University Partnership Team

Technology Transfer Director
Ms. Jenna Dix

Research Director
Dr. Jonathan Dilger

University Liaison
Dr. Bryan Woosley

IU Liaison
Dr. Alison Smith

Student Opportunities

- Internships
- Scholarships & Fellowships
- Research & Project-Based Learning Programs
Aggressive RESEARCH, DEVELOPMENT, TEST & EVALUATION for Reliable Real World Solutions.
Technical Leadership

QUICK FACTS

$3.024B
Economic Impact

1 MISSION

3 MISSION AREAS

Strategic Missions

Expeditionary Warfare

Electronic Warfare

65%
Scientists, Engineers, & Technicians

135 Doctorate

720 Masters

1,819 Bachelors

3822 NSWC Crane Employees

Economic Impact

Statement A: Approved for Public Release; Distribution is unlimited.
Crane Keyword Map

Scopus query on Crane affiliated publications
- 555 open source publications

Co-occurrence network analysis
- Relatedness of items is determined based on the number of documents in which they occur together.
- Keywords extracted from title and abstract

Clusters of S&T
- electronics, circuits, & memory
- radiation effects & ionization
- radar technologies
- cameras & sensors
- batteries, power, & energy
- computer simulation & software
- spectrum analysis
- testing, reliability, & optimization
Naval Engineering Education Consortium (NEEC)

- NAVSEA sponsored multi-year grant, up to 3 years at $150K/yr
- Project-based research conducted at colleges and universities
- Topics presented from ten NAVSEA Surface and Undersea Divisions

Objectives:

- Academic research to resolve Naval technology challenges
- Hiring graduates with Naval R&D experience into the NAVSEA workforce
- Develop / deepen exceptional working relationships with colleges, universities, and academics

- NEEC is comprised of more than 40 academic institutions
Example NEEC Topics

**Trusted Microelectronics:**
- “Mitigating Supply Chain Threats to Hardware and Firmware Security”
- “Advanced Data Visualizations for Robust Deep Machine Learning”
- “Fast Functional Testing Tools for Field-Programmable Gate Arrays”

**Autonomy:**
"High Fidelity Radio Frequency Scene Generation for Real-Time Processing"

"Validation & Verification for Trusted Autonomous Vehicles"

Funding Opportunity Announcement

Grants.Gov

N00164-22-1-1001

Closes: 24-MARCH-2022
• High Specific Energy Li2MnSiO4/Graphene as Cathode Materials for Lithium-ion Batteries

• PtNiN on Functionalized Graphene for Ultra-durable and Highly Efficient Membrane Electrode Assemblies

• 3D printing of ceramics for stress sensor applications

• Object Tracking using AI in Navy Video
NSWC Crane internship program for undergraduate and graduate science and engineering students

Upload resumes to:
  - https://navsea.recsolu.com/external/form/jmR6cUhZKZ_qD5QUqyMk8w

**Starting Salary** (annual equivalencies)

- Bachelor’s Candidates: < 90 Semester hours credit = $31,615
- Bachelor’s Candidates: > 90 Semester hours credit = $40,569
- Master’s Candidates with S&E degree = $62,269  (Computer Engineer/Computer Scientist = $64,489)

**Promotion Potential**

- 320 hours as intern and > 90 Semester hours credit = $48,593  ($53,023 for CE/CS)

**Full-time employment at graduation with supervisor concurrence of acceptable performance and 640 work hours as a SSEP** (some work hours may be waived with management and Human Resources approval)

**Cumulative GPA of 2.5 / 4.0 required to remain in the program**
Naval Research Enterprise Internship Program (NREIP)

- ONR Navy-wide internship program for undergraduate and graduate science and engineering students
- Must be a HS graduate, currently enrolled in higher education, and have least 31 college credits received
- 10-week internship program supervised by a research mentor at a participating Navy laboratory
- Stipend amount for 10-weeks:
  - New undergraduate participants: $7,000
  - Returning undergraduate students: $8,500
  - Graduate students: $11,000
- Applications portal opens August (closes ~ November 01) for summer internship

Apply at: https://navalsteminterns.us/nreip/
– DoD Sponsored SMART Scholarship for Service
– Full tuition and fees paid by scholarship funding
  • (does not include meal plans, housing, or parking)
– Guaranteed employment at a DoD facility after graduation
– Summer research internships ranging from 8 to 12 weeks
– Additional allowances for supplies, health insurance, and travel to internship site
– Annual Stipend $25,000 - $38,000 (based on degree objective)
– Applications are due in late fall (early December)

Apply at:
https://www.smartscholarship.org
Recent Awards & Other Opportunities

- **AI Goes Rural** ($1.7M/3yrs)
  - Middle School AI Curriculum
  - 5 IU PIs, School of Education, Luddy SICE, and NSWC Crane STEM

- **Trusted AI** ($2.2M/1yr)
  - Trusted AI Research & Curriculum
  - 11 PIs (IU and IUPUI), 8 NSWC Crane SMEs

- **Navy Engineering Innovation & Leadership Program** ($750K/3yrs)
  - Undergraduate focus with student mentorship
  - Multidisciplinary with NSWC Crane mentors

- **Project-Based Learning** ($210K/3yrs)
  - Testing Tools for Field-Programmable Gate Arrays (FPGAs)
  - PI, Prof. Andrew Lukefahr (Luddy SICE) with NSWC Crane mentor

- **Design & Fabrication of Radiation-Hardened FPGAs Research** ($826K/3yrs)
  - PI, Prof. Andrew Lukefahr (Luddy SICE) and NSWC Crane

- **Academic Accelerator** ($150K/1yr) & Student Internships
  - PI Topics: Rational Drone Asset System (RADAS), PI, Prof. Mehmet “Memo” Dalkilic (Luddy SICE) and Radiation Resilient Quantum Information Platform, PI, Prof. Phil Richerme (College of Arts and Sciences)
  - Student Projects: Quantum Resiliency, Command and Control Trainer, RADAS, Flight Vehicle GUI, Microelectronics Access Policy

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Inspiring the future

Science, Technology, Engineering and Mathematics, or STEM, is the gateway to a world of wonder. U.S. Department of Defense (DoD) STEM professionals work at the leading edge of our nation’s most advanced technological breakthroughs. STEM is our future.

Meet DoD STEM

NAVAL STEM


DoD STEM

https://dodstem.us/
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