

Currents[®]

MTS
marine technology society

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News from the Marine Technology Society

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Thirteen of the 23 students at the U.S. Naval Academy who petitioned to form an MTS student section pose with their counselors Professor Tim Arcano (far left) and (far right standing) Captain Jack Nicholson, USNA Weapons and Systems Engineering Department associate chair. The students are, top row, left to right: Grant Genzman, Kurt Geiger, Benjamin Nelson, Alexander Laun, Adam Floyd, Alexander Yachanin, Wilhelm Klinger, and bottom row, left to right: Lyle McDonald, Hunter Gaskins, Matthew Disher, Julie DiGiovanni, Houssein Chawiche and Jordan Kronshage. The Corpus Christi branch of Texas A&M University also formed a section. See story in Section News.

Teledyne RDI Funds Student Members for 4th Year

Teledyne RD Instruments of Poway, Calif., has reached a milestone: it is offering MTS student memberships to 100 college students for the fourth year in a row. The company, which specializes in acoustic Doppler products for current profiling, waves measurement and precision navigation applications, has been a member of MTS for 24 years.

MTS member **Darryl Symonds**, Teledyne RDI's director of marine measurements product lines, has been the main contact for the program throughout its history. In explaining the company's motivation, he notes, "MTS has a lot of great programs available to motivate, inform and educate high

school and college-level students about the marine industry. We believe we are helping MTS get the word out to students, and hopefully removing any financial roadblocks that would prevent them from getting involved in these programs. Ultimately, we hope that these students will become so intrigued with marine science, that they decide to make it a career. I think we'd all agree that it's critical that we continue to attract talented, motivated, and creative young people to the marine industry."

His company, he continued, "has been fortunate to enjoy great success within our industry. Through innovative

See *Teledyne* on page 7

Nine Vie for Four Board Positions

Three MTS members have stepped up to compete for the position of vice president of publications on the MTS Board of Directors. The three other VP positions each have two candidates. MTS members will vote for their choice between August 12 and September 9. If you do not have an e-mail address with the Society on record, you will be mailed a ballot which must be post-marked by September 9 to be counted. Voting is an important contribution you can make to helping the Society continue to grow and expand the opportunities it provides you. Details on the nine candidates begin on page 12. ■

Currents, published bimonthly, is a membership benefit of the Marine Technology Society, the leading multidisciplinary society for marine professionals. Individual membership is \$75. Life membership is a one-time \$1,000.

To join MTS, visit the website at www.mtsociety.org or e-mail jeanne.glover@mtsociety.org.

Send information for *Currents* to publications@mtsociety.org.

The deadline to get items in the next issue of *Currents* is August 15.

Send address changes to jeanne.glover@mtsociety.org

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Oceans in Action

August 22–23, 2011 Biloxi, Mississippi

www.mtsociety.org/conferences/techsurge/oceansinaction.aspx

Invited speakers, topics and other workshop information continues to be added to the website. Stay up to date and don't miss this opportunity to connect with the Gulf Coast ocean community!

OCEANS'11 MTS/IEEE Kona

September 19–22, 2011 Kona, Hawaii

www.oceans11mtsieekona.org

Registration is open and the technical program promises great opportunities for learning. This year's program includes the bulk of the abstracts (94) from the International Symposium on Underwater Technology. Slated for last April in Tokyo, the symposium was canceled because of the earthquake and tsunami. OCEANS'11 will also include a large number of Chinese presenters, according to MTS member and Conference Chair **John Wiltshire**.

Along with presentations on a range of topics (abstract topics are at tinyurl.com/3e6h98l), there will be workshops on Local Tsunami Detection, Assessment and Warning Guidance (with Donna Kocak and Eddie Bernard); LGEOSS Workshop XLII (with Françoise Pearlman); and Partnerships Across the Pacific: Ocean Technology Collaborations with Government, Academia and Industry (with Michael J. Larkin).

