



## WHOI CENTER FOR MARINE ROBOTICS

### 5<sup>th</sup> ANNUAL ENTREPRENEUR'S FORUM

Wednesday, July 17 & Thursday, July 18, 2019

### Speaker Bios

#### **Dr. Mark Abbott, President and Director, Woods Hole Oceanographic Institution**

Mark Abbott is the tenth director and president of Woods Hole Oceanographic Institution. Dr. Abbott was dean of College of Earth, Ocean, and Atmospheric Sciences (CEOAS) at Oregon State University. Dr. Abbott came to OSU as an associate professor in 1988, following six years as a member of the technical staff at the Jet Propulsion Laboratory and an assistant adjunct professor in the Marine Life Research Group at the Scripps Institution of Oceanography from 1982 to 1988. He was appointed dean at OSU in 2001. His research focuses on the interaction of biological and physical processes in the upper ocean and relies on both remote sensing and field observations. Dr. Abbott has also advised the Office of Naval Research and the National Science Foundation on issues regarding advanced computer technology and oceanography. In 2011, Abbott was the recipient of the Jim Gray eScience Award, presented by Microsoft Research and presented to a nationally recognized researcher who has made outstanding contributions to data-intensive computing. He is a member of the Board of Trustees for the Consortium for Ocean Leadership as well as the Board of Trustees for NEON, Inc., which is constructing the National Ecological Observatory Network for the NSF, and served as president of The Oceanography Society from 2013-2014. Abbott holds a B.S. in conservation of natural resources from the University of California, Berkeley, and a Ph.D. in ecology from the University of California, Davis.

#### **Dr. James G. Bellingham, Director, WHOI Center for Marine Robotics**

Jim Bellingham is the founding Director of the Center of Marine Robotics at the Woods Hole Oceanographic Institution (WHOI). Bellingham joined WHOI from the Monterey Bay Aquarium Research Institute (MBARI), where he was first Director of Engineering and then Chief Technologist. Prior to MBARI, he founded the Autonomous Underwater Vehicles Laboratory at MIT Sea Grant (1988) and co-founded Bluefin Robotics (1997), a Massachusetts-based company that develops, builds and operates autonomous underwater vehicles (AUVs) and was acquired by Battelle in 2005. Bellingham's research activities revolve around creation of autonomous marine robots and their use at sea. He pioneered the development of small, high performance AUVs, resulting in a class of systems which are now widely used within the military, industry and scientific communities. He was instrumental in developing and demonstrating distributed system approaches to ocean observing, leading the Autonomous Ocean Sampling Network program which coupled fleets of AUVs to ocean models to observe and predict ocean conditions. Bellingham has spent considerable time at sea, leading over 20 AUV expeditions in locations such as the Antarctic, North Atlantic, Mediterranean, South Pacific, and the Arctic. He has



served on numerous advisory committees and boards, including Chairing the Naval Research Advisory Committee and serving on several National Academies studies. His awards include the Lockheed Martin Award for Ocean Science and Engineering and the MIT Fourteenth Robert Bruce Wallace lecturer. Bellingham received an B.S., M.S., and Ph.D. in physics from the Massachusetts Institute of Technology.

**Mr. Mike Connor, Vice Admiral (ret), US Navy**

Mike founded ThayerMahan Inc. in order to accelerate the United States' ability to effectively and efficiently monitor ocean activity using autonomous systems. Recognized globally as an authority on undersea operations, Mike brings a wealth of experience. In a 35-year career in which he rose to the rank of Vice Admiral in the United States Navy, Mike commanded at the ship, squadron, and task force levels. His assignments include command of USS SEAWOLF, a nuclear-powered attack submarine, Submarine Squadron EIGHT, Undersea Forces in the Western Pacific, Undersea Forces in the Arabian Gulf, the United States Submarine Force, and NATO's Allied Submarine Command. Mike led the US Navy Submarine Force move into robotic undersea systems, achieving key milestones including the first operational deployment and recovery of an unmanned vehicle from a submarine. He led an innovation effort that began the shift away from undersea search operations based on expensive platforms and moved toward operations based on large numbers of inexpensive vehicles. In doing so, he broke new ground in undersea communications, development of undersea networks, and development of technology to support extended range undersea weapons. Mike has written extensively on the future of undersea warfare and is a sought-after speaker on undersea warfare topics.

