

15th annual

mate

international

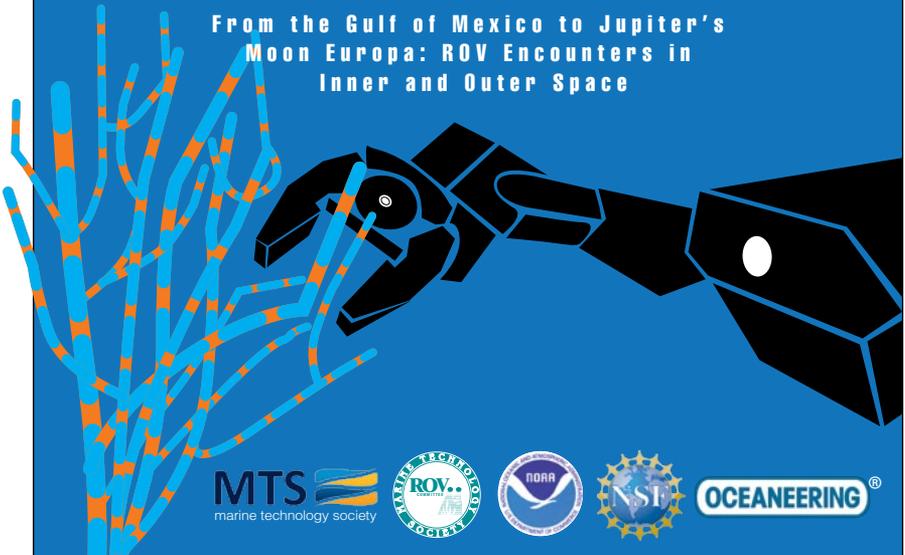
rov

competition



2016

From the Gulf of Mexico to Jupiter's
Moon Europa: ROV Encounters in
Inner and Outer Space



June 23-25, 2016 Δ NASA's Neutral Buoyancy Lab Δ Houston, Texas



The MATE Competition at a Glance

The MATE Center uses underwater robots (also known as remotely operated vehicles or ROVs) to teach science, technology, engineering, and math (STEM) and prepare students for technical careers. Working in partnership with the Marine Technology Society's ROV Committee, MATE created the competition as a way to:

- ▼ engage students in STEM and expose them to related careers
- ▼ encourage students to develop technical, teamwork, creative thinking, and problem solving skills
- ▼ provide funds, materials, and technical expertise to support student learning
- ▼ supply industry with skilled individuals who can fill workforce needs

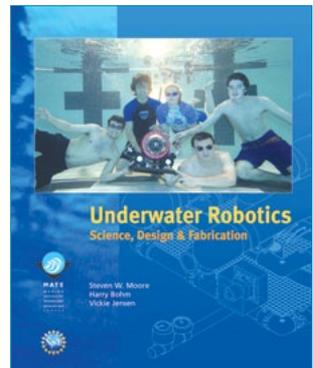
The MATE competition challenges K-12, community college, and university students from all over the world to tackle missions based on scenarios from the workplace. The competition's class structure of beginner, intermediate, advanced-intermediate and advanced complements the educational pipeline by providing students with the opportunity to build upon their skills as they engineer increasingly more complex ROVs for increasingly more complex mission tasks.

The MATE competition requires students to think of themselves as entrepreneurs and transform their teams into companies that manufacture, market, and sell "products." In addition to engineering their ROVs, the students prepare technical reports, poster displays, and presentations that are delivered to working professionals who serve as competition judges.

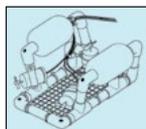
The MATE competition encourages students to work together, network, and learn from technical professionals and each other. MATE's philosophy is that collaborative learning experiences best simulate the real world and will serve students – and their future employers – well in the workplace.

Other MATE underwater robotics educational products include:

- ▼ *Underwater Robotics: Science, Design and Fabrication* [ISBN 978-0-9841737]
- ▼ Knowledge and Skill Guidelines for prospective ROV professionals
- ▼ Curriculum and videos
- ▼ Workshops for teachers and students
- ▼ Internships for college students
- ▼ All levels of DIY Kits and free open source plans
- ▼ Microcontrollers for thrusters and sensors
- ▼ And much more!



