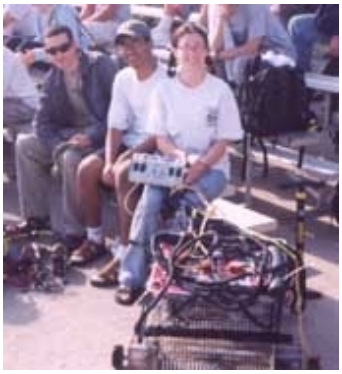
Newsletter from the MIT Course 13 Student Engineering Association

Summer 2002 Volume 1, Issue 3

Making Waves

ROV Victory! Cambridge High School wins 2nd Place in National Competition



The Cambridge Rindge and Latin School's Third Nerd Herd during pool trials.

Out of a total of 22 teams from across the country and from Canada, including three third level institutions, Cambridge Rindge and Latin School's ROV team came in a solid 2nd place in the first ever National Underwater Remotely Operated Vehicle Competition sponsored by the Marine Advanced Technology in Education center (MATE) in Monterey, California and the Marine Technology Society ROV Committee. CRLS was the only Massachusetts team to compete at the competition held at the Kennedy Space Center in Cape Canaveral, Florida from May 18th to May 23rd. The event was held in conjunction with the Link Symposium, a conference to promote collaboration between ocean and space scientists and engineers. First place went to Cape Fear Community College with a $5,000 machine and a total of $18,000

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Inside this issue…

Spotlight on…

Why be a dry engineer? 13SEAS SCUBA dives.

Do you ever wonder how a fish sees the world, or what it feels like to be a submarine? Seven ocean engineers gained an underwater perspective last month during SCUBA certification training and dives. Kai McDonald '03, Jessica Donnelly '02, Katie Wasserman '04, Addie Yandell '05, and grad students Anna Michel, Oyvind Smogeli, Dave Beal, and Victor Polidoro, completed pool training at United Divers in Providence, Rhode Island in April.

SCUBA is a natural pastime for these ocean engineers, who already enjoy tinkering with underwater gadgets in the Tow Tank, the Water Tunnel, and the OE Teaching Lab. After passing an exam of essential diving knowledge, they strapped on their gear (air tanks, buoyancy controls, masks, snorkels, boots, and fins) and dove into the pool to practice breathing through a regulator, clearing water out of the mask, controlling buoyancy, and monitoring pressure in the air tank. At the end of the weekend, they were rewarded for mastering the basic SCUBA skills with a game of underwater Frisbee, and a first-person insight into engineering fundamentals like pressure and buoyancy. After all, who wants to be a dry engineer?

The students completed their requisite certification dives over Memorial Day weekend in Gloucester, Massachusetts.

Bobbing along on the bottom of the beautiful briny pool.

All in the Family

All in the Family is an ongoing series featuring families with ties to MIT Ocean Engineering.


Katie Wasserman runs like the wind for the MIT Track Team.

Katie Wasserman '04 is an OE junior, and her dad Bob Wasserman OE '80 is Vice President and Director of Research at Sterling Financial Investment Group, and was the Wall Street Journal's All-Star Analyst for Health Care in 1999.

Why MIT?
Katie: I came to visit and I instantly just knew I had to come here. I'd heard so many stories about famous (and not-so-famous) hacks and pranks.
Bob: I wanted to study Math or Science after high school and MIT was the best! Also, coming from Kentucky I thought Boston was really cool.

Why Ocean Engineering?
Bob: My freshman year I was on the sailing team and a lot of the sailors were in the OE department - and what did I know? No, really, it seemed like it was the engineering department at MIT with the most exciting future applications - and it had some good trips too.
Katie: Why OE? Here's why - this was a sentence on a 13.00 [Intro to Ocean Science and Technology] problem set: "A fisheries expert has told you that the swim bladder for a mature adult swordfish has the size and shape of an average cucumber." This wasn't just some random information to put the problem in context or make the problem more interesting. This was crucial information that I needed to solve the problem. I realized right then that I am in a major where we care about weird things like the cucumber-sized bladders of swordfish. And not only do we care about weird things, we use them to make state-of-the-art technology, like sonar arrays.

