

**SMA Panel Discussion**

**Strategic Latency: Red, White, and Blue**

**Managing the National and International Security Consequences of Disruptive Technologies**

**Booklet**

**Tuesday, 7 May 2019**

**1300-1430 ET**

**Dial (866) 712-4038;**

**Passcode 37250264#**

Strategic Multi-Layer Assessment (SMA) provides planning support to Commands with complex operational imperatives requiring multi-agency, multi-disciplinary solutions that are NOT within core Service/Agency competency. Solutions and participants are sought across USG and beyond. SMA is accepted and synchronized by Joint Staff/J-39 DDGO and executed by ASD (EC&P).

# Agenda

**Panel Description:**

Strategic Latency refers to the potential for technology – new or old – to be exploited in ways that shift the global balance of power.  Many technologies are significant and bring important changes to national and international security, but only a few have truly strategic implications. In this latest addition to the Livermore Strategic Latency Project*, Strategic Latency: Red, White, and Blue* (download at no cost from cgsr.llnl.gov) examines the national security challenges posed by emerging and disruptive technologies. Red refers to foreign threats and strategic warning. White refers to the neutral/dual-use nature of S&T throughout history. Blue refers to current efforts by the USG to acquire cutting edge technologies. The authors in each section offer insights into the challenges and opportunities we face coping with the unprecedented quantity, quality, and availability of technologies such as biotech, metamaterials, cyber tools, AI, advanced manufacturing, and robotics. Which of these are truly revolutionary, and which represent incremental change?

### Speakers: The speakers for this discussion will include:

### Dr. James Canton (Institute for Global Futures)

### Dr. Zachary Davis (Lawrence Livermore National Laboratory (LLNL))

### Dr. Frank Gac (LLNL)

### Dr. James Giordano (Georgetown University)

### Lt Col Jennifer Snow (USSOCOM J5 Donovan Group)

* Mr. Wes Spain (LLNL)

**Agenda:** The following is an outline of the contents that each panelist will present during the discussion:

*Introduction*

### Dr. Zachary Davis (Lawrence Livermore National Laboratory (LLNL))

*The Red Side: S&T Threat Analysis for Strategic Warning*

### Dr. James Giordano (Georgetown University)

### Biotechnology, Commercial Veiling, and implications for Strategic Latency: The Exemplar of Neuroscience and Neurotechnology Research and Development in China

* Mr. Wes Spain (LLNL)
  + **Curious incidents: Dogs That Haven’t Barked**

### Dr. James Canton (Institute for Global Futures)

### Emerging Trends in Big Data and Artificial intelligence: Directions for the intelligence Community

### Lt Col Jennifer Snow (USSOCOM J5 Donovan Group)

### 3D Printing: Acknowledging the Dark Side and Why Speaking Openly About Technology Threat Vectors is the Right Answer

*The White Side: Latent Technology Trends and Timelines*

### Dr. Zachary Davis (Lawrence Livermore National Laboratory (LLNL))

### Terrorist Tech: How Will Emerging Technologies Be Used by Terrorists to Achieve Strategic Effects?

*The Blue Side: Technology Innovation and National Security Applications*

### Dr. Frank Gac (LLNL)

### What Works? Public–Private Partnerships for Development of National Security Technology

### Dr. Zachary Davis (Lawrence Livermore National Laboratory (LLNL))

### Closing Thoughts: Humanity, Machines and Power

# Speaker Biographies

### James Canton

Dr. James Canton is a renowned global futurist, social scientist, keynote presenter, author, and visionary business advisor. He is the author of *The Extreme Future: The Top Trends That Will Reshape the World in the 21st Century*, Dutton 2006, and *Technofutures: How Leading- Edge Innovations Will Transform Business in the 21st Century*, Next Millennium Press, 2004.

Dr. Canton is CEO and Chairman of the Institute for Global Futures, a leading think tank he founded in 1990 that advises business and government on future trends. He advises the Global Fortune 1000 on trends in innovation, financial services, health care, population, life sciences, energy, security, workforce, climate change, and globalization. From a broad range of industries, clients include: IBM, BP, Intel, Philips, General Electric, Hewlett Packard, Boeing, FedEx, and Proctor & Gamble. He is a Senior Fellow at the Center for Research in Innovation at Northwestern’s Kellogg School of Management and on the advisory board of the Corporate Eco Forum. He has advised three White House Administrations, the National Science Foundation, and MIT’s Media Lab, Europe.

A frequent guest of the media, Dr. Canton is a commentator on CNN. He was named “the Digital Guru” by CNN and “Dr. Future” by Yahoo. Dr. Canton’s media coverage has included CNBC, Fox, PBS, ABC, *Fortune, The Wall Street Journal, The Economist, Bloomberg Report, The New York Times, US News and World Report, CEO*, and *CIO* and *CFO* Magazines. His Global Futurist blog is followed by a world-wide audience. Dr. Canton serves as co-chairman of the Futures and Forecasting Track at Singularity University, which is educating a new generation of leaders to use advanced technologies to transform the planet for the better.

**Zachary S. Davis**

Dr. Zachary Davis is Senior Fellow at the Center for Global Security Research at Lawrence Livermore National Laboratory and a Research Professor at the Naval Postgraduate School in Monterey, California where he teaches courses on counterproliferation. He has broad experience in intelligence and national security policy and has held senior positions in the executive and legislative branches of the U.S. government. His regional focus is South Asia.