**Dr. Thomas Curtin, Senior Principal Research Scientist, University of Washington**

Thomas Curtin is currently a senior Principal Research Scientist at the Applied Physics Laboratory, University of Washington. From 2008 to 2011, he served as Chief Scientist at the NATO Undersea Research Centre in La Spezia Italy. From 2007 to 2008, he was the Chief Knowledge Officer at the Association for Unmanned Vehicle Systems International. From 1984 to 2007, he managed basic and applied research and programs at the United States Office of Naval Research (ONR) in Physical Oceanography, Arctic Sciences, Ocean Modeling and Prediction and Undersea Autonomous Operations. He also served as Deputy Director of ONR for Strategy and Planning (2003). From 1979 to 1984, he was an Assistant Professor at North Carolina State University and a Principal Investigator on numerous research grants and contracts. From 1969 to 1971, he served in the Peace Corps as an oceanographer at the Fisheries Research Institute in Penang, Malaysia. Thomas Curtin received the B.S. degree in Physics from Boston College, the M.S. and Ph.D. degrees in Physical Oceanography from Oregon State University and the University of Miami, respectively, and the M.B.A. degree from Massachusetts Institute of Technology. His thesis topics focused on electrical fields in the ocean, coastal ocean frontal dynamics, and research management using system dynamics and real option valuation. He has been editor of IEEE and AGU journals and an Ocean Engineering Handbook (Springer), has authored 35 peer-reviewed papers, 21 technical reports and 2 patents. He has been Chief Scientist on 25 oceanographic cruises in mid-latitude and equatorial Atlantic and Pacific Oceans, the Arctic Ocean, the Ross Sea in Antarctica, and the South China Sea. He has been awarded the U.S. Navy Meritorious Civilian Service Medal, the U.S. Navy Superior Civilian Service Medal, the U.S. Navy Unit Commendation and the U.S. Coast Guard Arctic Service Medal



**Mr. Paul Dobbins, Senior Specialist, World Wildlife Fund**

Paul Dobbins joined the World Wildlife Fund to lead the global project “Advancing Seaweed and Shellfish Aquaculture for Climate Change Gain”. Paul provides thought leadership and finance expertise on how seaweed and shellfish aquaculture can be scaled for increased production and utilized to reduce GHG emissions and sequester carbon. Before joining WWF Paul spent a decade as a shellfish farmer and leading the development of the country’s first open ocean commercial kelp farms. Paul started and sold his first company in college and has participated in a variety of entrepreneurial ventures throughout his career. He was a managing director at IDEXX Laboratories, a publicly traded biotech company focused on the development of diagnostic products and service businesses for both the companion and production animal sectors that grew to over \$1 billion in sales, and participated the growth of several other consumer product and business to business start-ups. Paul has served on the advisory boards of Maine SeaGrant, the Aquaculture Research Institute at the University of Maine, the Maine Aquaculture Association, Focus Maine, The Maine Technology Institute, and the Conservation Law Foundation. He holds degrees in business administration from Colby College and the University of Minnesota. Paul and his wife Amy live in Washington, D.C.

