

NAVAL SCIENCE AND TECHNOLOGY

EGR 201: Seminar in Naval Science & Technology

Tuesday, March 6, 2018

5:00 pm to 5:50 pm

Kirk Auditorium

“Naval Design Science and Prototyping at Navatek”

Summary: Naval engineering involves unique challenges depending on mission objectives, operating conditions, costs, and many other factors. Navatek, with offices in Hawaii and Rhode Island, has a unique background in innovative ship design and development of system prototypes. Our work includes developments in computational physics, data science, and multi-disciplinary engineering. This seminar will present a broad overview of Navatek’s projects in Naval Science and Technology and delve more deeply into two particular examples, inflatable technology and early-stage ship structural design.

Dr. David Kring, Ph.D., Chief Scientist

NAVATEK

Dave leads the Rhode Island office and serves as Chief Scientist for the company. His career has been devoted to Naval Science and Technology, mainly sponsored by the US Office of Naval Research. He earned a Ph.D. in Hydrodynamics from M.I.T. in 1994, after completing a B.S. in Naval Architecture from Webb Institute. Dave has been involved with the development of hydrodynamic codes such as WAMIT, SWAN, and most recently in the ship seakeeping code Aegir, but his focus is now quite broad. He’s pursuing a wide range of projects outside of hydrodynamics including ship design science, structures, power and energy systems, cyberphysical security, interaction of electromagnetic and acoustic phenomenon, and many other subjects. Dave’s role at Navatek is to lead the RI team and to look ahead at new technology that will benefit our Navy clients.

Chris Hart, Senior Research Engineer

NAVATEK

Chris has over 37 years of experience as a naval architect/engineer in the design, analysis and testing of advanced marine vehicles, in both private industry and government. Chris has worked at Navatek for the past 15 yrs performing a variety of duties including directing full scale sea trials, model tests and hydrodynamic performance analyses of many of Navatek’s unique high-performance vessel designs and prototypes. Additionally, he supports our hydrodynamic software development and validation. He holds a BSME from University of Maryland and an MS in Ocean and Marine Engineering from George Washington University. His current research is focused on the development of inflatable technology and in particular, the production and modeling of a 3D textile used in inflatable structures. He is currently working jointly with URI on an innovation voucher project to develop simulation and modeling techniques for inflatable structures.

Maggie Craig, Engineer

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Maggie joined Navatek in 2013. She is a graduate of the University of Rhode Island where she studied Ocean Engineering and minored in Marine Biology. At Navatek, Maggie is an engineer on the design science team, focusing on internal loads of ship in extreme sea states. She develops and validates our medium fidelity potential flow code Aegir with respect to design loads on naval ships. She has been heavily involved with designing and developing the graphical user interface and supplemental documentation to assist new users with these tools. Maggie also manages the STEM outreach team at Navatek, including both the FLEET and Virtual Sea Perch programs. She regularly interacts with users of these programs to obtain feedback on the games and helps to design the overall game flow. Maggie has been involved with writing and reviewing various lesson plans and supplemental material to emphasize the educational aspect of these programs.

Upcoming Distinguished Seminars

 **Mike Vidal**
Engineering Manager
CMT MATERIALS, INC.
ENGINEERED SYNTACTIC
SYSTEMS, LLC
March 20th @ 5pm
Kirk Auditorium

 **Robert Lafreniere**
TAG Director
OFFICE OF NAVAL
RESEARCH GLOBAL,
UNDERSEA WARFIGHTING
DEVELOPMENT CENTER

Robert Mushen
Science Advisor
OFFICE OF NAVAL
RESEARCH GLOBAL,
UNDERSEA WARFIGHTING
DEVELOPMENT CENTER
March 28th @ 5pm LH 205

 **Priya Hicks**
Program Lead
Independent Research
& Development
GENERAL DYNAMICS
ELECTRIC BOAT
April 3rd @ 5pm LH 205

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