



USC SHIELD Executive Program in Global Space and Deterrence

Developing Leaders in Policy, Space, and Technology for National Security

SHIELD

- **Space** - The domains that demand new engineering and policy innovations, physical and cyber, and their integration with Land, Sea, and Air.
- **History** - Past, present, and future, the lens through which we evaluate and formulate new Policies.
- **Industry** - The engine that translates academic work into reality.
- **Engineering** - The research, technology, and planning that organizes our vision.
- **Leadership** - The prime mover across all disciplines.
- **Deterrence** - Our goal in all our endeavors.

The USC SHIELD Executive Program in Global Space and Deterrence*

sets out to educate aspiring senior leaders from the military, government, and innovation communities about the intersection of public policy and engineering, which are too often separate within the complex and growing field of defense security.

This executive education program is designed for upwardly mobile professionals and leaders in their field. Program participants will take advantage of the flexibility and interactivity offered by engaging in a hybrid program model, with in-person and online engagement throughout the program. Upon successful completion of the program, participants receive a University of Southern California Continuing Education Certificate.

Duration: October 2026- April 2027; 18 Program Days

Schedule of Presentations (TENTATIVE)

Fall 2026-Spring 2027

Week One-USC Residency

Thursday, October 8, 2026

Location: GCS 107

8:15 AM

Check-In & Breakfast

8:45AM

USC and MDAA Program Welcome

Riki M. Ellison

Chairman & Founder

Missile Defense Advocacy Alliance

Candace House Teixeira, DPPD

Associate Dean, Corporate Engagement and Programs

Viterbi Admission and Student Engagement

Frank V. Zerunyan, J.D., LL.D. (hc)

Professor of the Practice of Governance

Director of Executive Education, Center on National Defense and Public Safety and ROTC Programs

Thursday, October 8, 2026

9:00AM-12:00PM

The Engineering Life-Cycle, and Which Life-Cycle Stages Are Most Influential On the Success of Missile Defense Projects

Neil Siegel, Ph.D.

*IBM Professor of Engineering Management and Professor of Industrial and Systems Engineering and Computer Science Practice
Lead Faculty Instructor*

Course Description:

An experienced and successful practitioner's view of the engineering life-cycle, the systems approach, an improved version of the "V" diagram, and lessons-learned about which stages have the most important influence on project success.

Learning Outcomes:

Understanding of the systems approach, the key characteristics and how they contribute to success, and insight into where engineering projects often "go wrong"

- Understanding of the systems approach
- Understanding of the key characteristics of the systems approach
- Learning how the systems approach contributes to project success
- Discuss where engineering projects often 'go wrong'
- How to ensure project success

12:00 PM

Lunch Forum

Mark Montgomery

Senior Director of the Center on Cyber and Technology Innovation
Senior Fellow of the Foundation for Defense of Democracies

1:00 PM

Lunch Break

Self- Guided USC Campus Tour (optional)

2:00pm-5:00pm

MDAA Capstone Work

Friday, October 9, 2026

Location: GCS 107

9:00AM-10:30AM

Leveraging Interactive Storytelling in Model Based Systems Engineering: A Transdisciplinary Systems Engineering Approach

Azad Madni, Ph.D.

Professor of Astronautics, Aerospace and Mechanical Engineering, and Education

Course Description:

Distributed collaborative engineering and system validation are two significant activities performed during complex system development that affect both system affordability and predictability. The former suffers from lack of full participation of all stakeholders especially in upfront engineering leading to extraneous design iterations and rework which invariably

translate into schedule- and cost-overruns. The latter is an activity that routinely runs into schedule and budget crunch and subsequent ad hoc cost-cutting measures that invariably escalate risk of unintended and undesirable outcomes. This lecture will describe innovations that are intended to ameliorate both these effects.

10:30AM-12:00PM

Civilian Resilience Is Now Inseparable from Military Readiness

Frank V. Zerunyan, J.D., LL.D. (hc)

Professor of the Practice of Governance

Director of Executive Education, Center on National Defense and Public Safety and ROTC Programs

12:00PM

Lunch Forum

John Rood

Former Undersecretary for Policy for the Department of Defense

1:00PM

Lunch Break

2:00PM-5:00PM

Public Trust and Legitimacy: Professional Leadership in National Defense and Public Safety

Frank V. Zerunyan, J.D., LL.D. (hc)

Professor of the Practice of Governance

Director of Executive Education, Center on National Defense and Public Safety and ROTC Programs

5:00PM-7:00PM

Welcome Reception- The Lab- USC Campus

Saturday, October 10, 2026

9:00am-2:00pm

Capstone Development & Teaming

Location: USC Campus, Ralph and Goldy Lewis Hall, RGL 101, 650 Childs Way, Los Angeles, CA 90089

Past SHIELD alumni will be in attendance to help with capstone development

- Mr. Riki M. Ellison
- Professor Frank Zerunyan
- Dr. Michael Falkow (Zoom)
- Dr. Jason Womack

Week Two-Online Interactive

Friday, October 16, 2026

9:00AM-12:00PM

Common Errors in Engineering Assessment, and How to Avoid Them

Neil Siegel, Ph.D.

