

Part I. CURRICULUM VITAE

Name and Rank: CDR Paul Frontera, USN; PhD, Assistant Professor

Total Years at USNA: 6

Date of Appointment to Current Rank: 21 DEC 2016

Date tenure clock started: 01/10/17

1. Education.

BS	Systems Engineering	United States Naval Academy	1996
MS	Aerospace Engineering	University of Maryland-College Park	2002
MS	National Security Strategy	National Defense University	2011
PhD	Mechanical Engineering	Naval Postgraduate School	2016

2. Employment.

Naval Postgraduate School, PhD Candidate	Aug 2013	Sep 2016
USCYBERCOM, J71 Division Chief	Sep 2011	Jul 2013
DARPA, Service Chief Intern	Jun 2011	Sep 2011
National War College, Student	Aug 2010	Jun 2011
OPNAV Staff N87, Action Officer	May 2010	Aug 2010
USS LA JOLLA (SSN 701), Executive Officer	Mar 2008	May 2010
SECNAV Staff, Financial Management & Budget, Action Officer	Mar 2006	Dec 2007
USS VIRGINIA (SSN 774), Navigation/Operations Officer	May 2003	Mar 2006
USNA, Weapons & Systems Department Instructor	Dec 2000	Dec 2002
USS OKLAHOMA CITY (SSN 723), Division Officer	Oct 1999	Nov 2000
USS ATLANTA (SSN 712), Division Officer	Dec 1997	Oct 1999

3. Teaching.

a. Courses Taught:

SY202	Cyber Systems Engineering	2017 – Present
EW301	System Modeling and Simulation	2019 – Present
EW282E	Autonomous Marine Vessels	2019 – Present
EW495	Robotics & Control Engineering Research Course	2019 – Present
EW496	Robotics & Control Engineering Research Course	2019

ES495/6	Systems Engineering Research Course	2017 – 2018
ES481/2	Autonomous Marine Vehicle Research	2017 – 2018
ES301	System Modeling and Simulation	2017 – 2018
ES200	Introduction to Systems Engineering	2017 – 2018
ES306	Advanced Control Systems	2017
ES420	Weapon Systems Engineering	2001 – 2002

4. Scholarship and Scholarly Activity.

Peer-reviewed Conference Proceedings

- [C1] “Microcontroller CAN Bus for Small Autonomous Sailboat Control”, L. Marino, D. Robinson, D. Evangelista, and P. Frontera, AUVSI XPONENTIAL Conference, April 29-May 2, 2019, Chicago, IL. Abstract accepted December, 2019. Abstract accepted December, 2018.
- [C2] “Simulated Maritime Magnetic Navigation in the Asia-Pacific Region”, P. Frontera and S. Alessandrini, ION Pacific PNT Conference, April 8-11, 2019, Honolulu, HI. Abstract accepted November, 2018.
- [C3] “Magnetic Gradient Tensor Framework for Attitude-Free Position Estimation”, T. Getscher and P. Frontera, ION International Technical Meeting, January 28-31, 2019, Reston, VA.
- [C4] “A Networked Cyber-Physical System Testbed for Undergraduate Education”, E.J. Rodríguez-Seda, P.J. Frontera, and J. Bradshaw, IECON 2018 - 44th Annual Conference of the IEEE Industrial Electronics Society, October 21, 2018, Washington, DC.
- [C5] “Applied Research Aboard the USNA YP Fleet”, J. Donnal, P. Frontera, R. Broussard, M. Bush, and M. Snyder, American Society of Naval Engineers Technology, Systems and Ships 2018 Symposium, June 18-20, 2018, Washington, DC.
- [C6] “Shipboard Calibration of a Diamond Nitrogen Vacancy Magnetic Field Sensor”, P. Frontera, S. Alessandrini, and J. Stetson, IEEE/ION Position Location and Navigation Symposium (PLANS) Conference, April 23-26, 2018, Monterey, CA.
- [C7] “Maritime Magnetic Anomaly Mapping with a Diamond Nitrogen Vacancy Sensor”, T. Fleig and P. Frontera, IEEE/ION Position Location and Navigation Symposium (PLANS) Conference, April 23-26, 2018, Monterey, CA.
- [C8] “Guess-Free Pseudospectral Solution for Time Optimal Swing-Up of a Rotary Inverted Pendulum”, P. J. Frontera, M. A. Hurni, M. Feemster and M. Karpenko, Proceedings of the ASME 2017 Dynamic Systems Control

Conference (DSCC), October 11-13, 2017, Tysons, VA. Paper number: DSCC2017 5237.

- [C9] “Effect of Update Frequency on EKF and UKF Performance,” Frontera, P. J., Proulx, R. J., Karpenko, M., and Ross, I. M., 26th AAS/AIAA Space Flight Mechanics Meeting, February 14-18, 2016, Napa, CA. Paper number: AAS 16-358.
- [C10] “Analysis of Hyper-Pseudospectral Transformation of Random Variables,” Frontera, P., Karpenko, M., Proulx, R. J., Ross, I. M., AAS/AIAA Astrodynamics Specialist Conference, August 9 – August 13, 2015, Vail, CO. Paper number: AAS-15-630.

5. Service.

Departmental Hiring Committee	2019 - Present
Associate Chair	2018 - Present
Midshipmen Honor Remediation	2017 - Present
Plebe Academic Adviser	2017 - Present
Departmental Academic Adviser	2017 - Present
Formative Assessment of Classroom Teaching Consultant	2017 - Present
Supporting NCAA Recruiting Informational Luncheons	2017 - Present
Aptitude for Commissioning Review Committee Member	2017 - 2018
Departmental Name Change Committee Member	2017 - 2018
Assistant Engineering and Weapons Division Gift Fund Manager	2017