

# NSWC Crane Division Overview



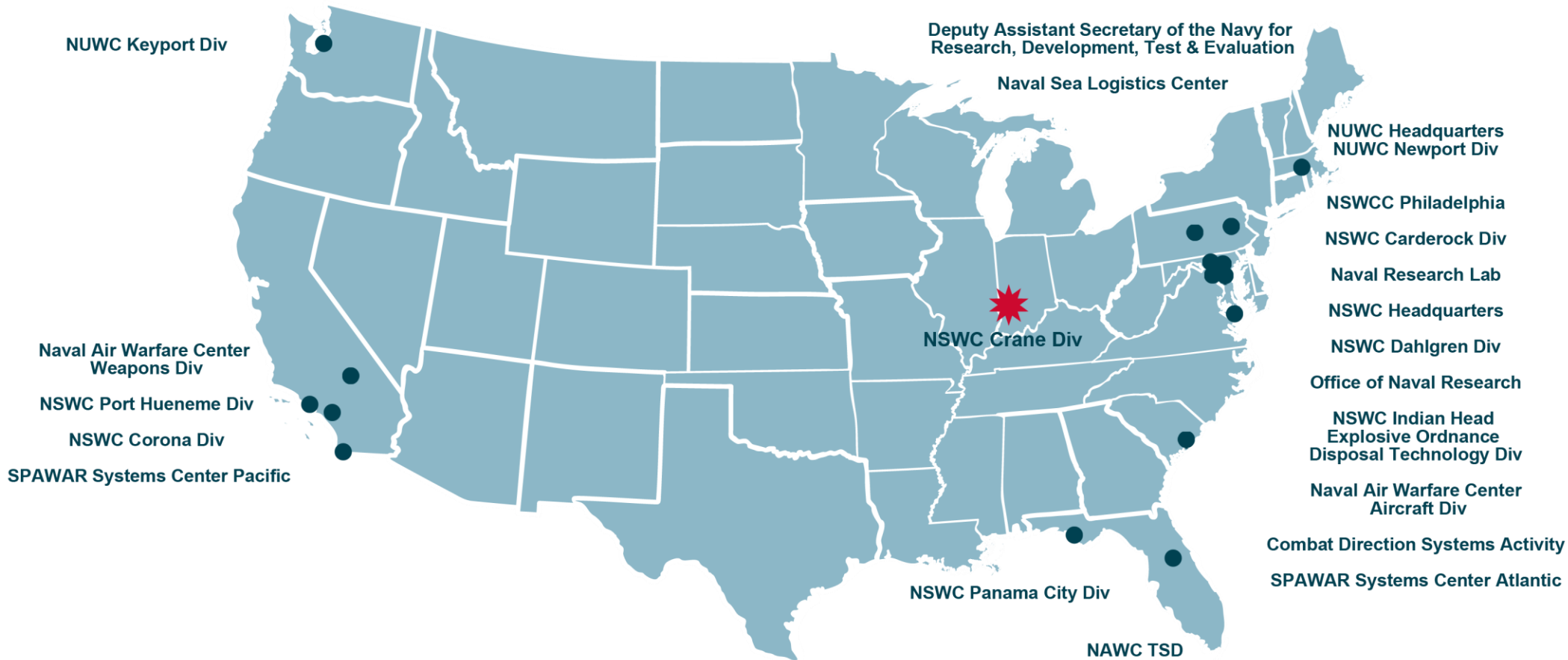
**CAPT Duncan McKay, USN**  
Commanding Officer



**Dr. Angela Lewis**  
Technical Director

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# Naval Research & Development Establishment



**Aggressive *RESEARCH, DEVELOPMENT, TEST & EVALUATION***  
**for Reliable Real World Solutions.**

## QUICK FACTS

**\$1.4B**  
Business Base

**1 MISSION**

**3806**  
NSWC Crane  
Employees

## 3 MISSION AREAS



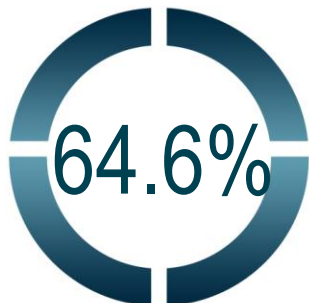
Strategic Missions



Expeditionary Warfare



Electronic Warfare



Scientists,  
Engineers,  
& Technicians

**127** Doctorate  
**653** Masters  
**1,746** Bachelors



***Our Mission . . . Provide acquisition engineering, in-service engineering and technical support for SENSORS, ELECTRONICS, ELECTRONIC WARFARE and SPECIAL WARFARE WEAPONS. Apply component and system level product and industrial engineering to surface sensors, strategic systems, special warfare devices and electronic warfare/information operations systems. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.***



***Strategic Missions***

***Expeditionary Warfare***

***Electronic Warfare***

We, at NSWC Crane exist to provide the **AMERICAN WARFIGHTER** with solutions to their toughest technical challenges in order to better equip them with a **DECISIVE ADVANTAGE** over our Nation's adversaries!