*IBM Professor of Engineering Management and Professor of Industrial and Systems Engineering and Computer Science Practice
Lead Faculty Instructor*

Course Description:

In engineering, we make measurements and perform quantitative assessments; qualitative assessments are seldom adequate for our purposes. Unfortunately, there are many ways to introduce significant errors into the measurement and analysis processes. This lecture identifies the most-common of these errors, and how to avoid them.

Learning Outcomes:

An understanding that just because a number is presented, does not mean that it is correct!

An understanding of the principal sources of error in quantitative engineering analysis (e.g., measurement errors, analysis errors, logical fallacies, etc.), and how to do it better (e.g., avoiding weak statistics, avoiding mis-handling conditional probabilities,

12:00PM

Lunch Forum

TBD

1:30PM

Break

2:00PM-5:00PM

Optical Fiber and Free-Space Communications

Alan E. Willner

Andrew and Erna Viterbi Professorial Chair and Distinguished Professor of Electrical and Computer Engineering

Saturday, October 17, 2026

9:00AM-12:00PM

Collaboration Through Engagement: Processes and Practices for Effective Problem Solving

Tara Blanc, Ph.D.

*Associate Professor (Teaching)
USC Price School of Public Policy*

Course Description: According to public administration scholar Vincent Ostrom, societies that operate under a government founded on principles of separation of powers with checks and balances should presume that policies will come from interaction among multiple authorities.

Such a presumption calls for collaborative solutions to the problems facing our government, including those of our military forces. In this session, participants will explore the various principles and processes of collaboration through a focus on stakeholder engagement. The session will cover a wide range of methods and tools available to build collaboration and engage stakeholders and the key skills and competencies needed to do so effectively. Interactive discussions and small group work will offer participants the opportunity to enhance their understanding of collaboration through engagement and their capacity to design effective stakeholder engagement efforts.

Learning Objectives:

By the end of this session, participants will have:

- An increased understanding of the collaboration continuum
- An increased understanding of the goals, purposes, benefits, challenges, and measures of success for stakeholder engagement
- A sharpened knowledge of which engagement practices work (and don't work) under different contexts, situations, and purposes
- A broader understanding of the range of available methods, tools, and techniques used in practice and an increased capacity to determine their appropriateness in given circumstances
- Practice in planning and designing a process for participation and engagement

12:00PM

Lunch Break

12:30PM

Lunch Forum

TBD

1:30PM

Break

2:00PM-5:00PM

Collaboration Through Engagement: Processes and Practices for Effective Problem Solving: Workshop

Tara Blanc, Ph.D.

Associate Professor (Teaching)

USC Price School of Public Policy

Week Three - USC Residency

Wednesday, November 11, 2026

MDAA Site Visit-MDAA will provide details

Thursday, November 12, 2026

8:15AM

Check -In and Breakfast

8:45AM

Program Welcome

Riki M. Ellison

Chairman & Founder

Missile Defense Advocacy Alliance

Candace House Teixeira, DPPD

Associate Dean, Corporate Engagement and Programs

Viterbi Admission and Student Engagement

Frank V. Zerunyan, J.D., LL.D. (hc)

Professor of the Practice of Governance

Director of Executive Education, Center on National Defense and Public Safety and ROTC Programs

9:00AM-12:00PM

Policy Formulation: Creating Credibility In A Set of Recommendations

Neil Siegel, Ph.D.

IBM Professor of Engineering Management and Professor of Industrial and Systems

Engineering and Computer Science Practice

Lead Faculty Instructor

Course Description:

It is not enough to have good ideas; one must convey those ideas in a fashion that results in other supporting them; other people – including those who make policy and funding decisions -- must find these new ideas and recommendations credible. There is a tendency to attempt to create support for an engineered system (such as a new weapon) through a set of technological and financial analyses. It is the instructor's experience that this seldom is effective; most of the key decision-makers in U.S. government policy and fiscal positions are not engineers, and they simply often do not believe the technical analyses. In this module, the instructor introduces a more-comprehensive (and in his experience, a more effective) approach, one that balances the technological and financial analyses with what he calls mission analyses.

Learning Outcomes:

Understanding of a candidate approach for creating policy and procurement recommendations that are more credible. Insight gained through examples and case studies.

12:00 PM

Lunch Break

12:30pm-2:00PM

Intercept 1961. From the First Intercept of a Long-Range Ballistic Missile to Soviet Missile and Space Defense

Mike Gruntman, Ph.D.

Professor of Astronautics and Aerospace and Mechanical Engineering

Course Description:

The story focuses on the origins of Soviet air defense and then strategic missile defense, with the first long-range ballistic missile intercept in 1961. The deployment of operational missile defense followed, a major factor in the Cold War, shaping the defense policies and programs of the two superpowers.

2:00PM-5:00PM

Case Studies In Space Air Defense and Missile Defense...and More

Neil Siegel, Ph.D.

*IBM Professor of Engineering Management and Professor of Industrial and Systems Engineering and Computer Science Practice
Lead Faculty Instructor*

Course Description:

Lessons learned from a life-time of building important, successful, and innovative space, air defense and missile defense systems. Most of the examples will deal with the technical issues encountered and overcome, but other examples (e.g., technical solutions to “red-tape” problems, etc.) will be included, as well.

Learning Outcomes:

Insights into where the problems actually are (in contrast to where many people expect them to be), the role of innovation, and how to innovate.