**Hon. Christine Fox, Applied Physics Laboratory at Johns Hopkins University, Former Acting Secretary of Defense**

Christine H. Fox became the Assistant Director for Policy and Analysis of the Johns Hopkins University Applied Physics Laboratory on May 12, 2014. As the nation’s largest University Affiliated Research Center, APL performs research and development on behalf of the Department of Defense, the intelligence community, the National Aeronautics and Space Administration, and other federal agencies. The Laboratory has more than 6,000 staff members who are making critical contributions to a wide variety of nationally and globally significant technical and scientific challenges. Previously, Fox served as Acting Deputy Secretary of Defense between December 2013 and May 2014. With her appointment, Fox became the highest-ranking female official in history to serve in the Department of Defense. From 2009 to 2013, she served as the Director, Cost Assessment and Program Evaluation in the Office of the Secretary of Defense. In that position, she was the principal civilian advisor to the Secretary of Defense for analyzing and evaluating plans, programs, and budgets in relation to U.S. defense objectives and resource constraints. Prior to her government service, Fox served as the President of the Center for Naval Analyses (CNA), a Federally Funded Research and Development Center and as the scientific analyst to the Chief of Naval Operations. During her 28-year career at CNA, Fox oversaw analysis of real-world operations, from the first Gulf War and the operations in Bosnia and Kosovo in the 1990s, to the operations in Afghanistan immediately following the September 11 attacks, and the operation in Iraq in early 2003. From 2003-2005, Fox served as a member of NASA’s Return to Flight Task Group, chartered by the NASA Administrator to certify the recommendations made by the Columbia Accident Investigation Board. Fox was appointed by the President to the Board of Visitors of the U. S. Naval Academy. She also serves on the Board of Trustees for the Woods Hole Oceanographic Institution, the Board on Mathematical Sciences and their Applications at the National Research Council, and is a member of the Council on Foreign Relations. She is a three-time recipient of the Department of Defense Distinguished Service Medal and has been awarded the Department of the Army Distinguished Civilian Service decoration. Fox earned a Bachelor of Science degree in mathematics and a Master of Science degree in applied mathematics from George Mason University.



**Mr. Matt George, CEO and Founder, Apollo Autonomy**

Matthew George is the CEO of Apollo Autonomy, an aerospace startup co-located in Boston and Los Angeles. Apollo develops autonomous systems for large aerial platforms, and is backed by a number of institutional venture capital firms including First Round, Floodgate, and Box. Before Apollo, Matt was the CEO of two venture backed startups. Outside of startups, Matt has served in a number of community roles including being the technology chair for Boston's 2024 Olympic bid. Matt has a B.A in Biology from Middlebury College, and lives in Boston with his wife Dana and their dog Madeleine.

**Mr. Charles Holtsclaw, Senior Venture Analyst, TechnipFMC**

Charles Holtsclaw is a Senior Venture Analyst who leverages external technology ecosystems to accelerate the pace of innovation at TechnipFMC. In this role, he is primarily focused on technologies related to energy transition, Industry 4.0, digitalization, and emerging materials. Charles searches globally for disruptive technologies that generate strategic value for TechnipFMC's core business units. He believes that the industry will see major changes in the coming years and innovation is the key to staying competitive. Charles is a USMC veteran and has a background in private equity and university technology licensing. He holds a BA in Philosophy from the University of St. Thomas and spends his available evenings as a 3L at the University of Houston Law Center.

**Dr. Julie Huber, Associate Scientist with Tenure, Marine Chemistry & Geochemistry, Woods Hole Oceanographic Institution**

Oceanographer Julie Huber, Ph.D., is broadly interested in how basic Earth processes interact to create and maintain life in our ocean. Her research addresses some of the most central questions about the nature and extent of microbial life on Earth in one of its least explored corners, the seafloor habitat beneath the ocean floor. A 2007 NASA Astrobiology Institute postdoctoral fellow, she has also received the L'Oréal USA for Women in Science fellowship. Beyond her duties as an associate scientist in marine chemistry and geochemistry at the Woods Hole Oceanographic Institution, Julie also serves as the associate director of the National Science Foundation Science and Technology Center for Dark Energy Biosphere Investigations, whose mission is to explore life beneath the seafloor and make transformative discoveries that advance science, benefit society, and inform and inspire the public.