What is your favorite OE memory?
Katie: Last summer I worked in the OE Teaching Lab. I was making a prototype ROV, and I had some wild ideas about the hull, like making it out of watermelon. So Johanna and I went to Star and came back to the lab with our arms full of watermelons.
Bob: Hmm. That was a long time ago - I liked the UROP and research projects going on then - after freshman year I did a summer internship at the Maine Maritime Academy - and senior year I worked on ocean minerals project.

Do you have a favorite class and/or professor?
Bob: I had good memories of all my classes, even sophomore year - my thermodynamics class was taught by Peter Huber (although I think he was technically in the Mech E department) and I've enjoyed following his

Continued on page 4.

Rollin' on the River


New England SNAME Section President Denny Mahoney and NE Student Paper Award Winners, Anna Michel (MIT), Melissa Harness (MIT), and Mark Ward (UNH). Not pictured: Jae Auh (MIT). Photo by Garrit van Dissel

The New England Chapter of SNAME met for their final yearly meeting on June 19th at MIT.

Justin Manley '96, began the evening with a presentation about the Center for Ocean Science Education Excellence (COSEE) which has been proposed by the MIT Sea Grant Program in collaboration with the Museum of Science and SNAME. COSEE's goal is to educate and inspire a new generation of ocean scientists and explorers through public outreach. After Justin was forced to break open the cash box with a screwdriver, students Anna Michel and Melissa Harness received their student paper awards.

The night continued with a dinner cruise through the locks of the Charles River out into the Boston Harbor. The event allowed the OE professors and students in attendance to meet naval architects and ocean engineers from the New England area. A few lucky students even got to steer the boat.

Aye, Aye, Captain!

Congratulations, 2001-2002 graduates!

Bachelor of Science, Ocean Engineering
Jessica Donnelly, Melissa Harness, Nathaniel Houle, Karl-Magnus McLetchie, and Deanelle Symonds

Master of Science, Ocean Engineering
Gilhad Bar-Yehoshua, Sheri Cheng, Handsome Joshua Davis, Jay Dryer, Ian Ingram, and Anna Michel.

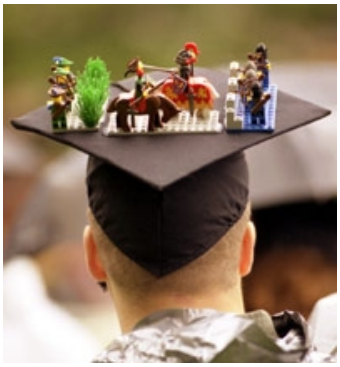
Master of Science, Ocean Systems Management
Matthew Barlin, Athanasios Denisis, Konstantinos Galanis, Alexandros Gorgias, Antonios Kandylidis, Alexander Kleiman, and Georgios Kokkalas.

Master of Science, Naval Architecture and Marine Engineering
Rodrigo Andrade, Robert Bebermeyer, Whitney Cornforth, William Duncan, David Goggins, Jeffrey Gregor, Sean Kearns, Zachary Malinoski, David Price, Shelly Price, Peter Sabin, Muriel Thomas, Todd Whalen, and Ernest Woodward.

Master of Science, MIT/WHOI Joint Program
Jody Katrein.

Doctor of Philosophy, Ocean Engineering
Karl Burr, Randall Fairman, and Michael Griffin.

Doctor of Philosophy, MIT/WHOI Joint Program
Kyle Becker and Davis (Ben) Reeder



Above: Soggy parents and friends at commencement. Right: OE's Nate Houle and his medieval Lego mortarboard. Photos by Donna Coveney and Laura Wulf.

As we bid farewell to our graduates, we look forward to welcoming incoming freshmen into the wonderful world of ocean engineering. The Discover Ocean Engineering Program is entering its 5th year, and you are invited to be a part of their first experiences at MIT.

Through the Discover Ocean Engineering (DOE) program, freshmen will experience ocean engineering through hands-on activities, as well as by meeting and talking to the faculty, students, and researchers who are the leaders in this fascinating and dynamic field. They will also get a chance to explore and learn about MIT itself. Beginning the student experience at MIT can be an awesome challenge. DOE is a special freshman pre-orientation program designed to help create a smooth and enjoyable transition to the exciting culture of MIT.