14 Years of Underwater Robotics: The History of the MATE ROV Competition



2002
Rime of the Ancient Buccaneer
NASA Kennedy Space Center
and Brevard Community College
Cape Canaveral, Florida
May 20-22, 2002



2009
ROVs: The Next Generation of Submarine Rescue Vehicles
Massachusetts Maritime Academy
Buzzards Bay, Massachusetts
June 24-26, 2009



2003
Lost on the Titanic: Rusticles or Bust
Massachusetts Institute of Technology
Cambridge, Massachusetts
June 19-21, 2003



2010
ROVs in Treacherous Terrain: Science Erupts on Loihi, Hawaii's Undersea Volcano
University of Hawaii-Hilo
Hawaii's Big Island
June 24-26, 2010



2004
NOAA's National Marine Sanctuary Program: The Adventure of Mystery Reef
University of California Santa Barbara
Santa Barbara, California
June 25-27, 2004



2011
ROVs and the Offshore Oil & Gas Industry: Highlighting the Challenges that ROVs Faced During the Gulf of Mexico Oil Spill
Neutral Buoyancy Laboratory
@ NASA Johnson Space Center
Houston, Texas
June 16-18, 2011



2005
From the Depths of the Oceans to the Far Reaches of Outer Space
Neutral Buoyancy Laboratory
@ NASA Johnson Space Center
Houston, Texas
June 17-19, 2005



2012
Diving into History: The Role of ROVs in Exploring WWII Shipwrecks
YMCA Aquatic & Family Center
Orlando, Florida
June 21-23, 2012



2006
Ocean Observing Systems: Tools for Tomorrow's Science & Technology Workforce
Neutral Buoyancy Laboratory
@ NASA Johnson Space Center
Houston, Texas
June 23-25, 2006



2013
Ocean Observing Systems: Launching a New Era of Ocean Science & Discovery
Weyerhaeuser King County
Aquatic Center
Federal Way, Washington
June 20-22, 2013



2007
Celebrating the International Polar Year: Science & Technology Under the Ice
Memorial University and the
Institute for Ocean Technology
St. John's, Newfoundland, Canada
June 22-24, 2007



2014
Exploring the Great Lakes: Shipwrecks, Sinkholes, and Conservation in the Thunder Bay National Marine Sanctuary
Alpena, Michigan
June 26-28, 2014



2008
Diving to the Deep: Uncovering the Mysteries of Mid-Ocean Ridges
Scripps Institution of Oceanography—University of California, San Diego
San Diego, California
June 26-28, 2008



2015
ROVs in Extreme Environments: Science and Industry in the Arctic
Memorial University and the Ocean, Coastal, and River Engineering faculty
St. John's, Newfoundland, Canada
June 25-27, 2015

Return on Investments

Sponsoring the MATE ROV competition helps to ensure a future, skilled STEM workforce and that all students have access to this unique learning opportunity.

Sponsors provide:

- ▼ **Financial and technical support.** Funds cover student travel stipends and meals, while contributions of materials, equipment, mentoring time, and technical expertise support ROV building, promote skill development, and expose students to careers.
- ▼ **Recognition.** Award trophies, plaques, certificates of participation, event t-shirts and patches, gift certificates, and donations of equipment such as cameras, thrusters, and other hardware are ways to highlight both the winning teams and the sponsoring organizations.
- ▼ **Networking opportunities.** Funds cover the international competition's kick-off reception and closing awards banquet, events that provide opportunities to build peer and professional networks. Students interact, share ideas, and learn from each other as well as the working professionals who attend the events.

Sponsors also profit by:

- ▼ Increasing visibility through the MATE web site and conference presentations.
- ▼ Displaying logos on the competition materials, including banners at the events and advertisements in industry journals.
- ▼ Posting job announcements on the MATE Center's online job board at no cost.
- ▼ Using the competition's Ocean Career Expo to recruit students for technical programs or job openings.
- ▼ Gaining access to a larger pool of talented students through MATE's partner colleges.