Full- and half-day tutorials complement the technical program by offering a wide variety of oceanographic subject matter, from Hyperspectral Imaging to How to Improve Your Federal Proposals by Understanding DoD Processes, and many more. Tutorials are conducted under the auspices of the International Association of Continuing Education and Training, and participants may be eligible for continuing education certificates. For more information about the tutorial program and associated fees, e-mail tutorial@oceans11mtsieekona.org.

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Offshore Technology Conference-Brasil

October 4–6, 2011 Rio de Janeiro, Brazil

www.otcbrasil.org

This new OTC conference has already had to expand exhibit space, so it promises to be a great opportunity for connecting with businesses in this exciting market. Register now!

2011 Dynamic Positioning Conference

October 11–12, 2011 Houston, Texas

www.dynamic-positioning.com

Register before September 11 to take advantage of the early bird discount! The conference is limited to 300 attendees, and organizers expect it to sell out. The conference technical program is shaping up to be of excellent quality (www.dynamic-positioning.com/dp2011/advance_program_2011.pdf) and includes sessions on Ice Testing, New Applications and MTS DP Operations Guidance. Robert Patterson, vice president of projects, Shell America Upstream, will be the keynote speaker. Don't miss the optional one-day workshop on October 10 (limited to 50 registrants at \$100 per attendee, but free for active DP operators attending the conference.) The workshop will consist of two half-day operational sessions: "Developing and Implementing Activity Specific Operating Guidelines" and "SIMOPs/Decision Support Tools." These workshops will be particularly valuable to DP operators and other professionals interested in interactive discussions on these critical DP areas. Register early as there will be limited seating for these workshops. And don't miss the Cocktail and Early Bird receptions, lunch presentations and awards, and the impressive lineup of exhibitors (see who at www.dynamic-positioning.com/exhibit_floorplan.html).

Advertising Information: *Currents* is sent to all national and international MTS members and is also available on the MTS Web site. For price information, contact mbloutinsky@gmail.com. The publisher reserves the right to reject copy that fails to meet the standards of taste and fair statement that *Currents* follows.

DRILLDOWN



Creating a TechSurge Workshop

Laurie Jugan
Chair, Gulf Coast Section and
Co-Chair Oceans In Action

As the Gulf Coast Section prepared for OCEANS'09 in Biloxi, there was a hidden goal of taking one track—Operational Oceanography—and creating a new mini-conference or similar event that could take place on a more frequent basis. The idea was to highlight how marine technology is used to address real-world problems and to feature the numerous ways Gulf Coast agencies and companies develop solutions to these problems by applying focused research results.

Since OCEANS'09, MTS initiated the TechSurge series of workshops and the two ideas immediately combined to form the Oceans In Action TechSurge Workshop through a connection made by Executive Director **Rich Lawson**. After completing a relatively simple application and initial budget, the workshop quickly gained momentum.

MTS headquarters assisted the kick-off by visiting the section to offer assistance. During the visit, the staff ensured that the venue could handle the expected number of attendees and provided a demonstration of the "Reg Online" tool. With the budget and venue out of the way, the local section was able to focus on securing speakers who would spark the interest of the local marine technology community, and hopefully others throughout the nation.

Through the coordination of MTS's **Chris Barrett**, a flyer was created to advertise Oceans In Action at the May Offshore Technology Conference. MTS articles in *Currents* and news blasts have included other advertising opportunities.

By far, the most appreciated support has come from the assistance in the development of the website and registration package. Hosted on the MTS website, the registration page went live on June 1 as planned by the local committee, and with minimal input from the committee. Using the budgeted information, the MTS staff tailored the online registration tool to match the allocated fees for attendance and is addressing requests by potential sponsors and exhibitors.

With support from MTS, the Gulf Coast Section has been able to focus on expanding the content of the workshop, instead of having to address the details of the event itself. With MTS's help, an easily replicated and self-sustaining event is expected! ■

MTS Offers New Opportunity to Company Members

Attending Oceanology International in 2010 led MTS to realize that the European conference is a great venue for marine technology. As a result—plus member interest—MTS is sponsoring a USA pavilion for its member companies at Oceanology 2012.