Dr. Tom Consi, Director of DOE, would like faculty, students, alumni, and staff to attend the events and interact with our DOE students. Please email him (consi@mit.edu) if you can attend one or more of the events. The activities with which he would like participants are marked with an asterisk.

Tuesday, August 20
- Sailing and cookout on the Charles*

Wednesday, August 21
- Students work on Sea Perch vehicles
- Lunch with Faculty and Students*
- Dinner cruise on the Charles *

Thursday, August 22
- Students work on Sea Perch Vehicles
- Lunch with Faculty and Students*
- Students test vehicles in the Alumni Pool
- O.E. Lab Tours*

Friday, August 23
- Trip to New England Aquarium
- Lunch at Quincy Market
- Harbor boat trip to run Sea Perches in the real world *
- Final DOE Party*

Tim rollicks with Dave Beal, Oyvind Smogeli, and Vic Polidoro at Aprilfest. Ole!

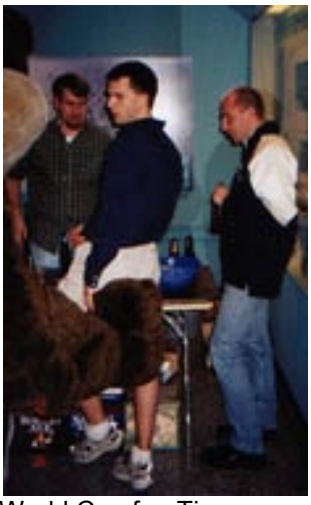
Aprilfest

On Friday April 9th, students, faculty, and staff gathered in the MIT Hart Nautical Gallery for the 1st Annual Aprilfest celebration. MIT's Tim the Beaver made a surprise appearance.

Of all the animals of the world, the beaver is noted for his engineering and mechanical skill and habits of industry. His habits are nocturnal, he does his best work in the dark,

just like the course 13 students.

Everyone took time to vote for the Spirirt of Ocean Engineering awards, which were presented at the end of the event. While students devoured the Mexican food, the MIT Beaver entertained by posing for photos and greeting unsuspecting students. Many thanks to Kurt Hasselbach, curator of the gallery, and to Nate for his great performance.



World Cup fan Tim mistakes Justin Harper for a soccer ball as John Hootman and Claudio Carillo look on.

Leaders in Technology and Archaeology

The 2nd Conference on Technology, Archaeology, and the Deep Sea was held at MIT from April 26-28th.

Recent advances in deep submergence vehicles have made it possible to locate, document, survey, sample, and excavate archaeological sites in waters ranging from 100 – 6,000 meters in depth. The conference focused on the development of archaeological methods and theoretical frameworks for remote and robotic operations in deepwater. Archaeologists and engineers from around the world discussed these questions, which require a unique fusion of archaeology, engineering, and oceanography.

Presenters included Jim Newman OE '81, Justin Manley OE '96, Katy Croff OE '00, Professor Nick Patrikalakis, Professor David Mindell, Dr. Hanu Singh PhD '95, Brian Bingham, and Brendan Foley.

For more on the conference and the MIT Deep Water Archaeology Research Group (DeepArch), see http://web.mit.edu/sts/deeparch

Congratulations to Karl McLetchie and Johanna Mathieu, winners of the MTS 2002/2003 ROV Committee Scholarships

All in the Family (cont'd.)

career as a columnist since.

Katie: Tom Consi's "Build a PVC ROV" seminar was awesome. We made ROVs, put video cameras on them, and dropped them into the harbor to film fish and crabs.

What is your current job?

Katie: I'm a summer intern at NAVSEA Naval Sea Systems Command Headquarters in Washington, DC. I'm on team of interns from Virginia Tech and University of Michigan, working on the design of a new ship for the US Navy.

Bob: Currently I'm a securities analyst with Sterling Financial specializing in Health Care stocks in Florida. I recommend public company stocks for investors and I have received some good publicity in the past several years, such as the Wall Street Journal and Business Week. After graduating MIT I earned an MBA and moved to Minnesota and then Arizona so I didn't have much of a chance to work in OE. When I finally got to Florida another analyst (who was already President of the firm) was already following the Cruise Industry (Love Boats but boats just the same) so I had to pick up the health care industry. I do enjoy floating toy boats in the bathtub for my kids [Alanna, 7, Jacob, 10, and Ben, 17], though.

