James Campbell Kinsey

266 Woods Hole Rd
MS #7
Woods Hole, MA 02543 USA

Voice: 508 289 3470
E-mail: jkinsey@whoi.edu
URL: www.whoi.edu/people/jkinsey

Professional Preparation

State University of New York at Stony Brook, Stony Brook, NY, Mech. Engineering	B.E., 1998
The Johns Hopkins University, Baltimore, MD, Mech. Engineering	M.S., 2002
The Johns Hopkins University, Baltimore, MD, Mech. Engineering	Ph.D, 2006
The Johns Hopkins University, Baltimore, MD, Robotics	2006-2007
Woods Hole Oceanographic Institution, Woods Hole, MA, Ocean Robotics	2007-2009

Appointments

Woods Hole Oceanographic Institution, Woods Hole, MA USA

Associate Scientist, Applied Ocean Physics and Engineering	October 2013 - present
Assistant Scientist, Applied Ocean Physics and Engineering	December 2009 - October 2013

The Johns Hopkins University, Baltimore, MD USA

Visiting Research Scientist, Department of Mechanical Engineering	July 2007 - present

Products *indicates the author was a student I mentored; †a student I co-mentored; ‡a postdoc I sponsored. In electronic versions of this document, click on the blue text to access the cited reference.

Most Relevant

L. Medagoda‡, **J.C. Kinsey**, and M. Eilders. Autonomous Underwater Vehicle Navigation in a Spatiotemporally Varying Water Current Field. *Proceedings of the 2015 IEEE International Conference on Robotics and Automation*. Submitted, under review.

C.J. McFarland, M.V. Jakuba, S. Suman, **J.C. Kinsey**, and L.L. Whitcomb. Toward Ice-Relative Navigation of Underwater Robotic Vehicles Under Moving Sea Ice: Experimental Evaluation in the Arctic Sea. *Proceedings of the 2015 IEEE International Conference on Robotics and Automation*. Submitted, under review.

L. Medagoda‡, S.B. Williams, O. Pizzaro, **J.C. Kinsey**, and M.V. Jakuba. Mid-water Current Aided Localization for Autonomous Underwater Vehicles. *Autonomous Robots*. Submitted, under review.

M.J. Stanway* and **J.C. Kinsey**. Rotation Identification Using Geometric Algebra with an Application in Underwater Navigation. *Journal of Field Robotics*. Accepted, to appear.

J.C. Kinsey and L.L. Whitcomb. Adaptive identification on the group of rigid body rotations and its application to precision underwater vehicle navigation. *IEEE Transactions on Robotics*, 23(1):124-136, 2007.

Significant

J.C. Kinsey, Q. Yang*, and J.C. Howland. Nonlinear Dynamic Model-Based State Estimators for Underwater Navigation of Remotely Operated Vehicles. *IEEE Transactions on Control Systems Technology*. 22(5), pp.1845-1854, 2014.

J.C. Kinsey, D.R. Yoerger, M.V. Jakuba, R. Camilli, C. R. Fisher, and C.R. German. Assessing the Deepwater Horizon Oil Spill with the Sentry Autonomous Underwater Vehicle. *Proceedings of the 2011 IEEE International Conference on Intelligent Robots and Systems*. 261-267, September 2011, San Francisco, CA. doi:10.1109/IROS.2011.6095008

R. Camilli, C.M. Reddy, D.R. Yoerger, B. Van Mooy, M.V. Jakuba, **J.C. Kinsey**, C.P. McIntyre, S.P. Sylva, and J. V. Maloney. Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon. *Science*, 330(6001):201-204, 2010.

J.C. Kinsey and L.L. Whitcomb. In-situ alignment calibration of attitude and Doppler sensors for precision underwater vehicle navigation: Theory and experiment. *IEEE Journal of Oceanic Engineering*. 32(2):286-299, 2007.

J.C. Kinsey and L.L. Whitcomb. Preliminary field experience with the DVLNAV integrated navigation system for oceanographic submersibles. *Control Engineering Practice*, 12(12):1541-1548, 2004. Invited Paper.