Friday, November 13, 2026

8:00AM-9:00AM

Check -In and Breakfast

9:00AM-12:00PM

Institutional Design and Policy Evaluation- Policy Design Concepts & Analytics

Rym Kaki, Ph.D.

*Associate Professor (Teaching)
Vice Chair of the Department of Governance and Management USC Sol Price School of Public Policy*

Course Description:

Professor Khaki will be teaching a seminar with learning goals to include:

- 1) gaining an overview of key concepts, theories, analytics and practical research on organizations and organizing
- 2) examining the complex relationship between individual behavior and organizations
- 3) understanding how public, private, and nonprofit organizations are shaped by their gravitating political, social and economic environments and
- 4) evaluating policy and policy alternatives.

12:00PM

Lunch Forum

TBD

1:30PM

Break

2:00PM

Capstone Collaboration Part II

Week Four-Washington D.C. Residency

Thursday, January 28, 2027

Site visit coordinated by MDAA

Friday, January 29, 2027

8:30AM

Check -In and Breakfast

9:00AM-12:00PM

AI-Enabled ALL Domain Operations (ADO)

Randall W. Hill Jr., Ph.D.

Research Professor, Executive director of the USC Institute for Creative Technologies

Ryan McAlinden

Adjunct Assistant Professor of the Practice

Director of Defense and Intelligence Programs for the USC Institute for Creative Technologies

Course Description:

Joint All-Domain Command & Control (JADC2) is a familiar concept to many within DoD, though its implementation remains elusive. This lecture will present the components of JADC2, and potential strategies for the integration of enabling research & technologies into a connected framework. Use cases and examples from across the Services will be highlighted.

12:00PM

Lunch Forum

TBD

1:00PM

Break

2:00PM-5:00PM

Big Data Management with Distributed Computing

Seon Ho Kim, Ph.D.

Associate Director of the Integrated Media Systems Center at the USC Viterbi School of Engineering

Course Description:

Data science is an essential part of many industries today, given the massive amounts of data that are produced, and is one of the most essential topics in IT. Its popularity has grown over the years, and companies have started implementing data science techniques to grow their business. This course provides an overview of broad data science concepts and big data.

Saturday, January 30, 2027

8:30AM

Check -In and Breakfast

9:00AM

MDAA EXPERTS and Capstone Feedback

12:00PM

Lunch Forum

1:00PM

Break

2:00PM-5:00PM

MDAA EXPERTS and Capstone Feedback

Week Five-Online Interactive

Friday, February 19, 2027

9:00AM-12:00PM

Ethical Decision Quality, risk analysis, multi-attribute utility theory, information theory, Bayesian analysis, and data-based decision making

Ali E. Abbas, Ph.D.

Professor of Industrial and Systems Engineering and Public Policy

Course Description:

Decision analysis is an essential life skill, but most people only acquire it through trial and error. This module will present the foundations of decision-making in government organizations as well as large enterprises. The module has two main objectives: the first is to give an overview of decision-making and the need for a sound decision-making process. The second is to demonstrate the use of decision analysis in military technology and homeland security decisions.

12:00PM

Lunch Forum

TBD

1:00PM

Lunch Break

2:00PM-5:00PM

Ethical Decision Quality, risk analysis, multi-attribute utility theory, information theory, Bayesian analysis, and data-based decision making: Workshop

Ali E. Abbas, Ph.D.

Professor of Industrial and Systems Engineering and Public Policy

Course Description:

Decision analysis is an essential life skill, but most people only acquire it through trial and error. This module will present the foundations of decision-making in government organizations as well as large enterprises. The module has two main objectives: the first is to give an overview of decision-making and the need for a sound decision-making process. The second is to demonstrate the use of decision analysis in military technology and homeland security decisions.

Saturday, February 20, 2027

9:00AM-12:00PM

Team-Building, Motivation, and Conflict Management on Complex Engineering Projects

Neil Siegel, Ph.D.

*IBM Professor of Engineering Management and Professor of Industrial and Systems Engineering and Computer Science Practice
Lead Faculty Instructor*

Course Description:

Everything worth doing in engineering involves lots of people, so “social considerations” are very important to project success. This lecture provides one practitioner’s view of motivation, team-building, conflict identification / resolution, and many other aspects of these “social considerations”.

Learning Outcomes:

- Understanding why social considerations are important to project success
- Methods for achieving team alignment, motivation
- Retention of employees
- Conflict identification and resolution
- Other “social” aspects of engineering project management.

12:00PM

Lunch Forum

TBD

1:00PM

Lunch Break

2:00PM-5:00PM

AI and Quantum Computing

Dr. Andrew Tun

Chief Information Security Officer (CISO), Los Angeles Air Force Base

Week Six-Online Interactive

Friday, March 19, 2027

9:00AM-12:00PM

Organizational Behavior and Leadership

Jason W. Womack, Ed.D.

USC Sol Price School of Public Policy Fellow & U.S. Space Force

12:00PM

Lunch Forum

TBD

1:00PM

Break

2:00PM-5:00PM

Organizational Behavior and Leadership

Jason W. Womack, Ed.D.

USC Sol Price School of Public Policy Fellow & U.S. Space Force

Saturday, March 20, 2027

9:00AM

Risk and opportunity management for complex engineering projects

Neil Siegel, Ph.D.