Spirit of Ocean Engineering Awards

13SEAs established the First Annual Spirit of Ocean Engineering Award this year. This award is meant to recognize an undergraduate student, graduate student, and faculty or teaching staff member who has best embodied the spirit of ocean engineering during the 2001/2001 academic year.

The Undergraduate Award was given to Jessica Donnelly '02. "Donnelly successfully planned and orchestrated the 5th Ocean Technology Job Fair. Under Jessica's leadership and the guidance of MOTN's executive director, Maggie Merrill, a committee recruited companies to attend, prepared for the event, and ensured that that the job fair went off smoothly."

John Hootman was the recipient of the Graduate Spirit of OE Award. "Hootman has become a member of the newly formed SNAME Student Steering Committee. Hootman is playing an active part in getting SNAME involved with student members with such programs as e-mentoring. He is the MIT student voice for SNAME. Hootman is also working to set up an internship program for undergrads at MIT with the help of MTS."

Last, but definitely not least, Dr. Tom Consi was awarded the Faculty and Teaching Staff Award. "Dr. Consi has been dedicated to teaching and fostering undergraduate research in the department. Within the halls of OE, one constantly hear references like 'Tom Consi taught me...' Dr. Consi's teaching skills and dedication are top-notch and worthy of recognition with this award."

Ocean Policy Committee Meeting

Boston July 22-24

The COP will meet on 23/24 July at Fanuel Hall in Boston. The meeting format will consist of 4 or 5 panels, each dealing with a specific area, with speakers invited by the Commission to provide testimony to and to respond to questions. If you would like to present a statement, there is a 2-hour public hearing, where individuals are permitted to speak for 5-minutes, and submit a supporting white paper to the Commission record.

For further information, contact Bob Lobecker at 401-847-9297 Robert.Lobecker@verizon.net. or see http://www.oceancommission.gov

ROV Victory, cont'd

budget. They have their own in-house machine shop, electronics faculty and CAD facilities devoted to the project all year.

CRLS had a much more modest budget and the student's design was solid, efficient and very effective in meeting all of the mission requirements. The Remotely Operated Vehicles (ROVs) had to find and retrieve as many 'treasure' objects from a depth of 13 feet as possible in 20 mins. CRLS's team consists of Thaddeus Stevanov-Wagner (12th grade, Capt.), Vicky Coady (12th) Amrit Chanduri (11th)

Sealing a leak.

Eddie Hou (10th) and Paul McGuinness (Instructor, Coach), with technical assistance from Peter Kerrebrock from the Charles Stark Draper Labs and MIT Ocean Engineering students Nate Houle and Dee Symonds, under the guidance of Justin Manley.

It was a very intense and competitive environment with CRLS persevering in the face of some complex designs from other teams. The CRLS negatively buoyant and modular design was a great example of KISS concept. A chain drive sweeper wheel was effective in collecting and keeping 'treasure' in the vehicle. Waterproof, high torque driving wheels and bilge pump thrusters were used for propulsion and an inflatable tube was used for positive buoyancy to return to the surface with "booty."

Any MIT students or faculty interested in getting involved in developing or implementing this or other marine technology related projects at the high school level with motivated, accomplished students should contact Paul McGuinness, pmcguin100@aol.com.

For more information about the MATE and the ROV Competition, please see http://www.marinetech.org.

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We're on the Web!
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Submit your news, notes, and OE anecdotes to:
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SNAME Student Steering Committee Representative Mr. John Hootman	

Course 13 welcomes Eda Daniel as the new Admissions Coordinator!!

Upcoming Events

July	4	Independence Day Holiday
	23/24	US Commission on Ocean Policy meeting
	25	MTS New England Clambake & WHOI Archives - for more info contact Bob Lobecker 401-847-9297, Robert.Lobecker@verizon.net
August		
	15	Final Pre-Registration deadline
	20-23	Discover Ocean Engineering
	24	Freshman Orientation begins
September		
	2	Labor Day Holiday
	3	Registration Day
	4	Fall classes begin
	23-25	MOTN Ocean Technology Workshop http://www.motn.org