

Joseph A Curcio

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Security Clearance

Secret

Summary of Qualifications

Mr. Curcio received his Master's of Engineering and Master's of Science in Ocean Engineering and Ocean Systems Management from MIT in 1995. His Master's thesis addressed remote monitoring of the benthic marine environment using robotic camera systems. While working at the MIT [Autonomous Underwater Vehicles Lab](#), Mr. Curcio participated in the design, development and deployment of early [Odyssey class AUVs](#) and led a team in the design and development of [CETUS](#), the world's first production level Autonomous Underwater Vehicle capable of hovering and station-keeping. ([Story published in Sea Technology, December 1998](#))

While at MIT, Mr. Curcio worked with Professor [John Leonard](#) at MIT Department of [Ocean Engineering](#) and then on the development of a low cost, reliable autonomous surface platform suitable for a wide variety of applications in the marine environment - [SCOUT](#) (Surface Craft for Oceanographic and Undersea Testing). Research included software development in adaptive behavior with multiple vehicles addressing [COLREGS](#) (Collision prevention) requirements using autonomous and robotic vehicles. This work was performed in conjunction with [Michael Benjamin](#) from NUWC/Newport using [MOOS-IvP](#) autonomy software.

Prior to pursuing his graduate studies at MIT, Mr. Curcio worked aboard several large sailing vessels including two of the historic [J-Class](#) yachts. As engineer aboard [Endeavour](#) and [Shamrock V](#), Mr. Curcio honed his problem solving skills and gained substantial practical experience designing and improving electro-mechanical systems subjected to the harshest of marine conditions. He was awarded US Patent Number [6,414,629](#) for the development of a GPS based tracking system intended for locating persons lost at sea. See [Outside Magazine, March 2007 issue](#).

Mr. Curcio was appointed as Secretary of the ASTM (American Society of Testing Materials) F41.05 Subcommittee for Unmanned Marine Vehicle Regulations providing insight and guidance in the development of standards associated with COLREGS compliant marine autonomy.

Education

Massachusetts Institute of Technology, Cambridge, MA
Master of Science in Ocean Systems Management, 1995.
Master of Engineering in Ocean Engineering, 1995.

University of Vermont, Burlington, VT
Bachelor of Science in Mechanical Engineering, 1985.

Professional experience

2010 – Present: [Juliet Marine Systems, Inc.](#) Portsmouth, NH.
Vice President, Research and Development: Responsible for overseeing and managing all engineering aspects of a unique SWATH vessel employing a novel propulsion system utilizing air as a mechanism to reduce hull drag.

2003 – 2010: Massachusetts Institute of Technology, Ocean Engineering.
Research Engineer: Project management, design, development and operation of Autonomous Surface Craft and Autonomous Underwater Vehicles. Focus on

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Professional experience (cont.)

[multivehicle autonomy](#) optimization addressing two primary areas of research pertinent to US Navy operations; MCM (Mine Countermeasure) and ASW (Anti Submarine Warfare), using autonomy behaviors including Moving Long Baseline (MLBL) employing acoustic communications for improved underwater navigation.

Chief Scientist during ONR funded [PLUSNet](#) (Persistent Littoral Undersea Surveillance Network) 2006 and 2007 field exercises, successful demonstration of remote high-level collaborative field control of multiple autonomous assets (NAFCON) and numerous additional in-water deployments.

Lead ASC Engineer in [AOFNC CADRE \(Cooperative Autonomy for Distributed Research and Exploration\)](#) at Panama City AUVFest '07 using Moving Long Baseline (MLBL) navigation and a suite of autonomous underwater vehicles, autonomous surface craft and HFGW (High Frequency Ground Wave) radios. First successful in-water demonstration of multiple autonomous vehicles detecting, classifying and localizing "objects of interest" in real time.

1999 – 2010: [Robotic Marine Systems, LLC](#), Gray, Maine.

President: Small startup company developing and manufacturing low cost Autonomous Surface Craft for an array of customers and applications. Also provided engineering analysis and design on a variety of marine applications including autonomous vehicles, remote monitoring systems, [aquaculture applications](#) and unmanned navigation and control. Awarded several DoD contracts through SBIR, BAA and other programs.

Lead Project Engineer (owner's representative) constructing 52 meter sailing sloop at Derecktor's Shipyard, Bridgeport CT. Consultant on several other yacht restoration projects.

1993 – 1999: Massachusetts Institute of Technology, Sea Grant College Program. Research Engineer: Project manager and lead AUV mechanical designer; design and development of Autonomous Underwater Vehicles. Numerous at sea deployments including five weeks in Labrador Sea aboard the R/V Knorr, developing and testing deep water autonomous docking system and advanced navigation of AUVs.

1991 – 1993: J-Class Management, Newport, Rhode Island.

Chief Engineer: J-Class sloops Endeavour and Shamrock-V servicing and maintaining all shipboard equipment.

1989 – 1991: Parker-Hannifin Corporation, Nichols Motor Division, Gray, Maine. Applications Engineer: Hydraulic motors, pumps and operating systems.

1988 – 1985: Kelsey-Hayes Company, Romulus, Michigan.

Product and Sales Engineer: Automotive brake systems and electro-mechanical sensors.

Additional Relevant Experience

Mr. Curcio is proficient in Solidworks 3-D modeling software, COSMOS finite element analysis toolkit and familiar with UNIX/Linux operating systems. Mr. Curcio is skilled in essential machine shop operations using a wide variety of tools.

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