

Contact

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Top Skills

Program Management
Mechanical Engineering
Engineering

Honors-Awards

Defense Medal for Exceptional Public Service
Invited Keynote Address
Invited Panelist - Power of the Public for Nuclear Nonproliferation
Invited Keynote Speaker - Dinner with a Scientist Event
2012 Volunteer of the Year

Publications

Maintaining the Competitive Advantage in Artificial Intelligence and Machine Learning
Space Technology in Support of Cooperative US-Ukraine Efforts to Mitigate Damage at the Chernobyl Unit-4 Nuclear Power Plant
Strategies for Acquisition Agility: Approaches for Speeding Delivery of Defense Capabilities
Radiation Hardened Mobile Vehicle for Chernobyl Dismantlement and Nuclear Accident Response: A Status Report
Advanced Web-Based Temporal Analytics for Arms Control Verification and Compliance

Maynard Holliday

PTDO Assistant Secretary of Defense for Critical Technologies at United States Department of Defense
Washington, District of Columbia, United States

Summary

I am Performing the Duties of Assistant Secretary of Defense for Critical Technologies in OSD R & E. In this capacity, I oversee over \$1.4B in direct investment in the Pentagon's modernization priorities and capability analyses as outlined in the National Defense Strategy. I have oversight of the 11 principal directors assigned to those critical technologies and their roadmaps - the comprehensive strategies to manage, provide oversight and guide choices for each critical technology area. These critical technology areas include; Advanced Software and Computing, Trusted Artificial Intelligence and Machine Learning and Autonomy; Human Machine Interfaces ; Integrated Sensing and Cyber; Directed Energy; Integrated Network System of Systems, Renewable Energy Generation and Storage; Hypersonics; Microelectronics;; and Space.

Former SES Presidential Appointee in the role of Senior Technical Advisor to the longest serving Undersecretary of Acquisition, Technology and Logistics (AT&L) in the history of the Pentagon.

I have proven ability to build relationships, brainstorm, collaborate, and lead as a senior engineering professional with over 25 years of experience in government and private sector technology development roles. Extensive experience in managing large interdisciplinary projects of international and commercial importance at Apple, Lawrence Livermore National Lab (LLNL), Evolution Robotics, Intuitive Surgical, Willow Garage and Sandia National Laboratories.

Specialties: Proven track record of managing complex interdisciplinary international projects in robotics and commercial product development. Three time DARPA Co-Principal Investigator for tactical mobile robotics, micro UAV navigation and advanced pattern recognition for RPG detection projects.

Extensive network in both the robotics and USG national security science and technology communities. Defense policy depth with the current set of geopolitical security issues encompassing near peer adversaries.

STEM educational outreach to K-12 secondary schools emphasizing engineering and science careers using robotics and space oriented lectures.

Applying Design Thinking to Systems Analysis and Research problems

Experience

United States Department of Defense

2 years 4 months

PTDO Assistant Secretary of Defense for Critical Technologies

July 2023 - Present (2 months)

Washington, District of Columbia, United States

Deputy Chief Technology Officer for Critical Technologies at United States Department of Defense

May 2022 - July 2023 (1 year 3 months)

United States

Director of Defense Research and Engineering for Modernization

May 2021 - May 2022 (1 year 1 month)

Pentagon

I oversee investment and capability analysis of the Pentagon's modernization priorities outlined in the National Defense Strategy. I have oversight of the 11 principal directors assigned to those modernization portfolios and their roadmaps - the comprehensive strategies to manage, provide oversight and guide choices for each modernization priority area. These modernization priorities currently include 5G; Artificial Intelligence and Machine Learning; Autonomy; Biotechnology; Cyber; Directed Energy; Fully Networked Command, Control, and Communications; Hypersonics; Microelectronics; Quantum Science; and Space.

RAND Corporation

Senior Engineer

February 2017 - May 2021 (4 years 4 months)

Santa Monica, CA

Working in the Engineering and Applied Sciences Group within the Global Research Talent Organization on AF logistics, AV policy, robotics and AI bias.

Biden for President

Volunteer Defense Policy Expert

November 2019 - November 2020 (1 year 1 month)

Provided expert policy advice on defense innovation and STEM diversity, equity and inclusion issues

United States Department of Defense

Special Assistant to the Under Secretary of Defense for AT&L

September 2014 - January 2017 (2 years 5 months)

The Pentagon

As the senior technical advisor to the Under Secretary of Defense, I provided the Secretary expert technical and programmatic analysis and advice on a broad range of research, development, acquisition, and sustainment issues.

I led OUSD(AT&L) analyses of commercial Independent Research and Development (IRAD) programs.

I have worked with USG teams to help launch the Secretary of Defense's, Defense Innovation Unit – Experimental (DIUx), was a government advisor for the Defense Science Board's 2015 Autonomy Summer Study, and advised the USD on disruptive technology for maintaining US technological superiority.

I am familiar with the full spectrum of national security threats, actors and technology developments that span from China to counter terrorism and cyber security.

Invited Participant at multiple White House meetings on STEM Excellence that bring together leaders from government, industry and academia to address the STEM diversity pipeline. I also participated in the IMAGE of STEM event at the White House that addressed the portrayal of STEM professionals in the media. Participant in White House Leadership program.

Defense related technologies I am familiar with include, additive manufacturing, generative design, artificial intelligence and machine learning for autonomous systems and unmanned aerial system development and defense. Defense policy depth with the current set of geopolitical national security issues.

