Global Deterrence & Defense Department Overview



CAPT Duncan McKay, USN Commanding Officer

Dr. Angela Lewis, SES Technical Director

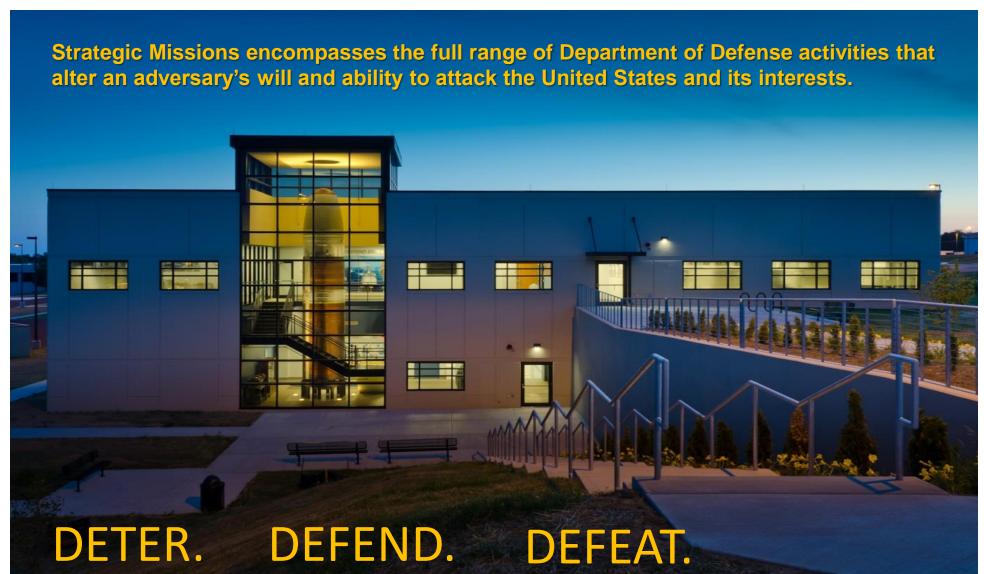


Dr. Kyle Werner
Department Director (acting)

Mr. J.R. Ross
Deputy Department Director



STRATEGIC MISSIONS CENTER





STRATEGIC MISSIONS THRUST AREAS





LEADERSHIP ROLES

- DoD Executive Agent & Technical Warrant Holder for Printed Circuit Board Technologies
- Joint Federated Assurance Center Hardware Assurance Lead for DoD and for the Navy
- DoN S&T Lead for Anti-tamper
- Naval Sea Systems Command (NAVSEA) Antitamper Technical Warrant Holder
- Deputy Chair, NAVSEA Counterfeit Material Prevention Policy Integrated Product Team
- Chair Strategic Rad Hard Electronics Council
- Knowledge Champion for Emerging Missions
- Technical Execution Lead for Strategic Rad Hard Electronics Council





Technology Areas

- Thermal Protection
- Model-Based Avionics Architecture Development
- Inertial Instruments (e.g. Gyros, Accelerometers)
- Data Collection Instrumentation
- Advanced Radiation-Hardened Electronics
- Stellar Technologies (e.g. Sensor, Optics, and Algorithms)
- Trajectory Modeling
- Performance Modeling of Complex Systems
- Thermodynamics
- High Temp Ceramic Composites

- System Engineering
- Model Based Systems Engineering
- System-Level Modeling and Simulation
- System Accuracy and Reliability
- Enhanced Fault Diagnostics / Detection
- Material Availability and Obsolescence Evaluation
- Hardware-in-the-Loop Integration
- Enhanced Ground Test
- Radiation Effect Modeling, Design, & Test
- Design Verification & Validation
- Advanced Modeling & Simulation of Complex Systems of Systems at the Component Scale
- Topology Optimization
- Digital Twins for Hypersonics

- Intelligent System Protocols
- Secure Data Exchange
- Secured Computing Architecture
- Hardware Trust
- Unmanned Aerial Vehicle Response
- Unmanned Underwater Vehicle Response
- Sensors
- Post-Launch Communications
- Situational Awareness
- Logistics
- Counterfeit Detection
- Anti-Tamper
- Supply Chain Risk Management



Future Skills

- Predictive Aging Models
- Material Science
- Data Analytics
- Propulsion Systems
- Control Systems
- Supply Chain Risk
 Management
- Failure Analysis
- Material Analysis
- Environmental Effects
- Cyber Security

- Batteries
- Modeling & Simulation
- Software Engineering
- Internal Communications
- External Communications
- Radiation Hardening
- Nuclear Effects
 Modeling –
 Fratricide
- Post-Flight System Accuracy Assessment

- Exo/Endo Flight
 Phenomena
- Underwater Launch
- Computational Fluid Dynamics
- Sensors & SensorSystems
- Neuroscience
- RF/Wireless Systems
- Undersea Navigation
- Artificial Intelligence
- Computing Architectures

- Fault Diagnostics
- Systems of Systems
- Navigation Systems
- Guidance Systems
- Logistics
- Strategic Weapons
 Facility Operations
- Threat Analysis
- Unmanned Systems
- Unmanned Systems Defeat