**Dr. Carl Kaiser, Program Manager, Woods Hole Oceanographic Institution**

Carl L. Kaiser holds a B.S, M.S., and PhD in Mechanical Engineering (Robotics) from Colorado State University. He has previously held positions at Colorado State University and Agilent Technologies and is currently a Program Manager in the Applied Ocean Physics and Engineering Department at Woods Hole Oceanographic Institution. Until recently he managed the AUV portion of the National Deep Submergence Facility and now manages an independent portfolio of UUV projects funded by ONR, NOAA, NSF, DARPA and others. His research interests include novel applications for AUVs including in confined spaces, human robot interaction via limited or degraded communication channels, and integration of robotic technologies into human activities.

**Ms. Carolyn A. Kirk, Executive Director, Massachusetts Technology Collaborative**

Carolyn A. Kirk was selected by the Executive Committee of the Massachusetts Technology Collaborative as the agency's executive director on February 6, 2019, and officially started her role on February 11, 2019. Kirk previously served as Interim Executive Director by appointment of the Executive



Committee on June 18, 2018. From January 2015 to early February 2019, she served as the Deputy Secretary of the Executive Office of Housing and Economic Development (EOHED), a role she held since the beginning of the Baker-Polito Administration. As Deputy Secretary, Kirk supported the management of HED's \$1.4 billion-dollar budget and approximately 1,000 employees. In addition, Kirk's portfolio includes serving alongside Lt. Governor Karyn Polito on the Seaport Economic Council. She is extremely familiar with MassTech's work, having chaired the agency's Board on behalf of EOHED, and has been a leader on the effort to bring broadband to 44 unserved towns, working closely with the Massachusetts Broadband Institute at MassTech. Prior to her appointment to the Administration, in 2007 Deputy Secretary Kirk became the first woman popularly elected as Mayor of the City of Gloucester, going on to serve three subsequent terms. Her professional career spans more than 25 years and includes time as a management consultant, working with clients that included many of the Top 20 banks in the U.S. along with Fortune 500 companies. She was raised in Clinton, N.Y., and moved to Massachusetts to attend college, graduating from Boston College in 1984.

**Dr. John Leonard, Samuel C. Collins Professor in the MIT Department, Toyota/MIT**

Dr. John J. Leonard is Samuel C. Collins Professor in the MIT Department of Mechanical Engineering and a member of the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL). His research addresses the problems of navigation and mapping for autonomous mobile robots and underwater vehicles. He was one of the first researchers to work on the problem of Simultaneous Localization and Mapping (SLAM). He holds the degrees of B.S.E.E. in Electrical Engineering and Science from the University of Pennsylvania (1987) and D.Phil. in Engineering Science from the University of Oxford (1994). He was team leader for MIT's DARPA Urban Challenge team, which was one of eleven teams to qualify for the Urban Challenge final event and one of six teams to complete the race. He is the recipient of an NSF Career Award (1998) and the King-Sun Fu Memorial Best Transactions on Robotics Paper Award (2006). He is an IEEE Fellow (2014). Since 2016, Professor Leonard has also worked at Toyota Research Institute (TRI). At TRI, Dr. Leonard is helping to lead an effort to create the Toyota Guardian system for increasing the safety of human driving by exploiting advanced perception and navigation capabilities developed by the mobile robotics research community.

**Ms. Leslie-Ann McGee, Assistant Director, WHOI Center for Marine Robotics**

As a management team with Dr. Jim Bellingham, Leslie-Ann McGee is responsible for developing strategic vision and leadership, managing external relations and partnerships and retaining primary responsibility for organizational and program management of CMR. She provides leadership on customer relationship management for industrial clients and government sponsors and supports CMR Director in incubation of a robust robotics program at WHOI. Among other projects, McGee manages the "Robots to the Sea" project, a partnership to drive innovation in marine robotics between WHOI and the Commonwealth of Massachusetts. She is an expert in ocean and coastal issues in both the domestic and international arena and has a diverse background working with and for state, regional, national, business and environmental entities globally. She has direct experience working as regulatory staff within the federal and state government and has contributed to protecting marine ecosystems through innovative applications of law and policy. She has successfully partnered with interest groups, industry members, private non-profits and other stakeholders to form cohesive management strategies by communicating regularly with a wide variety of people with often conflicting perspectives. She also maintains a consulting practice through her firm, Full Sail Consulting based in Kingston, Mass. McGee served as the Director of Coastal Zone Management for the Commonwealth of Massachusetts. In addition, McGee was the Director of Programs for the World Ocean Council, Director of Ocean and



Coastal Solutions at Battelle Memorial Institute and held state and federal positions with NOAA, the New England Fishery Management Council and the Mass. Department of Fish and Game. McGee is a graduate of the University of Colorado at Boulder and Duke University's Nicholas School of the Environment. She conducted her graduate research on bluefin tuna at the New England Aquarium.

