



**2019 CMR Entrepreneur Forum
July 17-18, 2019
Woods Hole Oceanographic Institution**

**#RoboticsRising2019
#WHOI_CM**

THEME: A Rising Tide

These are exciting days in marine robotics. The industry is growing, new companies are being created weekly, and investors are waking to the opportunities in the ocean domain. Technology created in markets as diverse as additive manufacturing, autonomous cars, and consumer robotics is being repurposed to change how we design, build, and use robots. The growth is tied to increasing human activity in the ocean. In marine science, in industry, and in defense, robotics is moving mainstream. However, substantial challenges remain. At the 2019 Marine Robotics Entrepreneurs Forum, the discussion will focus on defining the challenges facing the industry and framing initiatives we can collectively undertake to accelerate progress. Working together we can create a rising tide of ocean innovation to understand and wisely use the ocean.



Wednesday, July 17 – Leadership Forum
Location: Clark Building, 5th Floor, WHOI Quisset Campus

8:00am – 8:30am	Registration and Breakfast (<i>provided</i>)
8:30am – 8:45am	<p>Welcome and Introduction: <i>A Rising Tide Floats All Robots</i></p> <ul style="list-style-type: none"> ▪ Jim Bellingham, Director, WHOI Center for Marine Robotics ▪ Mark Abbot, President and Director, WHOI
8:45am-9:15am	Keynote Speaker – John Leonard, MIT/Toyota
9:15am – 10:45am	<p>Session 1: Perspectives from Entrepreneurs / Lessons Learned</p> <ul style="list-style-type: none"> ▪ Matt George , Apollo Aero ▪ Mark Vasu, Greentown Labs ▪ Pete Warden, Google ▪ Nicolaus Radford, Houston Mechatronics ▪ John Leonard, MIT/Toyota
10:45am – 11:00am	<i>Networking Break</i>
11:00am – 11:45pm	<p>Company Flash Talks Rapporteur: Leslie-Ann McGee, Assistant Director, CMR</p> <ul style="list-style-type: none"> ▪ Suburban Marine ▪ World Wildlife Fund ▪ Aquabotix ▪ Draper ▪ Hydrocomp Inc. ▪ L3 Harris -OceanServer ▪ Polaris Contract Manufacturing/Lockheed Martin ▪ Manna Fish Farms ▪ SeaTrac
11:45am - 12:45pm	<i>Lunch (provided)</i>
12:15pm – 12:45pm	Lunch Talk – Chris Scholin, President & CEO, Monterey Bay Aquarium Research Institute (MBARI)
12:45pm – 2:15pm	<p>Session 2: Market Trends and Development</p> <ul style="list-style-type: none"> ▪ Charles Holtsclaw, TechnipFMC ▪ Christine Fox, Johns Hopkins Applied Physics Lab ▪ Mike Connor, ThayerMahan ▪ Chris Scholin, MBARI

2:15pm – 2:45pm	<i>Networking Break</i>
2:45pm – 3:30pm	<p>Company Flash Talks Rapporteur: Leslie-Ann McGee, Assistant Director, CMR</p> <ul style="list-style-type: none"> ▪ C.A. Goudey and Associates ▪ Ocean Exchange ▪ Coastal Capitalization Consultants ▪ Teledyne Marine ▪ Salve Regina University ▪ ARPA-E ▪ Dive Technologies ▪ Nu-Boats
3:30pm – 5:00pm	<p>Session 3: Launching New Enterprises</p> <ul style="list-style-type: none"> ▪ Roly Morris, Cuna Del Mar ▪ Paul Dobbins, World Wildlife Fund ▪ Mark Schrope, Schmidt Marine Technology Partners ▪ Alissa Peterson, Sea Ahead
5:00pm-6:30pm	Networking Reception (<i>Light food and beverages provided.</i>)

Thursday, July 18 – Technology Showcase and In-Water Demos
Location: Islin Marine Facility, WHOI Village Campus

8:00am – 10:00am	Showcase Exhibitor and Demonstration Set-Up (<i>Light Breakfast Provided</i>)
9:00am – 10:00am	<p>Long Wave Talks Location: Smith Conference Room</p> <ul style="list-style-type: none"> ▪ Pathways to Ocean Worlds, Julie Huber, WHOI ▪ Ocean Twilight Zone, Dana Yoerger, WHOI ▪ Ocean Discovery XPRIZE, Andrew Remsen
10:00am – 12:00pm	<p>Exhibits, In-Water Demonstrations and Short Wave Talks Location: Islin Marine Facility</p> <p>10:00am – 10:30am – Tend Ocean / Drone Tug 10:30am – 11:00am – Teledyne / Benthos UTS Deck Box Subsea Survey with new GPS Feature 11:00am – 11:30am – Short Wave Talk 1 – Robot Operating System (ROS) / Carl Kaiser, WHOI 11:30am – 12:00pm – L3 Technologies OceanServer / Iver AUV</p>

<p>12:00pm – 1:15pm</p>	<p>Lunch <i>(provided)</i> Special Keynote Panel - “The Future of Ocean Innovation” Location: Redfield Auditorium</p> <ul style="list-style-type: none"> ▪ Tom Curtin, Senior Principal Research Scientist at the Applied Physics Laboratory/UW & Senior Fellow at the Institute for Adaptive Systems ▪ Christine Fox, Assistant Director, Johns Hopkins Applied Research Lab ▪ Carolyn Kirk, Executive Director, Massachusetts Technology Collaborative ▪ Jim Bellingham, Director, WHOI Center for Marine Robotics (<i>Moderator</i>) <p><i>(Participants pick up box lunches 12:00-12:15pm in Smith Lobby)</i></p>
<p>1:45pm – 4:15pm</p>	<p>Exhibits, In-Water Demonstrations and Short Wave Talks Location: Islin Marine Facility</p> <p>1:45pm – 2:15pm – Sea Machines / Autonomous Vessel</p> <p>2:15pm – 2:45pm – Aquabotix / Swarm Diver</p> <p>2:45pm – 3:15pm - WHOI / JetYak Remote Surface Vehicle</p> <p>3:15pm – 3:45pm – WHOI / Assymetric Propulsion</p> <p>3:45pm – 4:15pm – Short Wave Talk 2 – Roundabout Database / John Reine, WHOI</p>
<p>4:15pm – 5:15pm</p>	<p>Reception, Wrap Up and Breakdown <i>(Light food and beverages provided.)</i> Location: Islin Marine Facility</p> <p style="text-align: center;">DunkWorks Tour: 4:15pm – 4:45pm. Meet at Tent Podium.</p>

INTERNET CONNECTION CODES:

Wednesday, July 17: CMRFORUM5

Thursday, July 18: t6HA4bV7S

www.whoi.edu/marinerobotics