*IBM Professor of Engineering Management and Professor of Industrial and Systems
Engineering and Computer Science Practice
Lead Faculty Instructor*

12:00PM

Lunch Forum

1:30PM

Break

2:00PM-5:00PM

Capstone Workshop

Dr. Michael Falkow

Week Seven- Spring USC Residency

Thursday, April 22, 2027

Site Visit Coordinated by MDAA

Friday, April 23, 2027

8:15AM

Check-In and Breakfast

Riki M. Ellison

Chairman & Founder

Missile Defense Advocacy Alliance

Candace House Teixeira, DPPD

Associate Dean, Corporate Engagement and Programs

Viterbi Admission and Student Engagement

Frank V. Zerunyan, J.D., LL.D. (hc)

Professor of the Practice of Governance

Director of Executive Education, Center on National Defense and Public Safety and ROTC

Programs

9:00AM-12:00PM

Using Artificial Intelligence in Societal Systems

Neil Siegel, Ph.D.

IBM Professor of Engineering Management and Professor of Industrial and Systems

Engineering and Computer Science Practice

Lead Faculty Instructor

12:00PM

Lunch Forum

TBD

1:30PM

Break

2:00PM-5:00PM

Capstone Project Collaboration

Saturday, April 24, 2027

8:30AM

Breakfast

9:00AM

Capstone Introduction and Presentations

12:30PM

Lunch Forum

2:00PM

Capstone Presentations

3:30PM-5:30PM

Certificate Ceremony; USC University Club

***Important Note:** This is a non-degree continuing and executive education program. Upon successful completion, individuals receive a continuing education certificate.

The USC SHIELD Executive Program in Global Space and Deterrence is a joint program between the University of Southern California's Price School of Public Policy and the Viterbi School of Engineering. Its creation benefited from an engagement with MDAA.



Faculty Presenter Profiles (Proposed)



Ali E. Abbas, Ph.D.

Dr. Ali E. Abbas is Professor of Industrial and Systems Engineering and Public Policy, a joint appointment between the USC Viterbi School of Engineering and the USC Price School of Public Policy. He previously served as the Director of the USC Neely Center for Ethical Leadership and Decision Making (DECIDE) and the USC Center for Risk and Economic Analysis of Terrorism Events (CREATE).

Before joining USC, Dr. Abbas was the Art Davis Faculty Scholar in the Department of Industrial and Enterprise Systems Engineering, College of Engineering, University of Illinois at Urbana-Champaign. Prior to his time at the University of Illinois, Dr. Abbas was a lecturer in the Department of Management Science and Engineering, Stanford University, where he also earned his Ph.D. in Management Science and Engineering, Ph.D. minor in Electrical Engineering, M.S. in Engineering Economic Systems and Operations Research, and M.S. in Electrical Engineering.

The recipient of multiple awards from the National Science Foundation for his work, Dr. Abbas' research focuses on decision analysis, risk analysis, multiattribute utility theory, and data-based decision making. He is widely published in books, journals, and conference publications, and has shared his expertise through television appearances, TEDx and other invited talks.

Dr. Abbas regularly teaches courses on decision analysis, and has taught numerous executive education courses at a variety of institutions, such as Stanford University, BP, Southern California Edison and numerous other institutions.

In addition to his academic career, Dr. Abbas is founder, president, and CEO of Ahoona Corp, a decision making social network that has several thousand users around the world. He has been on the Advisory Boards of Hedgestreet Inc., a binary futures exchange, and is a board member of the Decision Education Foundation, a volunteer nonprofit organization that empowers youth to make better decisions about their lives. Dr. Abbas also has extensive consulting and management experience.



Tara A. Blanc, Ph.D.

Tara A Blanc, Ph.D., is an associate professor (teaching) in the USC Sol Price School of Public Policy. She has taught at both the undergraduate and graduate level, including courses in public administration and public management, performance management, strategic planning, human resource management, public service ethics, leadership, organizational behavior, and the MPA capstone. Her research interests include civic engagement, political behavior,

and direct democracy.

Prior to joining the USC faculty, Dr. Blanc was a faculty member in the School of Public Affairs at Arizona State University and served for eight years as associate director for the ASU Cronkite/Eight Public Opinion Poll, coordinating the design, implementation, data analysis, and dissemination of monthly public opinion polls measuring attitudes about politics and public policy in Arizona.

Dr. Blanc earned a bachelor of arts degree in journalism, a master's degree in mass communication, and a doctor of philosophy degree in public administration from Arizona State University. In addition to teaching full time, she is a consultant and author with more than 30 years of experience, providing research and consulting services to clients in both the public and private sectors. She resides in Tempe, Arizona.



Mike Gruntman, Ph.D.

Mike Gruntman, Ph.D. is a Professor of Astronautics and Aerospace and Mechanical Engineering.

His research focuses are: Astronautics, spacecraft and space mission design, space physics, space instrumentation and sensors, space plasmas, spacecraft technologies, rocketry, propulsion, orbital debris, missile defense. Dr. Gruntman has authored and co-authored more than 300 scholarly publications, including 4 books. His education videos have over 1.2 million views on YouTube. Dr. Gruntman is a member (Academician) of the International Academy of Astronautics.