**Mr. Roly Morris, Vice President, Cuna Del Mar LLC**

Roly is an Executive and Leadership Development Coach based in Vancouver, British Columbia. He offers coaching, consulting, family enterprise advising and Board of Director services to CEOs, business owners and executives of local, national and multi-national organizations. Roly is also a Chair for MacKay CEO Forums. With over 30 years of multi-national business management, people leadership and development experience, Roly now draws on that to act as a trusted advisor to his clients, supporting them in effectively navigating change, while achieving business and personal success. As a Certified Professional Co-Active Coach through the Co-Active Training Institute, Roly's expertise is further enhanced by certification in The Leadership Circle Profile, a globally recognized leadership assessment framework. Roly's array of experience across multiple businesses and industries, as well as diverse geographies and countries, includes roles as Regional Vice President; Zone Vice President; President; CEO and Board Member. These roles placed him at global organizations including Starbucks Coffee Company; PetSmart and Timbercreek Communities. In addition to maintaining his own practice, Roly is an Executive Coach with Lee Hecht Harrison Knightsbridge, one of the top two leadership development firms globally. He is an Associate with Paracomm International, a team of transformational leaders with substantive experience working as consultants, coaches and strategic advisors to CEOs. Roly currently serves on the Board of Directors of InnovaSea; Open Blue; Earth Ocean Farms, Sol Azul, and The Center for Aquaculture Technologies. He holds the ICD.D designation from the Institute of Corporate Directors, as well as the FEA designation from the Family Enterprise Xchange. Roly enjoys a reputation as an individual who delivers results, inspiring and developing CEOs and executives to create and nurture strong, sustainable organizational cultures and lives. His greatest joy, passion and commitment is in the support and development of those around him.

**Ms. Alissa Peterson, Co-Founder and Executive Director, SeaAhead**

Alissa Peterson is a Co-Founder and the Executive Director of SeaAhead. SeaAhead, headquartered in Boston, MA, has the mission of fostering ocean-related innovation as it becomes the next global tech sector. The SeaAhead team seeks to take advantage of this location to encourage the commercialization of solutions to ocean sustainability and to connect the Northeast region's coastal communities into the vibrant tech & venture ecosystems in Boston with a two-way flow of ideas and expertise. Prior to founding SeaAhead, Alissa was most recently the VP of Product Marketing & Planning at NanoSteel, an advanced materials company creating scalable solutions for vehicle light weighting and 3D printing. Alissa was Director of Product Marketing & Business Development at Primus Power, a venture-backed grid-scale energy storage technology company. Through her work at NanoSteel and Primus, she has managed business development, strategic planning, marketing, government relations and M&A. Prior to her startup experience, Alissa was a consultant in McKinsey's Global Sustainability & Resource Productivity Practice in the US and Europe. She has served as a mentor through the Cleantech Open, MIT Clean Energy Prize and Year Up. Alissa holds a Master's in Mechanical Engineering from MIT and a BS in Civil Engineering from Duke University.