"This is a significant benefit for many MTS members," explained Executive Director **Rich Lawson**, "because we can now provide exhibit space at various sizes and affordable rates to our members. We can make available kiosk space for companies that have already reserved exhibit space at this show for a poster, literature, and an invitation to visit their booth, thus leveraging the foot traffic through the U.S. pavilion to their space and increasing overall exposure at the event. Companies that would like a presence at the show but that may not be able to justify the expense of a full booth may also use kiosk space to distribute literature while their representative walks the show and perhaps even arranges for meetings later by their space."

The 2012 exhibit is considered by many to be a "must attend" event because of its sales and marketing orientation, and because of its nearly 7,000 attendees. It is held every other year in London.

In addition, MTS will sponsor a reception in the USA pavilion.

MTS member companies that join in this sponsorship will be provided with elegantly designed invitations for distribution to their customers and prospects. Also, their company logos will be placed online on an MTS Oceanology page indicating their sponsorship, as well as strategically placed throughout the reception area. The companies will be thanked in *Currents* and mentioned in MTS press releases about the event. Sponsoring companies may also issue their own press releases indicating their sponsorship of the reception.

Booth space, purchased directly from Reed Exhibitions, is 3x3 square meters, and with furnishings, listing fees and VAT, will cost about \$6,750. MTS is offering a wide variety of space sizes at an all-inclusive cost. MTS will also process the paperwork for VAT and rebate back to participating companies the fees. In addition, MTS will take care to replenish literature for kiosk exhibitors from the exhibitors' supplies. Each kiosk contains a cupboard for literature storage. Space options include (all in meters) 3x2, 2x2, and 2x1 spaces.

To learn more about this opportunity and to reserve space, contact MTS's marketing and communications specialist Mary Beth Loutinsky at mbloutinsky@gmail.com. ■

MTS Exhibits at Wrecks of the World II Conference

For the first time, MTS was an invited exhibitor at the conference Wrecks of the World II: Evaluating and Addressing Potential Underwater Threats, which was held in Linthicum Heights, Md., in June.

The primary focus of the conference was oil leaks from wrecks. Over 8,500 sunken shipwrecks have been identified around the

world (1,500 of those are sunken tank vessels), containing as much as 20 million tons of oil and other hazardous materials. Co-sponsored by the American Salvage Association and the North American Marine Environmental Protection Association, the conference featured presentations by several MTS members and

See *MTS Exhibits* on page 4

MTS Connects with Spain at OCEANS'11 IEEE Santander

MTS recently exhibited at OCEANS'11 IEEE in Santander, Spain as part of the Society's ongoing commitment to strengthening its global presence. The conference was held on June 6–9. Besides this conference, MTS has supported the Oceanology International conferences in London, and the OCEANS conferences in Japan, Germany, and Australia.

"There are great benefits for our members in expanding to other countries," said **Rich Lawson**, MTS executive director, who attended the conference with Member Groups Manager **Mike Hall**. "We help our business members find new partners and customers, and we increase opportunities for sharing interesting research developments and new technologies. We introduce new professionals to the Society, and they discover ways to assist each other."

Helping was the U.S. Commercial Service and MTS members **Carme Parareda** and **Carlos Barrera**. The U.S. Commercial Service connected Lawson with a professor at the Universidad de Cantabria; with marketing consulting firm Avanze; and with the Sodercan Group, which supports business development in the state of Cantabria in northwest Spain where the conference took place. Parareda is the chief operating officer at MTS member company **Ictineu Submarins**, and Barrera is with PLOCAN - Plataforma Oceánica de Canarias. They provided Lawson and Hall with a steady flow of companies and individuals to meet. Ictineu, located in Barcelona where it is developing a manned submersible, is the only Spanish company that is a member of MTS, a situation Parareda and Lawson would like to change.

"Carme was incredibly generous with her time, and we are continuing to build on the relationships she helped us to develop," Lawson said.