I am also involved in the My Brothers Keeper task force initiative to help implement programs to increase opportunities for all young people across the country—to ensure they can achieve their full potential regardless of who they are, where they come from, or the circumstances into which they are born.

Citizen Schools

Volunteer Citizen Teacher

2010 - December 2015 (5 years)

Elmhurst Community Prep

Teaching an introductory robotics class to 6th and 7th graders using LEGO Mindstorms Robotics Kits, Parrot AR Drones, and the Double telepresence robot platform.

Robot Garden

CoFounder

September 2012 - August 2014 (2 years)

Livermore, CA

Developed robotics themed hackerspace open to the community in the Tri-Valley and San Ramon Valley. The space has hosted local and regional robotics and Tech challenge teams and competitions. Hackers and Makers are welcome. Check our web site for announcements.

Sandia National Laboratories

Principal Member, Technical Staff

February 2011 - August 2014 (3 years 7 months)

Livermore, CA

3 time State Department Verification Fund Principal Investigator for temporal analytics for arms control compliance, societal verification plus helped develop university level national security curriculum. Conducted nuclear security systems studies for the Departments of Energy, Defense and Homeland Security.

Oakland Unified School District

Volunteer Scientist

2011 - 2013 (2 years)

Dinner with a Scientist - Oakland Zoo

Delivered the Keynote Address at Two Dinner with a Scientist Events in May. Presented mobile robotic concepts to high school students during formal dinner.

Ardica Technologies

Director, Fuel Production

July 2009 - February 2011 (1 year 8 months)

Micro Hydrogen Fuel Cell Development

Willow Garage

Production Manager

August 2008 - May 2009 (10 months)

Personal Mobile Robotics Start up

Speck Design

Project Director

November 2007 - July 2008 (9 months)

Actively managing projects in the business verticals of Consumer and Industrial Design, Medical Products and Telecom Chassis Design. I am also implementing best practice project management techniques and tools across the enterprise in the U.S. and China to improve business efficiency.

Intuitive Surgical

Sr. Vision Project Manager

June 2006 - October 2007 (1 year 5 months)

Vision Project Manager, daVinci Robotic Systems

Managed international multidisciplinary project teams developing next generation cameras & endoscopes for the daVinci surgical robot

Managed internal & external vision system development projects

Evolution Robotics

Director, University & Government Business Development

January 2004 - May 2006 (2 years 5 months)

Developed \$1M+/Yr business in robotic SW for university and government clients using world class visual pattern recognition algorithms based on David Low's SIFT algorithm. Applications included autonomous navigation for indoor mobile vehicles, visual pattern recognition for light artillery threat detection, UAV navigation and biometric data analysis. Developed large customer base (150+) for robotic SW development kits & mobile platforms.

Lawrence Livermore National Laboratory

Project Engineer

1994 - 2000 (6 years)

Livermore, CA

- To ensure International and U.S. nuclear security, led interdisciplinary 10 person expert teams in Russia to negotiate, and implement nuclear material security upgrades. Teams consisted of experts in Computer and Physical Security plus Material Accounting. Successful project management resulted in the significant reduction of security vulnerabilities at the nuclear cities of K-26, Tomsk 7, Mayak, S-44 and C-70.
- Led joint \$2.7M Nunn-Luger funded DOE/NASA, private sector team that designed, fabricated, tested and deployed a radiation hardened mobile vehicle for use at Chernobyl Unit 4. Secured multi-agency funding for the project as well as private sector and university technical support.
- Led DOE effort to write comprehensive export license for Materials, Protection, Control & Accounting program technologies. Effort involved high level interactions at the Department of Commerce, NASA, The Pentagon, State Department and DOE to draft an acceptable license.
- Formed successful partnerships with Ukrainian scientific institutes that resulted in joint projects focusing on robotic systems.

AAAS

AAAS Science, Technology and Diplomacy Fellow

August 1995 - July 1996 (1 year)

USAID Office of Energy and Environment, Washington DC

- Evaluated financing alternatives for advanced waste water treatment technologies for rural Brazilian municipalities
- Responsible for energy efficiency workshop in Kaliningrad Russia that highlighted new technologies and public/private partnerships for adoption of energy efficiency
- Responsible for commercialization planning for LLNL developed Dynamic Underground Stripping (DUS) and associated technologies. Activities included market analysis, cost and performance analysis and marketing strategy.
- Helped write U.S. government environmental technology export plans for Mexico, Indonesia & Brazil.
- Developed several Cooperative Research and Development Agreements (CRADAs) between LLNL and private sector companies.
- Represented U.S. Agency for International Development on the White House Office of Science & Technology Policy led Environmental Technology Working Group.

International Space University

Alumni

June 1991 - August 1991 (3 months)

2 month Space Studies Program that offers a unique Core Curriculum covering all disciplines related to space programs and enterprises, space science, space engineering, systems engineering, space policy and law, business and management, and space and society. The program also involves an intense student research Team Project providing international graduate students and young space professionals the opportunity to solve complex problems by working together in an intercultural environment.

Education

Stanford University

M.S., Mechanical Engineering Design/Robotics

Stanford d.school

Design Thinking Basic Prototyping · (2014)

Carnegie Mellon University

BS, Mechanical Engineering

International Space University

Summer Session Program, Space Engineering & Robotics