industry-Government-University Roundtable, which advises NASA. She has served on the World Economic Forum Global Future Council since 2018. She is a Senior Advisor to the annual US Air Force Schriever Wargame. She serves on the Advisory Council of the Aerospace Corporation's Center for Space Policy and Strategy. She guest lectures at universities internationally, has testified before Congress on space markets, and speaks regularly at events, including the White House Frontiers Conference, and the Harvard Business School Dialogue. She publishes extensively and is often cited in publications including The New York Times, The Washington Post, Wired, Fortune, and Le Temps. She has also appeared in space documentaries by The Financial Times and Bloomberg. Ms. Christensen is a graduate of Harvard University's Kennedy School, where she specialized in science and technology policy. She attended the London School of Economics and was a Douglass Scholar at Rutgers University. She is a Fellow of the American Institute of Aeronautics and Astronautics.



Keith W. Crane, Economist, Science & Technology Policy Institute (STPI)

Keith W. Crane is an economist who works on issues pertaining to space, civilian nuclear power, quantum technologies, energy and the environment. Prior to coming to STPI in 2016, he was Director of the RAND Corporation's Environment, Energy, and Economic Development Program. In addition to his work on technology, energy, and the environment, he has written extensively on Afghanistan, post-conflict nation building and economic development, China, and the transition economies of Eastern Europe and the Commonwealth of Independent States. In the fall of 2003, Dr. Crane served as an economic policy advisor to the Coalition Provisional Authority in Baghdad. Prior to rejoining RAND in February 2002, Dr. Crane was Chief Operating Officer and Director of Research at

PlanEcon, Inc., a research and consulting firm based in Washington, DC, that focused on Central and Eastern Europe and the former Soviet republics.



Mike French, VP Space Systems, Aerospace Industries Association

Mike French is Vice President for Space Systems at the Aerospace Industries Association. As the lead of the Space Systems policy division, Mike works with AIA's membership to advocate for policies, regulations, and investments that ensure American leadership and strong industry partnership across the civil, commercial, and national security sectors. Mike's experience in the space industry ranges from advising senior government leaders on space policy, to developing market forecasts and assessments for industry executives, to analyzing major space investments for companies and banks. He previously served as the Senior Vice President for Commercial Space at Bryce Space and Technology, a market analysis and management consulting firm. At Bryce, he advised major aerospace industry clients on management, policy, and investment decisions. Mike has also held several federal government positions, most recently serving as NASA's Chief of Staff, advising the NASA Administrator, White House, and other government leadership on national space policy issues. He received NASA's Distinguished Service Medal for his service. Prior to serving in government, he practiced law in the defense and aerospace sector in Los Angeles where he advised clients on matters regarding aircraft and aerospace weapons systems. Mike holds a Bachelor of Science in business administration from the Haas School of Business at the University of California, Berkeley and a J.D. from Harvard Law School.



Chris Johnson, Space Law Advisor, Secure World Foundation

Chris Johnson is the Space Law Advisor for the Secure World Foundation, and a Professor of Law (Adjunct) at the Georgetown University Law Center where he co-teaches the Space Law Seminar. He is also a Faculty Member at the International Space University, and a member of the International Institute of Space Law (IISL). Mr. Johnson has written widely on space law and policy issues, and represents the Secure World Foundation at the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS).



Dr. Brendan Mulvaney, Director, China Aerospace Studies Institute (CASI)

Dr. Brendan Mulvaney is the Director of the China Aerospace Studies Institute. Dr. Mulvaney served as a Marine for a quarter of a century, where he flew more than 2000 hours as a AH-1W Cobra pilot, and was an Olmsted Scholar in Shanghai, China. He served at Camp Pendleton, CA; in China as an Olmsted Scholar at Fudan University, where he earned his Ph.D. in International Relations; in Iraq; in Washington D.C. as the inaugural Director of the Commandant of the Marine Corps' Red Team, and most recently at U.S. Naval Academy in Annapolis where he was the Associate Chair for Languages and Cultures and taught Chinese language and culture.



Christian Zur, Executive, Procurement & Space Industry Council, US Chamber of Commerce

Christian Zur serves as executive staff to the Procurement and Space Industry Council at the U.S. Chamber of Commerce. He leads the Chamber's policy formulation and advocacy on defense acquisition and civilian space programs, in addition to commercial space regulation. His articles have been featured in publications such as Aviation Week, Defense News, The Hill, The Orlando Sentinel, Scientific American, The Seattle Times, and Space News. Christian recently served on NASA's independent review of the operations and management of the International Space Station (ISS) U.S. National Laboratory. Prior to joining the Chamber, Christian spent 12 years working on House and Senate staffs including six years on the House Armed Services Committee. Subsequently, he served as counsel to the chair of the Defense Policy Board as well as the Commission on the Future of the U.S. Aerospace Industry. Zur received his B.A. from the University of Massachusetts, Amherst, and his M.P.A. from George Mason University in Virginia. He also is a graduate of the U.S. Naval War College's Command and Staff College.



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 in New Mexico 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.