## ETHOS

*Create a culture of innovation that values leadership and employee engagement.*

## EXECUTION

*Integrate capabilities and processes to enable efficient and effective execution of our mission.*

## EXCELLENCE

*Innovate game-changing and agile solutions.*

**Combating our Nation's greatest threats, NSWC Crane is the indispensable mission expert, leveraging our deep technical heritage to deliver solutions through **INNOVATION** and **STRATEGIC PARTNERSHIPS**.**

## Areas of Expertise:

- Trusted Electronics
- Radiation Sciences
- Failure/Material Analysis
- Flight Eng
- Design & Systems Eng
- Component Eng
- Anti-Tamper Technologies
- Automated Test Equipment
- Printed Circuit Board Design

## Hardware Product Areas:

- Launcher Systems
- Missile Handling and Transportation Systems
- Fire Control and Navigation Systems
- Deployed Test and Measurement Equipment
- Polymer Sciences and Underwater Sensors
- ASIC Design and Verification

## Claims & Credentials:

- Nation's primary organic field activity for Nuclear Deterrent systems
- Key contributor to the Missile Defense mission
- Navy's preeminent center for Microelectronics Technology
- Trusted & Assured Microelectronics Program Lead
- Microelectronics Innovation for National Security & Economic Competitiveness Program Lead
- Executive Agent for Printed Circuit Board Technology
- Strategic Radiation Hardened Electronics Council Execution Lead
- NAVSEA Technical Warrant Holder for Anti-Tamper and Electronics
- Strategic Systems Deputy Assistant Technical Warrant Holder for Radiation Hardening

**DETER  
DEFEND  
DEFEAT**



## Areas of Expertise:

- Small Arms Weapon Systems Eng
- Specialized Munitions Systems Eng
- Electro-Optic Technology Systems Eng
- Surveillance, Reconnaissance & Intelligence Collection Systems Eng
- Expeditionary Systems Integration & Eng
- Power Systems and Interconnect Technology Eng
- System Test and Evaluation

## Hardware Product Areas:

- Hand Emplaced Munitions
- Small Arms (less than 20 mm)
- Expeditionary Ground and Air C4
- Expeditionary ISR Systems Ground & Air
- Multi-Sensor/Multi Domain EO/IR Systems
- Multi Chemistry Battery and Power Management Systems

## Claims & Credentials:

- DoD's largest resource dedicated to power systems
- Unique infrastructure
  - Rapid Innovation Prototyping Lab
  - Indoor & Outdoor test ranges
  - Electro-Optics Test Tower Facility
- In-Service Engineering Agent/Acquisition Engineering Agent for all SOF visual augmentation systems
- Technical Warrant Holder assignments
  - Small Arms
  - NAVSEA Electro-Optic/Infrared
  - NAVSEA Anti-Terrorism Force Protection



*RAPID RESPONSE*  
**PROVEN SOLUTIONS**

## Areas of Expertise:

- Full Lifecycle Eng
- System Test and Integration
- Threat Exploitation
- Technology Transition
- Hardware in the Loop,  
Modeling & Simulation

## Hardware Product Areas:

- Surface Electronic Warfare
- Counter Radio Electronic Controlled Improvised  
Explosive Device Warfare (CREW) Systems
- Airborne Electronic Attack
- Infra-Red (IR) Countermeasure Design  
Flares/Lasers
- Phased Array and Solid State Technologies

## Claims & Credentials:

- DoD's largest concentration of EW expertise
- 550,000 Sq. Ft. of office, labs & specialized test facilities dedicated to the EW mission
- Leadership for DoN's Live/Virtual/Constructive Experimentation Capability
- Next Generation Jammer Principal Investigator
- Engineering experts for CREW systems
- AN/ALQ-99 Fleet Support Team
- Leaders in Surface Warfare EW systems and Off-Board Decoys