Awards:

2011 NASA Group Achievement Award

2006 International Academy of Astronautics Luigi Napolitano Award

2001 NASA NASA Group Achievement Award

2000 NASA NASA Group Achievement Award

1999 USC Viterbi School of Engineering Exceptional Service Award

1998 Los Angeles Section of the American Institute of Aeronautics and Astronautics Certificate

1997 Los Angeles Section of the American Institute of Aeronautics and Astronautics Certificate of Appreciation



Randall W. Hill Jr., Ph.D.

Randall W. Hill, Jr. became the executive director of the USC Institute for Creative Technologies in 2006. A leader in understanding how classic storytelling and high-tech tools can create meaningful learning experiences, Hill steers the institute's exploration of how virtual humans, mixed reality worlds, advanced computer graphics, dramatic films, social simulations and educational video games can augment more traditional methods for imparting lessons.

He oversees a diverse team of scientists, storytellers, artists and educators as they pioneer and evaluate new ways to deliver effective teaching and training in areas including leadership, cultural awareness, negotiation and mental health treatment and assessment. Hill is also a research professor of computer science at the USC Viterbi School of Engineering. His research focus is on using intelligent tutoring systems and virtual humans to create immersive learning environments.

Hill's career at USC began in 1995 at the USC Information Sciences Institute where he worked on the development of models of human behavior and decision-making for real-time simulation environments. He joined the USC Institute for Creative Technologies in 2000 as a senior scientist. Prior to his work at USC, Hill served as a group supervisor and the work area manager for network automation in the Deep Space Network Advanced Technology Program at NASA's Jet Propulsion Laboratory.

Hill graduated with a bachelor of science degree from the United States Military Academy at West Point and subsequently served as a commissioned officer in the U.S. Army for six years with assignments in field artillery and military intelligence. He earned his M.S. and Ph.D. degrees in computer science from the University of Southern California. He is a member of the American Association for Artificial Intelligence and has written over 50 technical publications, including a co-authored article, "Toward Virtual Humans" featured in AI Magazine in the summer of 2006.



Rym Kaki, Ph.D.

Vice-Chair of the Department of Governance and Management
Dr. Kaki's teaching and research foci pertain to human behavior in public and non-profit organizations, development NGOs' project design and evaluation, comparative public policy analysis, international development administration and social finance innovations as applied to urban poverty reduction policy. She hails from the global social finance and micro-enterprise development professions where she worked

in strategic management, research and development, program evaluation and social impact assessment. She brings extensive practical experience in designing and evaluating financial and non-financial solutions to support community-oriented economic empowerment and financial inclusion, with global consultancy assignments taking her to the North Africa,

Middle East and South Asia regions.

She is currently a board member of the Section on International and Comparative Public Administration (SICA) at the American Society of Public Administration (ASPA). In 2018, she has co-founded the new Section on African Public Administration (SAPA) at ASPA, bringing together American, diaspora and global scholars and practitioners with a commitment to advance the science, processes and art of public administration on the African continent.

Dr. Kaki was a Fulbright scholar, a Visiting Assistant Professor and Director of International Education at the South Mediterranean University. She is currently the Vice Chair of the

Department of Governance and Management at the Price School. She holds an M.A. in International Policy Studies, Monterey Institute of International Studies.



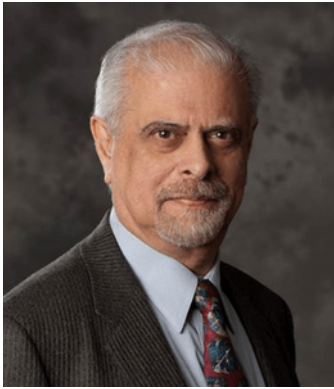
Seon Ho Kim, Ph.D.

Seon Ho Kim, Ph.D. is the Associate Director of the Integrated Media Systems Center at the USC Viterbi School of Engineering. He also teaches Data Informatics in the Data Program at the USC Viterbi School of Engineering.

He received his BS degree in Electronic Engineering from the Yonsei University, Seoul, Korea in 1986. He received his M.S. in Electrical Engineering and Ph.D. in Computer Science from the University of Southern California in 1994 and 1999 respectively.

Between 1999 and 2010, he worked as a faculty member at University of Denver, Colorado, and University of the District of Columbia, Washington DC.

Dr. Kim's current research interest is on spatial database, Big Data, IoT and Smart City, multimedia systems, and image machine learning. He has been leading MediaQ project which is a social media data collection and management platform, and recently TVDP project which focuses on a translational visual data platform for urban geo-tagged visual data collection, processing, and analysis. Dr. Kim's projects have been funded by US federal and local government, industries such as Google, Northrop Grumman Corp., Microsoft, Oracle, and Intel. He is a senior member of IEEE and a member of ACM. He worked as the president of KSEA-SC (Korean American Scientists and Engineers Association Southern California Chapter) and the president of KOCSEA (Korean Computer Scientists and Engineers in America).



Azad Madni, Ph.D.