Davis began his career at the Congressional Research Service at the Library of Congress and has served in the State Department, the Arms Control and Disarmament Agency, Congressional committee staffs, and the National Security Council. In 2006–2007, he was Senior Advisor at the National Counter Proliferation Center, in the office of the Director of National Intelligence. He is the author of numerous government studies and reports on technical and regional proliferation issues. He currently leads a project on the national security implications of emerging and advanced technologies at LLNL and supports US Special Operations Command on the development of counterproliferation education programs.

Davis’s scholarly publications include articles in *Orbis, Asian Survey, Arms Control Today, Security Studies, The American Interest*, and chapters in numerous edited volumes. He was editor of the widely read 1993 book *The Proliferation Puzzle: Why States Proliferate and What Results*. His edited book on the 2002 South Asia crisis was published by Palgrave Macmillan in 2014. His new book, *Strategic Latency: Red, White and Blue*, will be published this year. Davis holds a doctorate and a master’s degree in international relations from the University of Virginia and earned his undergraduate degree from UC Santa Cruz.

### Frank Gac

Dr. Frank D. Gac retired in 2014, after an exciting and productive 38-year career with the Los Alamos National Laboratory. During that time, he served as an Executive Advisor to the Principal Associate Director for Global Security; led the Ceramic Science & Technology and International Research, Analysis, and Technology Groups; and was on Intergovernmental Personal (IPA) assignments with the Central Intelligence Agency and the Office of the Director of National Intelligence. He is currently a Guest Scientist with Los Alamos and

a Consultant to the Lawrence Livermore National Laboratory Center for Global Security Research. His B.S. and M.S. are in Ceramic Engineering from the University of Illinois and University of Missouri–Rolla, respectively, and his Ph.D. is in Materials Science & Engineering from the University of Washington.

### James Giordano

James Giordano, PhD, is Professor in the Departments of Neurology and Biochemistry, Chief of the Neuroethics Studies Program, Co-director of the O’Neill-Pellegrino Program in Brain Sciences and Global Law and Policy, and Assistant Director of the Brain Bank at Georgetown University Medical Center. As well, he is J5 Donovan Group Senior Fellow for Biowarfare and Biosecurity, at US Special Operations Command, (USSOCOM), and currently chairs the Neuroethics Subprogram of the IEEE Brain Project. He has served as Senior Science Advisory Fellow to the SMA Group of the Joint Staff of the Pentagon; as Research Fellow and Task Leader of the EU-Human Brain Project Sub-Program on Dual-Use Brain Science; as an appointed member of the Department of Health and Human Services Secretary’s Advisory Committee on Human Research Protections (SACHRP); and as senior appointed member of the Neuroethics, Legal and Social Issues Advisory Panel of the Defense Advanced Research Projects Agency (DARPA). Prof. Giordano is Editor-in-Chief of the BMC international journal *Philosophy, Ethics, and Humanities in Medicine*; Associate Editor-in-Chief of the *Cambridge Quarterly of Healthcare Ethics*, Associate Editor of the Springer journal *Neuroethics*, and Co-Editor in Chief of the Brill Press books series *HomoTechnicus-Technologicus*. The author of over 290 papers, 7 books, 21 book chapters, and 15 government white papers on brain science, ethics, and national defense, in recognition of his work he was elected to the European Academy of Science and Arts, and named an Overseas Fellow of the Royal Society of Medicine (UK).

### Jennifer Snow

Lt Col Jennifer Snow is the Donovan Group Innovation Officer for the U.S. Special Operations Command, Donovan Group Futures Plans and Strategy and SOFWERX Team. She serves as the military representative for technology outreach and engagement to bridge the gap between government and various technology communities to improve collaboration and communications and identify smart solutions to wicked problems and the development of future smart technology policy.

Lt Col Snow entered the Air Force in November 2002 as a graduate of the U.S. Officer Training School at Maxwell AFB in Montgomery, Alabama. She began her professional career as a member of Air Force Special Operations Command, served as an Air Education and Training Command intelligence instructor supervisor and was selected to be one of General Keith B. Alexander’s Junior Officer Cryptologic Career Program Interns at the National Security Agency. Prior to her current assignment, Lt Col Snow was a graduate student at the Naval Postgraduate School, where she studied emerging disruptive technologies and focused on a class of fast-moving emerging technologies she calls “Radical Leveling Technologies,” as an area of concern to National Security. Her work was presented to National Security Council staff at the White House. Her efforts focus on examining Radical Leveling Technologies through the lens of 3D printing and seek to address the broad implications of these technologies as well as the need to leverage the expertise, access, and capacity of the community of users and technology drivers to find innovative policy solutions while still enabling technology for good.

**Wes Spain**

Wes Spain is Senior Fellow at the Center for Global Security Research at Lawrence Livermore National Laboratory. He has broad experience in intelligence and national security, leading programs and activities in intelligence analysis, technology development, and business and program development, as well as intelligence and military teams overseas. Before joining LLNL, Wes served with Central Intelligence Agency and the Unites States Army. He holds an M.A. in international relations and a B.S. in political science.