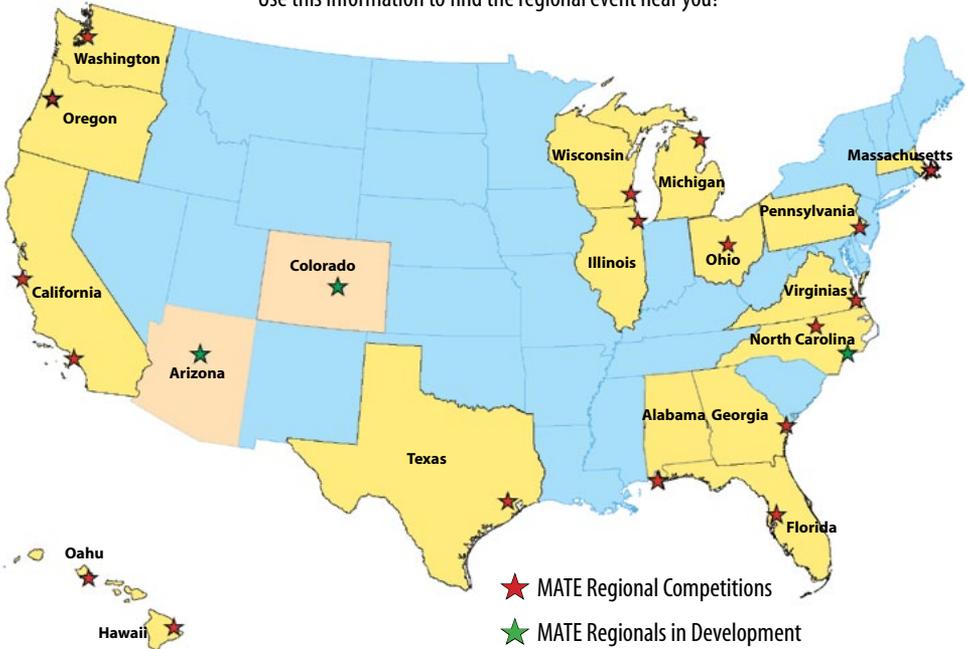
Contributions are tax deductible. Contact the MATE Center for more information.



MATE Regional ROV Competition Network

The MATE Competition Network began in 2001 and currently consists of 26 regional events that take place across the U.S. and around the world.

Use this information to find the regional event near you!



MATE International Regional Competitions:

Bermuda, Canada (Newfoundland & Labrador and Nova Scotia), Egypt, Hong Kong, Scotland, Russia, Turkey



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Here's what people are saying about the MATE competition:

Students

- ▼ *The memories I have made are countless, and the technical experience gained priceless. Any STEM-related major or field should seize the opportunity to be a part of an ROV team.*
- ▼ *I learned how to collaborate with a team, think outside the box, and cooperate with group decisions [...]. This has been a great, and memorable experience. I'll definitely be back next year!*

Parents

- ▼ *My son has grown exponentially in maturity. He's not afraid to fail. He looks for innovative ways to solve the problem. He's part of a team and he LOVES this program.*
- ▼ *This is a great program that takes classroom learning to another level. Solving real world problems in a team setting prepares students for adult work situations. Keep projects like this alive!*

Faculty/mentors

- ▼ *This is the way STEM should happen and how you bring students into the field - with application and engagement. MATE has their priorities right!*
- ▼ *I receive a lot of feedback from parents that the MATE program at our school was the highlight of their student's high school experience and was key to solidifying their plans for the future.*

Working Professionals

- ▼ *The caliber of the students/future of the industry is quite remarkable, and it's a pleasure to be part of their journey.*
- ▼ *I saw a growth [...] in team spirit, in learned skills, in having fun doing tasks that will definitely color their professional lives. This is great!*



M A R I N E
A D V A N C E D
T E C H N O L O G Y
E D U C A T I O N
C E N T E R

**For more information,
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www.youtube.com/matecenter



<http://twitter.com/matecenter>



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www.flickr.com/photos/matecenter

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and Tom Donovan

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