Azad M. Madni is a Professor of Astronautical Engineering and Executive Director of USC's Systems Architecting and Engineering Program in the Viterbi School of Engineering. He is also the Director of the Distributed Autonomy and Intelligent Systems Laboratory. He is the chair and co-founder of the IEEE SMC's award-winning Technical Committee for Model-Based Systems Engineering. He has served as General Chair of the Conference on Systems Engineering Research since 2008. He is an AAAS Fellow, AIAA Fellow, IEEE Life

Fellow, IETE Life Fellow, INCOSE Fellow, and SDPS Fellow and has received prestigious awards and honors from nine different societies. His research has been sponsored by several government agencies including DARPA, DHS S&T, DoD-SERC, NASA, DTRA, OSD, MDA, ONR, AFOSR, AFRL, ARI, ARL, RDECOM, CECOM, ERDC, NAVAIR, NAVSEA, SPAWAR, MARCOR, DOE, and NIST. His research has also been sponsored by major aerospace and automotive companies including Boeing, General Motors, Raytheon, Northrop Grumman Corporation, SAIC, and Lockheed Martin. Upon joining USC, he was on the faculty of Northwestern University's McCormick School of Engineering and Applied Science.



Ryan McAlinden

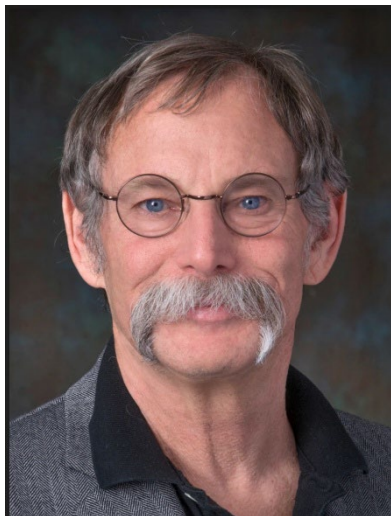
Ryan McAlinden is Director of Defense and Intelligence Programs for the USC Institute for Creative Technologies (ICT). Previously he served as senior advisor, Synthetic Training Environment (STE) Cross Functional Team (CFT) for the Army Futures Command and as ICT's Director of Modeling, Simulation & Training at the USC Institute for Creative Technologies (ICT), leading projects primarily for the US Department of Defense centered around geospatial visualization and analysis. He is an adjunct assistant professor

of the practice of spatial sciences with the USC Spatial Sciences Institute.

His primary research interest is identifying, developing and employing novel ways for human users to exploit and better understand the 3D virtual world around them. Immersive mediums like virtual and augmented reality continue to proliferate and are now mainstays in our society. Map-based big data are used in many of the most popular applications on our devices, from review apps, to ride sharing, to self-driving cars. However, the ability to produce and visualize 3D geospatial content for these devices remains elusive, mostly because the process for creating such content is existentially an anthropomorphic process, and as a result time-consuming, inefficient and often inconsistent.

McAlinden's goal, through automation, is to ease the burden of generating 3D terrain content for our electronic devices and systems, as quickly and cost-effectively as possible. Ultimately, he seeks to improve the agency that human users have with their maps, and reduce the human load for creating them.

McAlinden rejoined ICT in 2013 after a three-year post as a senior scientist at the North Atlantic Treaty Organization (NATO) in The Hague, Netherlands. There he led the provision of operational and geospatial analysis support to the International Security Assistance Force (ISAF) Headquarters in Kabul, Afghanistan. Prior to joining NATO, McAlinden worked as a computer scientist at ICT from 2002 through 2009 where he led several projects related to geospatial modeling and simulation.



Neil Siegel, Ph.D.

Lead Faculty Instructor

Neil Siegel is the IBM Professor of Engineering Management in the Epstein

Department of Industrial and Systems Engineering within the Viterbi School of Engineering at the University of Southern California. He is a recognized expert in the design and development of large, complex systems that serve important societal needs, both as a practitioner at the largest scales, and as a researcher.

Until the end of 2015, he held the position of sector vice-president and chief technology officer at Northrop Grumman.

He led the sector's technology activities, provided oversight of the sector's research portfolio (\$600M / year), and oversaw the design and development of solutions for their customers' most complex and most-important problems. Prior to that role, Dr. Siegel was the sector's vice-president and chief engineer, where he oversaw the sector's 12,000plus scientists and engineers, directed engineering process improvements, and led activities intended to further the development of the company's top technical talent.

Previously, Dr. Siegel served as vice-president and chief technology officer of Northrop Grumman's Mission Systems sector, and before that, vice-president and general manager of the company's Tactical Systems division. He has been responsible for engineering projects outside of the United States, including work in the U.K., NATO, Saudi Arabia, etc. In all, he served as a vice-president of the company for nearly 18 years.

Dr. Siegel led the engineering on a large number of successful fielded military, intelligence, and commercial systems, including the U.S. Blue-Force Tracker; the Army's first unmanned aerial vehicle; the Forward-Area Air Defense system; the fire-control segment of the world's first complete laser weapon system; and played important roles for many other systems for

ground, sea, space, and cyber-space. He has made a particular specialty of air-defense and missile-defense systems. These systems have repeatedly been cited as model programs and important national capabilities. He also led work for the steel industry, the movie industry, the healthcare industry, and the electric power industry. The concepts he helped to invent to reduce unintended interactions between drugs prescribed by different doctors are used almost universally in the U.S, saving many lives each year. He invented concepts that are used in a very large number of consumer devices around the world (including GPS receivers, smart phones, and tablet computers). He is a recognized expert in information networking, especially network management, wireless networks, and networks of mobile devices. He holds nearly 50 issued

and pending patents worldwide. His expertise is recognized by the U.S. Government, as indicated by past membership on the Defense Science Board, the Army Science Board, and other senior government advisory panels.