Synergistic Activities

Service: GEPAC department representative (April 2013 - present); AOP&E seminar coordinator (2010-2011); Co-convener, 2013-2014 Keck Institute for Space Studies workshop with NASA Jet Propulsion Laboratory and California Institute of Technology; Principal Investigator, UNOLS Potential Field Pool Equipment (PFPE) Facility (2009 - present).
Education & Outreach: Adviser to 1 postdoctoral investigator; co-advised 1 Joint Program student; advised or co-advised 3 Summer Student Fellows; advised or co-advised 3 guest students; mentor to the Natick High School ROVER program.
Engineering Products: Co-authored DVLNAV: navigation system employed on the 4500m Alvin submersible; and 5 ROVs; lead author of the navigation software for the Nereus, Sentry, and Nereid Under-Ice robots; numerous engineering contributions to the Sentry AUV, Nereus HROV, and Nereid Under-Ice ROV; lead author of the software employed for post-processing NDSF vehicle navigation data; lead author of marine gravity logging software used on UNOLS vessels.
Recent Reviews: International Journal of Robust and Nonlinear Control, IEEE Transactions on Robotics, Journal of Systems and Control Engineering, IEEE Transactions on Control Systems Technology, IEEE Conference on Robotics and Automation, IEEE Journal of Oceanic Engineering, Journal of Field Robotics, IEEE Geoscience and Remote Sensing Letters.
Field Deployments: 21 field expeditions with robotic systems to: Gulf of Mexico (2), Kermadec Arc, Haakon-Mosby Mud Volcano, DWH/Macondo Well Oil Spill, Mid-Cayman Rise (3), Challenger Deep, Juan de Fuca Ridge (4), North and South Atlantic, Pacific Ocean, Black Sea.

Collaborations & Other Affiliations

Graduate Adviser(1) — Louis Whitcomb, The Johns Hopkins University
Postdoctoral Sponsors(3) — WHOI: Dana Yoerger and Maurice Tivey; JHU: Louis Whitcomb
Adviser and Sponsor for: *Postdoctoral(2):* Brian Claus, Lashika Medagoda (DFKI, Bremen, Germany); *Graduate(2):* LTCDR James Kepper (US Navy), M. Jordan Stanway (MBARI); *Undergraduate (6):* Jacob Izraelovitz (MIT), John Salisbury (MITRE), Mark Van Middlesworth (Google), Fraser Novakowski (Accenture), Abhimanyu Belani (MIT), Qingjun Yang (MIT), Jerry Fontus (Georgia Tech).
Collaborators(64) — S. Bennett-BGS(UK) A. Bowen-WHOI; J. Buescher-U.S. Navy SPAWAR; A. Boetius, AWI(Germany); R. Camilli-WHOI; S. Carbotte-LDEO; R. Castano-NASA-JPL; L. Cocchi-GNS(NZ); M.L. Coleman-JPL/CalTech; T. Crone-LDEO; B. deLapinay - Centre National de la Recherche Scientifique; C. de Ronde-GNS(NZ); M. Eilder-AFRL; R. Eustice-Univ. Michigan; V. Ferrini-LDEO; B. Fletcher-U.S. Navy SPAWAR D. Fornari-WHOI; C. German-WHOI; D. Gomez-Ibanez-WHOI; M. Heintz-WHOI; D. Honig-Duke Marine Lab; J. Howland-WHOI; J. Huber-Marine Biological Lab; S. Humphris-WHOI; M. Jakuba-WHOI; M. Kurz-WHOI; M. Leybourne-GNS(NZ); S. Leroy-Centre National de la Recherche Scientifique; L. Mayer (UNH); J. Maloney-Monitor Instruments; S. Martin-SPAWAR; R. McCabe-WHOI; J. McDermott-WHOI; G. McDonald-WHOI; C. McFarland-Amazon; C. McIntyre-WHOI; E. Mittelstadt - Univ Idaho; K. Nakamura-National Inst. of Advanced Science and Technology/Tokyo; J. Partan-WHOI; D. Peters-WHOI; O. Pizzaro-ACFR; E. Reddington-MBL; C. Reddy-WHOI; R. Reves-Sohn-WHOI; Y. Rzhanov-UNH; D. Schreirer-USGS; J. Seewald-WHOI; T. Shank-WHOI; H. Singh-WHOI; J. Smith-Marine Biological Laboratory; S. Soule-WHOI; S. Suman-WHOI; S. Sylva-WHOI; C. Taylor-WHOI; A. Thompson - Cal Tech; M. Tominaga-MSU; F. Tontini-GNS(NZ); G. Troni-MBARI; C. Van Dover-Duke Marine Lab; B. Van Mooy-WHOI; S. Webster-UW-APL.; S. White-USC; S.B. Williams-ACFR; C. Young-U.S. Navy Space and Naval Warfare Systems Center.