



Biography

Thomas C. Irwin, Ph.D.

Executive Director, Center for Mission Engineering

Office of Enterprise Research and Innovation
Old Dominion University

The Center for Mission Engineering (CME) is an interdisciplinary applied research center focused on advancement in designing, analyzing, integrating, and improving the ability of engineered systems to deliver desired mission effects at the strategic, operational, and tactical levels. Leads the Old Dominion University, regional, and statewide effort to build an ecosystem of researchers, innovators, problem solvers, and entrepreneurs working in or with Mission Engineering to identify opportunities, accelerate development, and realize mission outcomes. The CME is developing transformative tools (models and simulations) to rigorously define and facilitate the practice of mission engineering. The models are the first of their kind and will advance the state of the art in mission engineering.

CAREER CHRONOLOGY:

- SES Deputy Director, Joint Force Integration: Joint Staff J7 Apr23-Jan24
 - Provided executive management, oversight, and integration of Joint Force development and design activities. Lead the Force Development and Design Functional Capabilities Board; conducted studies, analyses, assessments, and wargames supporting the transition of concepts into requirements; oversaw implementation of the JWC into campaign plans and irregular warfare; managed and developed options for capability experimentation and development. Also served as the S&T lead for the Joint Staff J7, chaired the Joint Experimentation Network (JExNet) ESG, and sat on a myriad of senior leadership organizations including DoD Chief Engineers Council, JT&E Executive Committee, and OSD R&E RDER, Mission Engineering, Digital Engineering, and M&S Executive Leadership Forums, CJADC2 CFT, EMSO SSG, Technology Protection ESG, and the Technology Transition ESG.
- SES Executive Director, Joint Warfighting Development; Joint Staff J7 Sep18-Apr23
 - Responsible for executive management, oversight, and integration of all JS joint concept development, wargaming, experimentation, doctrine, knowledge management, and joint education missions and functions to realize concept driven, threat informed capability development. Integrated joint force development functions and technologies necessary to strengthen the operational effectiveness of both the current joint force and that of the interdependent future force through the J7's core competencies of Doctrine, Education, Training, Concepts, Wargaming, Experimentation, Innovation, and Lessons Learned.
- SES Executive Director, Joint Training; Joint Staff J7 Sep14-Sep18
 - Provided executive-level management in the interpretation of joint training and exercise policy, development of program metrics and practices, and execution of joint training on a global basis. Oversaw a global network for distributed COCOM, JTF, Service, Agency, and Partner joint training/exercises, composed of joint live, virtual, and constructive simulations and joint enablers for the Chairman's Exercise Program, Joint Exercise Program, Service exercise programs, Joint Force Development programs, cyber mission

forces training and mission rehearsal, and cyberspace operations exercises, training, and capability development events.

- SES Deputy Director, Joint Environment; Joint Staff J7 Aug11-Sep14
 - Directed the formulation and execution of enterprise IT architecture and enabling PM, strategies, policies, procedures, and processes which covered all areas of information management, including the establishment of standard technical architectures; data architecture management and administration; the setting of information standards; software design and development software and hardware configuration management; network design and operations; IT acquisition management; testing and operational evaluation of JS J7 IT systems; cyber security of JSJ7 IT systems and mission networks. Oversaw the Joint Information Operations Range (JIOR), providing a closed cyberspace environment for complex cyber warfare capability development, exercises, and test events.
- SES Enterprise Director; U.S. Joint Forces Command J9; Joint Concept Development and Experimentation Oct09-Aug11
 - Served as the Senior Executive Director of the USJFCOM J9 Joint Concept Development and Experimentation (JCD&E) Enterprise Business Group (EBG) at Headquarters, United States Joint Forces Command (USJFCOM). Provided leadership and executive oversight over all joint experimentation programs and projects across USJFCOM and the DOD JCD&E Enterprise comprised of all Combatant Commands, Services, Joint Task Forces, Office of the Secretary of Defense, and Joint Staff.
- Product Group Director, Marine Air-Ground Task Force Command and Control; Marine Corps Systems Command, Quantico, VA Jun04-Oct09
 - Served as the Marine Corps Systems Command senior acquisition manager and supervisor for the Marine Corps Air and Ground Command and Control (C2), Combat ID (CID), Ground Based Air Defense Weapons (GBAD), Unmanned Aerial Systems (UAS), and Radars (counter mortar, air surveillance, and ground surveillance technology) programs portfolios. I managed a diverse Directorate with a portfolio value exceeding \$2.5B encompassing 55 acquisition and S&T programs. Also supervised a logistics detachment at the Marine Corps Depot in Albany, Ga.
- Extensive career in the NAVSEA Warfare Centers, holding various technical and management positions for Theater Warfare Systems, Battle Force Interoperability, Aegis Combat Systems, Gunfire Control Systems, and Self Defense Missile Systems.
 - NSWC Dahlgren Theater Warfare Systems Division Head performed systems engineering in the development of Strike Force capabilities, Warfare Systems, and technologies, including upgrades to existing naval warfare systems in support of Joint Force (JF) and Strike Force (SF) operations.
 - Program Management and Technical Lead for the NAVSEA 53 sponsored BFIR program, and ASN/RDA (CHENG) TAMD and SIAP engineering programs.
 - NSWC Dahlgren Combat Direction Systems (CDS) Branch Head provided Software and System Engineering support for the entire Lifecycle (development, maintenance, operations) of the AEGIS Combat System (ACS) and AEGIS Weapon System (AWS).
 - NSWC Port Hueneme Advanced Systems Engineering Branch Head provided technical direction for Mk 86 Gun Fire Control and radar upgrades.
 - Led the Ordnance Alteration (ORDALT) and Engineering Change Proposal (ECP) program for the U.S. Fleet and eight foreign participating governments who deployed the NATO Sea-sparrow Surface Missile System (NSSMS).

EDUCATION:

- Ph.D., Systems Engineering; Naval Postgraduate School, Monterey, CA; 2018
- Master of Science, Systems Engineering Management; Naval Postgraduate School, 2009
- Bachelor of Science, Mechanical Engineering; North Carolina State University, Raleigh, NC; 1983

SIGNIFICANT TRAINING:

- Vanguard
- Joint Flag Officer Warfighting Course
- Senior Joint Information Operations Course
- Department of the Navy Executive Leadership Program
- Department of the Navy Executive Development Program for Strategic Thinking
- APEX
- Gartner CIO Academy
- Lean Six Sigma Champion
- Contracting Officers Technical Representative

CERTIFICATIONS:

- Project Management Institute Project Management Professional
- Product Development 21, Massachusetts Institute of Technology
- Defense Acquisition Workforce Improvement Act Program Management Level III
- Systems Planning, Research, Development and Engineering Level III
- System Design and Management, Massachusetts Institute of Technology
- Military Systems Engineering Integration, Naval Postgraduate School
- Systems Engineering Product Development, Naval Postgraduate School
- Principals of Acquisition and Program Management I & II, Naval Postgraduate School
- Management of Advanced Systems Engineering, Naval Postgraduate School

AWARDS AND HONORS:

- CJCS Joint Distinguished Civilian Service Medal; 2023
- Marine Corps Meritorious Civilian Service Award; 2009
- Navy Meritorious Civilian Service Award; 2004
- Navy Meritorious Civilian Service Award; 1999