He is certified by the International Congress on Systems Engineering (INCOSE) as an expert systems engineering practitioner (ESEP; their highest level of certification), and also a certified “black-belt” practitioner in the well-known 6-sigma process-optimization methodology.

Dr. Siegel has a doctorate in systems engineering from the University of Southern California. His advisor there was the noted computer scientist and systems engineer Dr. Barry Boehm. Among his many honors are the following:

Election to the U.S. National Academy of Engineering

Selection as a fellow of the U.S. National Academy of Inventors

Selection as a fellow of the Institute of Electrical and Electronics Engineers (IEEE)

Selection as a Fellow of the International Congress on Systems Engineering (INCOSE)

The IEEE Simon Ramo Medal for systems engineering and systems science

His former company’s Chairman’s Award for Innovation (three times)

The Army’s Order of Saint Barbara

The iCMG award for system architecture

The Northern Virginia Technology Council CTO-of-the-year award

Recent publications include a textbook on engineering project management (Wiley), and a chapter in a book on ethics in engineering (Cambridge University Press). Public service includes board positions for two charitable organizations (including the largest non-profile hospice in California), 10 years as an elected public official (California Hazard Abatement District board), membership on the board of directors for the Electric Infrastructure Security Council, and former membership on the research foundation of the State University of New York, as well as many other items.



Jason W. Womack, Ed.D.

Sol Price School of Public Policy & U.S. Space Force

Dr. Jason W. Womack is the Space Systems Command (SSC) Policy Fellow at the USC Sol Price School of Public Policy, where he teaches organizational behavior and leadership. He is the Strategist for Leader Development and Operational Readiness at SSC, United States Space Force.

His teaching and research focus on reflective practice and the conditions that allow organizations to perform together across institutional boundaries: how coherence, trust, and shared understanding form, how leaders develop adaptive capacity, and why partnerships among military, government, industry, and academic organizations succeed or fail.

He previously served as Chief of the Development Branch at Space Training and Readiness Command. Prior to that, he was an Assistant Professor at Air War College and a faculty member in the Leader Development Course at the Eaker Center, Air University, where he designed curriculum, developed faculty, and taught more than 2,500 squadron commanders and senior enlisted leaders. His awards include the Secretary of the Air Force Leadership Award, the Air Force Exemplary Civilian Service Award, the Eaker Center Team of the Year, and the Master Instructor Badge.

Before government service, he spent nearly two decades as a consultant and executive coach and has spoken in 37 countries. He is the author of *Your Best Just Got Better and Get Momentum* (John Wiley & Sons), an ICF-credentialed coach, and Honorary Commander of the 353rd Recruiting Squadron, March ARB, CA. He earned an Ed.D. in Organizational Change and Leadership from the University of Southern California, an M.A. in Psychology from the University of Santa Monica, and an M.Ed. and two B.A. degrees from the University of California, Santa Barbara. In 2024, he completed Air War College, the Air Force's senior-level professional military education program; in 2025, he completed Space 200, the in-residence development program through the National Space Security Institute.



Alan Willner, Ph.D.

Alan Willner received the Ph.D. (1988) in Electrical Engineering from Columbia University, as well as a B.A. (1982) in Physics and an Honorary Degree (Honoris Causa, 2012) from Yeshiva University. Prof. Willner was a Postdoctoral Member of the Technical Staff at AT&T Bell Laboratories and a Member of Technical Staff at Bellcore. He is currently the Andrew and Erna Viterbi Professorial Chair and Distinguished Professor of

Electrical and Computer Engineering in the Ming Hsieh Department of Electrical Engineering. Prof. Willner has been: a Visiting Professor at Columbia University, the Univ. College London, and the Weizmann Institute of Science; and a Visiting Scholar at Yeshiva University. He was a Member of the U.S. Army Science Board, was a Member of the Defense Sciences Research Council (a 16-member body that provided reports to the DARPA Director and Office Directors), has served on many scientific advisory boards for small companies, and has advised several venture capital firms. Additionally, Prof. Willner was Founder and CTO of Phaethon Communications, a company whose technology was acquired by Teraxion, that created the ClearSpectrum® dispersion compensator product line which is presently deployed in many commercial 40-Gbit/s systems worldwide.

Prof. Willner's professional activities have included: Co-Chair of the U.S. National Academies Committee on the Optics and Photonics Study, President of The Optical Society (OSA), President of the IEEE Photonics Society (formerly LEOS), Co-Chair of the Science & Engineering Council of the OSA, Vice-President for Technical Affairs of the IEEE Photonics Society, Photonics Division Chair of OSA, Chair of the IEEE TAB Ethics and Member Conduct Committee, General & Program Co-Chair of the Conference on Lasers and Electro-Optics (CLEO), Program Co-Chair of the OSA Annual Meeting, General Chair of the IEEE LEOS Annual Meeting, Program Chair of Telecommunications Engineering at SPIE's Photonics West, Chair of the Unclassified Technical Program for IEEE MILCOM, Elected Member of the Board of Governors for the IEEE Photonics Society, General Co-Chair of the IEEE Photonics Society Topical Meeting on Broadband Networks, Steering Committee and Technical Committee Member of the Conference on Optical Fiber Communications (OFC), and Member of the US Advisory Committee for Int'l Commission for Optics (activity of the National Academies, IEEE, OSA and SPIE). Prof. Willner was an invited foreign dignitary representing the sciences for the 2009 Nobel Prize Ceremonies in Stockholm.

