



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

#RoboticsRising2019 #WHOI_CMR

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

8:30am – 8:45am Welcome and Introduction: A Rising Tide Floats All Robots 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 Session 1: Perspectives from Entrepreneurs / Lessons Learned Matt George , Apollo Aero Mark Vasu, Greentown Labs Pete Warden, Google Niclous Radford, Houston Mechatronics John Leonard, MIT/Toyota 10:45am – 11:45pm Networking Break Company Flash Talks Rapporteur: Leslie-Ann McGee, Assistant Director, CMR Suburban Marine World Wildlife Fund Aquabotix Draper Hydrocomp Inc. L B Harris - OceanServer Polaris Contract Manufacturing/Lockheed Martin Manna Fish Farms SeaTrac 11:45am - 12:45pm Lunch (provided) 12:15pm – 12:45pm Lunch Talk – Chris Scholin, President & CEO, Monterey Bay Aquarium Research Institute (MBARI) Session 2: Market Trends and Development Christine Fox, Johns Hopkins Applied Physics Lab Mike Connor, ThapeyrMahan Chris Scholin, MBARI	8:00am – 8:30am	Registration and Breakfast (provided)
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2:15pm – 2:45pm	Networking Break
2:45pm – 3:30pm	Company Flash Talks Rapporteur: Leslie-Ann McGee, Assistant Director, CMR 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	Session 3: Launching New Enterprises
	 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 (Light food and beverages provided.)

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 (Light Breakfast Provided)
9:00am – 10:00am	Long Wave Talks
	Location: Smith Conference Room
	Pathways to Ocean Worlds, Julie Huber, WHOI
	Ocean Twilight Zone, Dana Yoerger, WHOI Ocean Discovery YPRIZE Andrew Remon
	 Ocean Discovery XPRIZE, Andrew Remsen
10:00am – 12:00pm	Exhibits, In-Water Demonstrations and Short Wave Talks
	Location: Islin Marine Facility
	'
-	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

12:00pm - 1:15pm	Lunch (provided)
12.00pm = 1.15pm	Special Keynote Panel - "The Future of Ocean Innovation"
	Location: Redfield Auditorium
	Eocation. Neuricia Additionalii
	 Tom Curtin, Senior Principal Research Scientist at the Applied Physics
	Laboratory/UW & Senior Fellow at the Institute for Adaptive Systems
	Laboratory/OVV & Seriior Fellow at the institute for Adaptive Systems
	Christine Fox, Assistant Director, Johns Hopkins Applied Research Lab
	- Christine Fox, Assistant Director, Johns Hopkins Applied Research Lab
	 Carolyn Kirk, Executive Director, Massachusetts Technology Collaborative
	Carbiyn Kirk, Executive Director, Massachusetts Technology Collaborative
	 Jim Bellingham, Director, WHOI Center for Marine Robotics (Moderator)
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	(Participants pick up box lunches 12:00-12:15pm in Smith Lobby)
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1:45pm – 4:15pm	Exhibits, In-Water Demonstrations and Short Wave Talks
1.45pm – 4.15pm	Location: Islin Marine Facility
	Location. Islin Warnie Facility
	1:45pm – 2150pm – Sea Machines / Autonomous Vessel
	1.43pm 2130pm Sea Waterines / Autonomous vesser
	2:15pm – 2:45pm – Aquabotix / Swarm Diver
	2:45pm – 3:15pm - WHOI / JetYak Remote Surface Vehicle
	3:15pm – 3:45pm – WHOI / Assymetric Propulsion
	3:45pm – 4:15pm – Short Wave Talk 2 – Roundabout Database / John Reine, WHOI
4:15pm – 5:15pm	Reception, Wrap Up and Breakdown (Light food and beverages provided.)
	Location: Islin Marine Facility
	DunkWorks Tour: 4:15pm – 4:45pm. Meet at Tent Podium.

INTERNET CONNECTION CODES:
Wednesday, July 17: CMRFORUM5
Thursday, July 18: t6HA4bV7S

www.whoi.edu/marinerobotics