

Students and Advising

[Information for prospective students](#) | [Current ARSENL Students](#) | [Alumni research group members](#)

Information for prospective students

(For details on internship opportunities, go to the [Mentoring](#) page)

If you are interested in working with me, either on a topic of your interest or potentially one of many research areas in my group, please schedule an appointment via email or stop by my office. Please be prepared to discuss your interest areas, background (e.g., operational experience), and course performance. I welcome inquisitive and/or motivated students who are willing to challenge themselves and contribute to the research group.

Current ARSENL Students

<ul style="list-style-type: none">• Dylan Lau<ul style="list-style-type: none">• Curriculum: MOVES	<ul style="list-style-type: none">• LT Shannon Zoch, USN<ul style="list-style-type: none">• Curriculum: Electrical and Computer Engineering	<ul style="list-style-type: none">• LT Matthew Mitchelson, USN<ul style="list-style-type: none">• Curriculum: Systems Engineering

Alumni research group members

2015

- Capt Scotty Black, USMC
 - *"The Missions, the Tactics, the Implementation: A Simulation for Aerial Combat Swarms"*^{1,5,6}
- LT David Cummings, USN
 - *"Open Source Software in DOD Systems"*
- LT Raymond Davis, USN
 - *"Mechanical Design and Optimization of Swarm-Capable UAV Launch Systems"*⁶
- LT Patrick Livesay, USN
 - *"Investigation of Capabilities and Technologies Supporting Rapid UAV Launch System Development"*⁶
- LT Douglas McIntosh, USN
 - *"Preventing Encroachment by Hobby Grade Small Unmanned Aerial Systems"*
- Systems Engineering Analysis Cohort 21A Capstone Team
 - *"Organic Over-the-Horizon Targeting for the 2025 Surface Fleet"*

2014

- LT Brenton Campbell, USN
 - *"Human Robotic Swarm Interaction using an Artificial Physics Approach"*¹
- Lt Col Robert B. Davis, USMC
 - *"Applying Cooperative Localization to Swarm UAVs using an Extended Kalman Filter"*¹
- Chee Siong Ong, Singapore Defence Science and Technology Agency
 - *"Logistics Supply of the Distributed Air Wing"*^{1,6}
- Joong Yang Lee, Republic of Singapore Royal Air Force
 - *"Expanded Kill Chain Analysis of Manned-Unmanned Teaming for Future Strike Operations"*
- LT Blake Wanier, USN, Operations Research/Undersea Warfare
 - *"A Modular Simulation Framework for Assessing Swarm Search Models"*
- Systems Engineering Analysis Cohort 20B Capstone Team
 - *"The Distributed Air Wing Concept"*
- LT Nicole Ramos, USN, Systems Engineering
 - *"Assessment of Vision-Based Target Detection and Classification Solutions Using an Indoor Aerial Robot"*

2013

- LT James B. Zorn, USCG, Systems Engineering
 - *"A Systems Engineering Analysis of Unmanned Maritime Systems for U.S. Coast Guard Missions"*¹
- Systems Engineering Analysis Cohort 19A Capstone Team
 - *"2024 Unmanned Undersea Warfare Concept"*
- Major Uwe Gaertner, German Army, Operations Research
 - *"UAV Swarm Tactics: An Agent-based Simulation and Markov Process Analysis"*¹
- LT Timothy Stevens, USN, Operations Research
 - *"Analysis of Nondeterministic Search Patterns for Minimization of UAV Counter-Targeting"*^{1,5}

2012

- LT Michael Smith, USN, Systems Engineering and Analysis
 - *"A Systems Engineering Evaluation for Submarine-launched UAS Capabilities"*¹
- LT Eric Shuey, USN, & LT Mika Shuey, USN, Applied Physics (Co-advisor: Prof. Richard Harkins)
 - *"Surfzone Autonomous Robot and Littoral Sea Control"*^{1,5}
- LT Timothy Rochholz, USN, Applied Physics (Co-advisor: Prof. Joseph Rice)
 - *"Wave-powered Unmanned Surface Vehicle Operations in Open Ocean"*^{1,5}
- LTJG Umit Soyulu, Turkish Navy, Computer Science (Co-advisor: Dr. Joel Young)
 - *"Multi-target Tracking by Aerial Battle Bots for Swarm vs. Swarm Systems"*¹
- Systems Engineering Analysis Cohort 18B Capstone Team (with Prof. Gary Langford)
 - *"Unmanned Surface Vehicle Future Concept: Tailorable Remote/Unmanned Combat Crafts (TRUCCs)"*
- Maj Thomas Dono, USMC, Operations Research
 - *"Optimized Landing of Autonomous UAV Swarms on Multiple Moving Platforms"*^{1,5}
- LT MengWee Joses Yau, Singapore Navy, Oceanography (with Dr. Peter Chu)
 - *"Localization of Surface or Near-Surface Drifting Mines in the Persian Gulf"*^{1,3,4}
- Capt Riadh Hajri, Tunisian Air Force, Information Sciences
 - *"UAV-to-UAV Visual Target Detection and Recognition"*
- Michael Day (with Dr. Christian Darken)
 - *"Simulation Architecture Design and Implementation for Multi-Agent Modeling of UAVs to Defend Against Swarm Attacks"*

2009-2011

- Maj Mehjdi Ben Ardhaoui, Tunisian Army
 - *"Implementation of Autonomous Navigation and Mapping using a Laser Line Scanner on a Tactical Unmanned Aerial Vehicle"*
- MAJ Christian Klaus, German Army
 - *"Probabilistic Search on Optimized Graph Topologies"*^{1,2}
- LT Steven Halle and LT Jason Hickle, USN (with Prof. Richard Harkins)
 - *"The Design and Implementation of a Semi-Autonomous Surf-zone Robot using Advanced Sensors and a Common Robot Operating System"*
- LT Mauricio Muñoz, Chilean Navy
 - *"Agent-based Modeling and Simulation of Defensive UAV Swarm Tactics"*
- MAJ Edward O. Williams, USA
 - *"Surveillance and Interdiction Models: A Game-theoretic Approach to Defend Against VBIEDs"*¹
- Maj Mark J. Muratore, USMC (Co-advisor: Dr. Rachel T. Johnson)
 - *"Effective Teaming of Airborne and Ground Assets for Surveillance and Interdiction"*¹
- LT Kenneth L. Byers, USN
 - *"Situational Awareness for Surveillance and Interdiction Operations (SASIO): Tactical Installation Protection"*^{1,2}
- LCDR Richard Morrison, USN (with Dr. Mathias Kölsch)
 - *"Fiducial Marker Detection and Pose Estimation from LIDAR Range Data"*¹
- MAJ Matthew Hastings, USA.
 - *"Combat Simulation of Individual Soldier Search in Urban Terrain"*

¹ - Outstanding Thesis Award

² - Military Operations Research Society (MORS)-Tisdale Award

³ - Outstanding International Student Award

⁴ - NAVSEA Warfare Centers Division Newport Award

⁵ - SSC-Pacific Student Fellowship

⁶ - George L. Phillips Award