Prof. Willner's editorial positions have included: Editor-in-Chief of the IEEE/OSA Journal of Lightwave Technology (JLT), Editor-in-Chief of OSA Optics Letters, Editor-in-Chief of the IEEE Journal of Selected Topics in Quantum Electronics, Associate Editor of the IEEE Journal of Selected Areas in Communications Series on Optical Networks (now IEEE/OSA JOCN), Guest Editor of JLT and JSAC for the Joint Special Issue on Multiple-Wavelength Technologies & Networks, and Guest Editor of IEEE J. of Quantum Electronics Focus Issue on High-Capacity Optical Transmission Systems.

Prof. Willner has >1450 publications, including one book, 10 edited books, ~38 U.S. patents, ~45 keynotes/plenaries, ~23 book chapters, >400 refereed journal papers, and >300 invited papers/presentations. His research is in optical technologies, including: communications, signal processing, networks, and subsystems.



Frank Vram Zerunyan, J.D.

Frank Vram Zerunyan, JD is a Professor of the Practice of Governance at the Sol Price School of Public Policy and Director of Executive Education at USC Price Bedrosian Center on Governance and The Neely Center for Ethical Leadership and Decision Making, an Interdisciplinary Center USC Marshall USC Viterbi and USC Price (DECIDE), as well as Director of ROTC Programs. His key areas of expertise include Local Governments, Public Private Partnerships, Civic and Ethical Leadership, Land Use, Regulation, Negotiation and Executive Education. He teaches graduate courses on Intersectoral

Leadership (Collaborative Governance), Business and Public Policy, International Issues in Public Policy, Negotiation, Place Institutions and Governance as well as International Laboratory. Frank also lectures locally and globally to build capacity and foster leadership among public executives worldwide. In his capacity as an honorary instructor colonel in the Armenian Army and Air Force, he lectures, coaches and advises on academic affairs at the Vazgen Sargsyan Military University in Armenia. For his influential work over the past five years in Armenia, he was awarded LL.D. Doctor of Laws – Honoris Causa by the Public Administration Academy of the Republic of Armenia.

Frank is a three term Mayor and still serving Council member in the City of Rolling Hills Estates, California. In his role as a public official, after serving as Chair of the Planning Commission in Rolling Hills Estates, Frank was elected to the City Council in 2003 and re-elected in 2007, 2011 and 2015. He previously served and continues to serve on various regional public boards, including law enforcement, sanitation, technology and transit. He has chaired and continues to chair select city government committees in Rolling Hills Estates. Frank's public service on various local government policy committees extends statewide with the California League of Cities, California Contract Cities Association and Southern California Association of Governments. In 2008, Frank was elected and assumed a leadership role as the 52nd President of California Contracts Cities Association, the second largest municipal organization in the state of California with approximately 70-member cities and 7 million residents.

As a gubernatorial appointee under Governor Schwarzenegger, Frank was a state regulator serving on the Medical Board of California in the Department of Consumer Affairs. He was elected by the Board to serve as its Vice President. After five years of service on the Medical Board, Frank's term expired in June of 2011. His responsibilities on the Medical Board

included the promulgation of regulation, professional discipline and the sixty million plus budget of the Medical Board.

In January of 2013, Frank was appointed to an ad hoc experts committee on capacity building in public administration at the United Nations Division for Public Administration and Development Management in the Department of Economic and Social Affairs. In that capacity, he lectures and conducts capacity building seminars at UN headquarters in New York as well as at UN Forums around the world. As part of his global academic service focused on governance, Frank was appointed to the Editorial Council of the Public Administration Scientific Journal for the Republic Armenia.

Frank has more than 30 years of comprehensive and multi-sectorial experience as a lawyer, judge pro tem, author, consultant, director, board member, professor and public servant. Frank has been honored as one of Southern California Magazine's Super Lawyers since 2004, The Legal Network's Top Lawyers in California, Marquis' Who's Who in America and American Law and Government institutions like the California Assembly, the California Senate, the County of Los Angeles and various city governments for his leadership in the public sector. In the not for profit sector, Frank chaired the Daniel Freeman Hospitals Foundation in 2001-02 and oversaw the successful distribution of \$8 million in gifts. He has acted as a policy advisor and counsel to the Armenian National Committee of America in Washington DC. Frank also served as chairman of the Board of Governors of the worldwide Armenian Bar Association. As a lawyer, he is licensed to practice law in California, District of Columbia (inactive), Courts of International Trade, Federal Courts in the 9th Circuit, and the Supreme Court of the United States of America.

Frank earned his Doctor of Jurisprudence (Doctor of Laws) degree from Western State University College of Law and his Bachelor of Arts degree from California State University Long Beach. He also completed his advanced legal studies in Corporate Taxation at the University of Southern California Law Center (USC Gould). He is a graduate of California League of Cities' Civic Leadership Institute, an educational forum for the state's rising leaders.