



MATE
MARINE
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CENTER



2004 MATE Center/MTS ROV Committee ROV Competition for High School & College Students

www.marinetech.org/rov_competition/index.php

University of California Santa Barbara (UCSB)
June 25 – 27, 2004



General Information

OVERVIEW

The Marine Advanced Technology Education (MATE) Center and the Marine Technology Society's (MTS) ROV Committee are partnering with the National Marine Sanctuary Program to organize their 3rd annual ROV design and building competition for high school and college students. Employers – industry, businesses, government agencies, and research organizations – and working professionals are becoming involved in the event by donating funds, building supplies, equipment, and facilities and volunteering their time and technical expertise as mentors, technical assistants, and judges to support the competing teams.

Goals:

- To increase the awareness and visibility of marine technical fields, educational and career opportunities, and potential employers.
- To help students develop the skills necessary for careers in technical fields. These include technical and non-technical skills, such as communication, presentation, and job search skills, and personal quality traits, such as the ability to work as a team, problem-solve, and think creatively.
- To connect students and educators with employers and working professionals. These connections result in collaborations where professionals mentor the students, complementing what they are learning in the classroom, and employers have the opportunity to evaluate them as potential employees.
- To promote an understanding and appreciation of our national marine sanctuaries.

Eligibility:

- Open to high school, college, and university students. Home-schooled students of comparable grade levels are also welcome.
- Students can design and build the vehicles as an entire class project or school group activity. The group must be affiliated with a school or school network (e.g., home-schooling network). Students can divide themselves into groups that focus on various aspects of vehicle design and operation.
- Teams must have at least three students with at least one faculty member or advisor affiliated with the school involved in the process. One student should be designated as the team spokesperson.
- Individuals from industry, businesses, research organizations, and/or government can act as mentors during the design and building process. These individuals can provide

students and their instructors with guidance and technical expertise, but cannot be actively involved* in construction and operation.

**"Active involvement" can be evaluated on a case-by-case basis.

Regional contests:

The MATE Center is supporting and helping to organize regional competitions in the **New England** area, **Texas**, **Southern California**, and **Northern California** to serve as feeders into the national **Ranger** class. Schools from the New England area (Massachusetts, Rhode Island, Connecticut, and Maine), Houston, Texas (Houston and surrounding towns, including Alvin, Galveston, and College Station), southern California (San Diego and Los Angeles), and northern California (Monterey, San Francisco and surrounding areas) interested in competing in the **Ranger** class are asked to take part in the regional event in their area before moving on to the national competition. Depending on the level of interest in the regional contests and other factors, such as the total number of teams nationwide that are interested in competing in the **Ranger** class, the top one to two teams from each regional contest will advance to the national competition.

Note: The MATE Center's goal is to provide as many students and instructors as possible with opportunities to participate in ROV projects that lead to exciting and rewarding competitions, learning key skills and connecting with technical professionals and potential employers along the way. It sees regional competitions as a way to accomplish this goal.

For information about the **Ranger** regional contest near you, contact:

New England

Brennan Phillips

c/o Department of Ocean Engineering

217 Sheets Building

University of Rhode Island – Narragansett Bay Campus

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Texas

Ike Coffman, Electronic Department Chair

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Southern California

Scott Mau, Education Specialist
Birch Aquarium at Scripps Institution of Oceanography
La Jolla, California
(858) 822-4405
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Northern California

Frank Barrows, Submersible Technology Instructor, Monterey Peninsula College
Jill Zande, ROV Competition Coordinator, MATE Center
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Note: The rationale behind regional contests that feed into the national event is to allow as many students as possible to participate in ROV design and building projects, learning key skills and connecting with employers and mentors, while keeping the number of teams that compete in the national at a manageable level – both financially and logistically. The MATE Center’s intent is NOT to dissuade or discourage students from becoming involved in ROV projects that lead to exciting and rewarding competitions; on the contrary, the Center’s goal is to encourage and enable as many students as possible to take part, and it sees regional events as a way to accomplish this goal.

COMPETITION CHALLENGES and DESIGN & BUILDING SPECIFICATIONS

There are two classes in which teams can compete – *Explorer* and *Ranger*. Teams can register to compete in **one** (but not both) competition class. Teams in the New England, Houston, Texas, Southern California, and Northern California areas interesting in competing in the *Ranger* class will participate in the regional event in their area before moving on to the national competition.

Please see the appropriate (*Explorer* or *Ranger*) **Competition Challenges and Design & Building Specifications** document for detailed information or visit the competition’s web site at www.marinetechnology.org/rov_competition/specs.html.

KEY MILESTONES AND SCHEDULE OF EVENTS

Key milestones:*

- October 6th – mission tasks & design specs posted
- December 1st – registration deadline
- December/January – building funds distributed
- Mid-late May – technical reports due
- June – competition (date and location TBD)
 - Falls over a weekend
 - Engineering & poster presentations due

*Note: These are milestones that apply to the national only. Regional contests may have their own sets of key milestones and will be held prior to the national event.

Schedule of events:

*****Example*****

- Wednesday – teams arrive & check-in
 - Vehicles shipped or hand-carried to competition venue
- Thursday – set-up & pool practice day
 - Welcome & introductions in morning
 - Set-up team workstations & posters, competition arena, and repair station
 - Practice time available **ALL DAY**
 - Scheduled runs into competition arena
 - Optional workshops, focused talks
 - Evening social mixer/reception (w/ judges)
- Friday – presentations & social activities
 - Engineering presentations (aka “Design & Innovation” interviews)
 - Optional social/free time, possible tours of local subsea company facility, aquarium, or other marine-related point of interest
 - Underwater mission challenges begin
 - Teams have scheduled time slots
 - ROVs not permitted in water until after competition run
 - Optional social activities/free time when not competing
 - Evening dinner
- Saturday – competition day **ALL DAY**
 - Underwater mission challenges continue
 - Teams have scheduled time slots
 - ROVs not permitted in water until after competition run
 - Optional social activities/free time when not competing
 - Evening awards ceremony
- Sunday – teams depart