**Mr. Nicolaus Radford, Co-Founder and CTO, Houston Mechatronics, Inc.**



Mr. Radford is co-founder, and CTO of Houston Mechatronics, Inc (HMI), a rapidly growing robotics and mechatronics startup, specializing in robotics, intelligent automation, and electric-based platforms with a strong focus in the subsea domain. Prior to HMI, he spent 14 years at NASA's Johnson Space Center in the Dexterous Robotics Laboratory. At the conclusion of his service to the government, he was the Principal Investigator (PI) for the Valkyrie robot, a bipedal humanoid developed for both disaster response as outlined in the DARPA Robotics Challenge (DRC) and NASA's Mars exploration vision. Former to that, he served as the Chief Engineer for Robonaut 2 (R2), a spaceflight humanoid robot, initially developed in partnership with General Motors as a prototype for advanced manufacturing processes requiring human level dexterity and coordination. He then led the efforts to redesign and qualify R2 for the International Space Station (ISS). He was also the PI for NASA in DARPA's advanced electric machine research for robotics using Variable Flux Memory Motors (VFMMs). He also led NASA's efforts in exoskeleton research for ISS crew exercise and mobility assistance and initially served as Co-PI for NASA on DARPA's Warrior Web program, which focused on wearable robotics for military applications. He has extensive experience leading multidisciplinary teams in challenging development timeline environments. During Mr. Radford's tenure at NASA, he was the recipient of numerous patents, design awards, and commendations for his expertise and leadership that ultimately culminated in him receiving NASA's Outstanding Leadership Medal. He has been published several times on a multitude of topics relating to spaceflight robotics and is Part Editor for Springer's Humanoid Robotics Handbook.

**Dr. Drew Remsen, Technical Lead, XPRIZE Foundation**

Drew Remsen, Ph.D. is a technical lead for the XPRIZE Foundation in Los Angeles CA, a non-profit that uses incentive prizes to crowdsource solutions to the world's grand challenges. He was technical manager for the Shell Ocean Discovery XPRIZE, a \$7 Million global competition which challenged teams to advance deep-sea technologies for autonomous, fast, high-resolution ocean exploration that ended in May 2019. Before working at XPRIZE he was a longtime research scientist at the University of South Florida College of Marine Science where he developed underwater imaging systems and worked as a NOAA technical consultant during the Deepwater Horizon oil spill. He has extensive experience working with in-situ oceanographic sensors deployed on a variety of underwater vehicles and platforms including AUVs, ROVS, gliders and profilers.

**Mr. John Reine, Senior Engineer, Woods Hole Oceanographic Institution**

John Reine started a consumer electronics company with his college roommate designing, prototyping, manufacturing and selling one of the first MP3 players, AudioReQuest. Twenty-two years later ReQuest Inc. is still in business. John left ReQuest after twelve years to make video games and worked on the Guitar Hero and Skylanders franchises. While biking across the USA camping in a tent he worked for a startup writing the software to control directional hearing aids built into glasses. After moving to Martha's Vineyard three years ago John started working at Woods Hole Oceanographic and is now the CGSN Electrical Engineering Lead responsible for refurbishing and improving the electronics and cabling of OOI buoys. In his spare time, he is working on an open source sea glider design that will reduce the cost of ocean research.

**Mr. Chris Scholin, President and CEO, Monterey Bay Aquarium Research Institute**

Chris Scholin is a native of St. Louis, Missouri. He received a B.A. in Biology from the University of California, Santa Barbara, in 1984, and a M.A. in Molecular Biology and Immunology from Duke University in 1986. After working for a short time as a Research Assistant Professor at the University of



South Carolina at Columbia, Chris entered the Massachusetts Institute of Technology – Woods Hole Oceanographic Institution (MIT/WHOI) Joint Program in Biological Oceanography with the objective of combining molecular biology and ecology in an ocean setting. After earning his Ph.D. from MIT/WHOI in 1992, he came to the Monterey Bay Aquarium Research Institute as a Postdoctoral Fellow. In 1994 he joined the MBARI staff as a Scientist with a focus on development and application of molecular probes for detection of a variety of waterborne microbes, in particular toxic and harmful algae. Working collaboratively with a team of engineers, his group pioneered development of the Environmental Sample Processor (ESP), an instrument that collects water samples autonomously, concentrates microorganisms and automates application of molecular probes to detect particular species and substances they produce. Chris served as Chair of MBARI's Research Division from mid-2005 to early 2009 before appointment as President and CEO in late 2009. He currently serves on Board of Trustees of the Monterey Bay Aquarium Foundation and Consortium for Ocean Leadership. He maintains an active research program that focuses on development and application of instruments for collecting and analyzing microorganisms remotely in coastal, open ocean, and deep-sea environments.

