MATE INTERNATIONAL ROV COMPETITION

ROVs in Extreme Environments: Science and Industry in the Arctic

St. John’s, Newfoundland and Labrador, Canada
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, beginner-intermediate, 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:

- 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!
Return on Investments

Sponsoring the MATE ROV competition helps to ensure a future, skilled STEM workforce and ensures 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.
The MATE Competition Network began in 2001 and currently consists of 24 regional events that take place across the U.S. and around the world. Use this information to find the regional event near you!
Here’s what people are saying about the MATE competition:

Students

- This was one of the best learning experiences I’ve had. Not only did I learn how to manage an ROV, I became more aware of openings in science and engineering.

- I have learned so much about robotics and the value of teamwork and friendship. It is an unforgettable experience that I will treasure always.

Parents

- [Our son] is learning to be resourceful and creative. He also has learned the importance of teamwork and how the ability to work with others is an essential part of a business success.

- I have seen [our son’s] excitement in all parts of engineering just soar, plus his creativity and understanding of how engineering affects our lives.

Teachers

- I am extremely pleased with the organization of this program, the various elements that are required (poster, presentation, report), and the incorporation of real scientific problems to complement an engineering design competition.

- This has definitely been an enriching educational experience for my students. They are excited and looking forward to the ROV competition next year and are already discussing designs.

Working Professionals

- A great experience and opportunity to work with students and future employees.

- Of all the robotics contests, this one gives the most bang for the buck!

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