***CONTROL THE SPECTRUM  
CONTROL THE FIGHT***

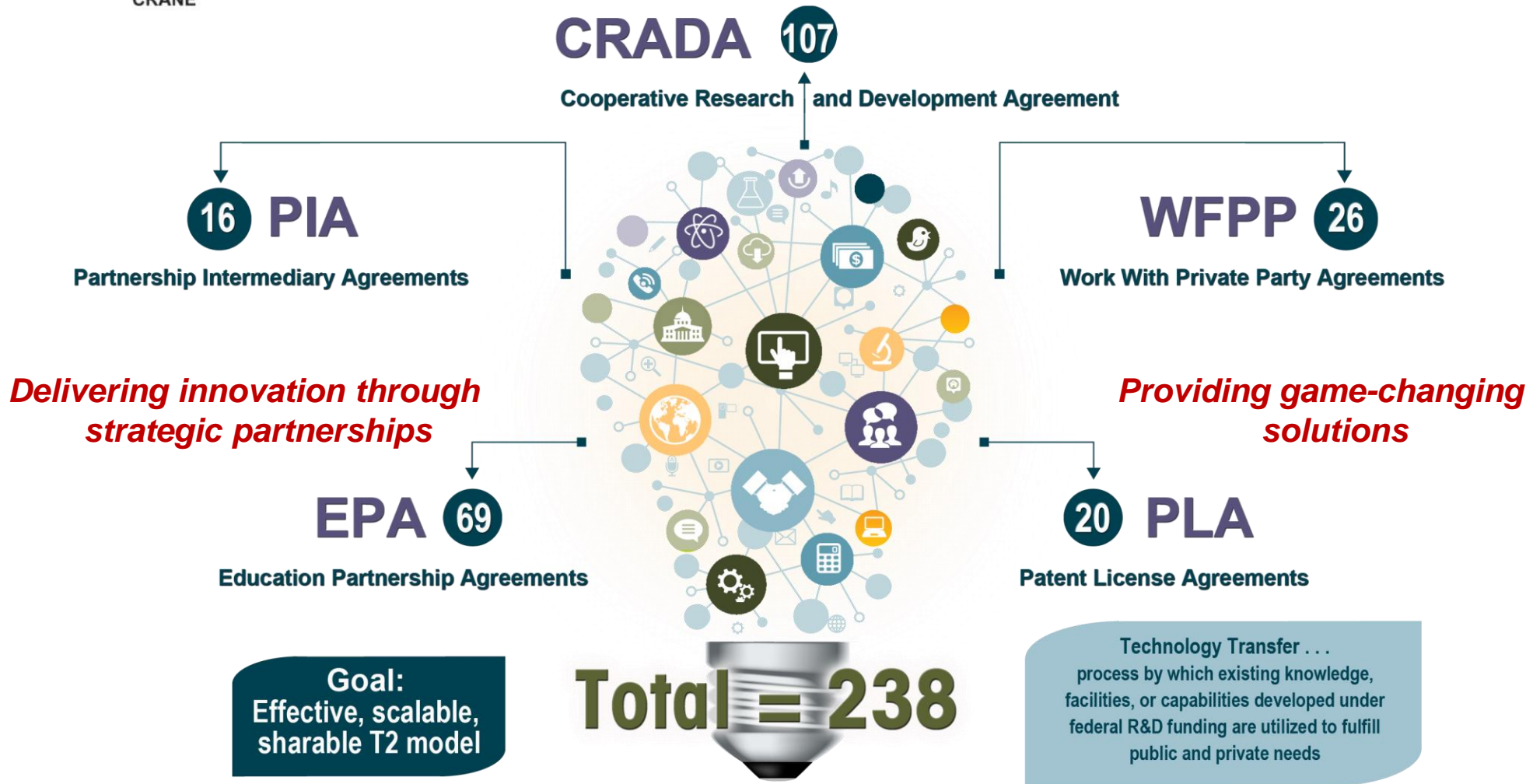


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***ACCELERATE and ENABLE the development of a vibrant innovation ecosystem across the region and state.***



*Leveraging T2/IP for Enhanced Lab Mission Effectiveness through **TECHNOLOGY, INNOVATION and COLLABORATION** is ensuring we're using all our assets.*

- PhD Fellowships
- SMART PhD Scholarships
- Naval Research Enterprise Internship Program
- Naval Engineering Education Consortium Grants
- Microgrants for Research
- Temporary Faculty Hires
- Post-doctoral Researcher On-Site Fellowships
- Cooperative Research and Development Agreements
- Educational Partnership Agreements





- The Navy's primary organic field activity for full lifecycle leadership in Strategic Deterrence.
- A National Leader in Electronic Warfare providing full lifecycle support of multi-domain, multi-spectral EW systems.
- National Leaders in Special Operations Weapons, Sensor Integration, and Weaponry for the Expeditionary Warfighter.



*NSWC Crane provides our Naval, DoD and National Customers affordable, innovative solutions necessary to defend our country and deter aggression.*

# Back-Ups



# Contributing to the Surface Navy After Next

**Kinetic & Non-Kinetic Effects**



**Sensors**



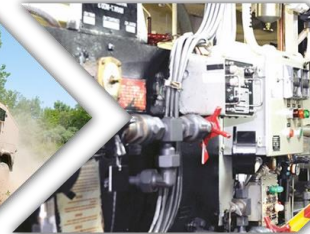
**Platform & Payload Engineering**



**Expeditionary**



**Power & Propulsion**



**Surface Warfare Combat Systems**



## DISTRIBUTED LETHALITY



**Mine Warfare**



**Ranges, Training  
Performance  
Assessment**



**Autonomous  
Vehicles**



**Electronic Warfare**



**Mission  
Engineering &  
Warfare Analysis**



**Forward Support  
& Agile Logistics**

- *Increase the offensive lethality of all warships*
- *Distribute offensive capability geographically*
- *Give ships the right mix of resources to persist in a fight*

Surface Force Strategy – Return to Sea Control  
Commander Naval Surface Forces, January 2017