**Mr. Mark Schrope, Director, Schmidt Marine Technology Partners**

Mark Schrope is director of Schmidt Marine Technology Partners, a program of the Schmidt Family Foundation. He began his career studying deep-ocean carbon cycling at The College of William and Mary's Virginia Institute of Marine Science, after receiving a B.S. in biology from Wake Forest University, and an M.S. in chemical oceanography from Florida State University. In 1999, after completing the Science Communications program at UC Santa Cruz, he moved to ocean-focused journalism and communications, and founded Open Water Media, Inc. Mark's articles and photos have appeared in Nature, Scientific American, Popular Science, The New York Times, and numerous other publications, and he consulted for clients such as The Scripps Research Institute, Harbor Branch Oceanographic Institution, and Yale University. Wearing various hats, Mark has worked on over a dozen research vessels on expeditions around the world. He is a third-generation Florida Man, and a fellow of the Explorers Club.

**Mr. Mark Vasu, Executive Vice President, Greentown Labs**

As Executive Vice President, Mark Vasu leads and supports revenue-generating activities that sustain and grow Greentown Labs. This includes managing corporate sponsors, partnerships and overseeing the member pipeline. He leads the effort to build the brand, visibility and partnerships. He also supports a national network of cleantech incubators, helping to build the ecosystem given Greentown Labs' position as the nation's largest cleantech incubator. Prior to Greentown Labs, Mark was the founder of perCent Inc., a software company focused on reducing personal energy use and spending. He also founded and led CMV Marketing, a marketing and sustainable strategy-consulting firm for social-purpose companies and high-performing social enterprises. He served in marketing and business development leadership roles for three high growth social enterprises: City Year, ChildrenFirst (acquired by Bright Horizons), and Jumpstart. Mark was on the founding steering committee, co-chair, and ran the Boston Cleanweb Hackathon (2012, 2013, 2014). He has served on the Board of uAspire, a Boston based education non-profit from 2007 - 2015. Mark holds a BA Economics from Duke University.

**Mr. Peter Warden, Staff Research Engineer Google AI, Google**

Pete Warden is technical lead in the TensorFlow mobile and embedded team at Google, and was previously CTO of Jetpac (acquired in 2014).



**Dr. Dana Yoerger, Senior Scientist, Woods Hole Oceanographic Institution**

Dana Yoerger is a Senior Scientist at the Woods Hole Oceanographic Institution and a researcher in robotics and unmanned vehicles. He supervises the research and academic program of graduate students studying oceanographic engineering through the MIT/WHOI Joint Program in the areas of control, robotics, and design. Dr. Yoerger has been a key contributor to the remotely-operated vehicle Jason; to the Autonomous Benthic Explorer known as ABE; most recently, to the autonomous underwater vehicle, Sentry; and the hybrid remotely operated vehicle, Nereus which reached the bottom of the Mariana Trench in 2009. Dr. Yoerger has gone to sea on over 80 oceanographic expeditions exploring the Mid-Ocean Ridge, mapping underwater seamounts and volcanoes, surveying ancient and modern shipwrecks, studying the environmental effects of the Deepwater Horizon oil spill, and the recent effort that located the Voyage Data Recorder from the merchant vessel El Faro. His current research focuses on robots for exploring the midwater regions of the world's ocean. He heads a team developing a new underwater robot called Mesobot designed to track midwater targets such as zooplankton that play an important role in the movement of carbon through the world's oceans. He was the 2009 recipient of the Lockheed Award for Ocean Science and Engineering and serves on the Research Board for BP's Gulf of Mexico Research Initiative. He recently served as interim Director of WHOI's Center for Marine Robotics and currently holds the Walter A. and Hope Noyes Smith Chair for Excellence in Oceanography.