While technical papers at the OCEANS'11 IEEE Santander Conference covered a broad range of topics, a large number of the Spanish exhibitors were focused on marine renewable energy. The Universidad de Cantabria (whose employees made up the conference organizing committee), its Instituto de Hidraulica Ambiental (Environmental Hydraulics Institute) and several other organizations have created a research/business cluster, the Sea of Innovation Cantabria Cluster, which "aims to integrate all the actors that

operate in the offshore wind and marine energy sector in Cantabria." The Instituto de Hidraulica Ambiental provides research and testing facilities for marine renewable energies. Lawson and Hall joined other MTS members in an interesting conference side trip to the institute's new wave pool.

The next international OCEANS conference is slated for May 21–25, 2012, in Yeosu, Korea. ■



Carme Parareda, COO of Ictineu, (right) visits the MTS booth and Executive Director Rich Lawson.



Taking advantage of a conference side tour, MTS member Shinichi Takagawa pauses by the new wave pool at the Instituto de Hidraulica Ambiental.

MTS Exhibits

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provided an opportunity for an objective review and discussion of the current state of potentially polluting wrecks, as well as offered considerations to address the problem. MTS member, **Michael Barrett**, who was a fellow from Duke University at Woods Hole Oceanographic Institute at the time of the research, presented "State-of-the-Art Research on Wrecks." MTS member, **Capt. Richard Habib**, of Titan Salvage, presented "Wreck Remediation—Case Studies." ■

OCEANS'11 MTS/IEEE Kona

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A special tour of the Natural Energy Laboratory of Hawaii Authority (NELHA) will be offered as an optional activity. At NELHA's 870-acre site, various organizations explore alternative energy production, solar-based energy techniques, aquaculture, marine biotechnology and coldwater agriculture systems.

Exhibitors at the OCEANS'11 trade show include leading ocean technology and engineering companies from around the world. For information on how your company can exhibit, contact Exhibits Chair Ty Aldinger at exhibit@oceans11mtsieeeekona.org.

One of the missions of OCEANS conferences is to foster and encourage participation by undergraduate and postgraduate engineering or science students enrolled in degree programs at accredited university or engineering schools around the world. Students are encouraged to attend the conference for the purpose

of interacting with leading technical experts and to develop contacts for future employment opportunities. The OCEANS Student Poster Competition has been a long-standing opportunity for students to be recognized. The posters are judged by experts, given awards, and displayed during the conference. Students who were accepted for the poster program will receive a travel allowance and complimentary registration, and their work will be included in the IEEE Xplore digital library. ■

CORRECTION: The photo caption on the front page of the May/June *Currents* enthusiastically said the amount the Houston Section raised at its Sporting Clay Tournament was \$980,009. The actual amount, as noted in the article on page 8, was \$98,009, still an impressive amount and a record breaker.

REDIRECTION: The March/April issue of *Currents* listed a URL for the new MATE ROV website. While the URL is accurate, it is a little challenging to remember. Use www.materover.org instead.

In Memoriam



MTS Life member **Edward Clausner, Jr.**, who served as MTS president in 1995 and 1996, died on June 13 in Atlantic Beach, Fla., at the age of 81. Clausner joined MTS in 1967, just four years after the Society was founded. He was designated an MTS Fellow in 1986, and in 1987 he was elected vice president of the Eastern Region (a previous MTS Board of Directors

position). Clausner began his career after receiving a B.S. in electrical engineering from the U.S. Naval Academy and an M.S. in physical oceanography from the Institute of Marine Science at the University of Miami. He retired from active duty with the Navy in 1974. His subsequent employment included vice president of Tracor Marine and General Manager of the Western Cable Ventures division of Western Instrument Corporation. He ended his career as an associate of Marine Development Associates, Inc., providing guidance to the General Offshore Corporation and Global Industries, Ltd. He served on numerous studies, interagency groups and boards, including the Scorpion Technical Advisory Board, Deep Submergence Project Advisory Board and the CNO Operations Program Coordination Group for Deep Submergence. When he won the position of MTS president-elect in 1993, Clausner reflected on the Society's personal impact: "My membership in MTS has proven to be so beneficial to me over the years, both personally and professionally, that I would now like to try to give something back to it." ■



Alan Kenny

Teledyne RD Instruments

MTS member **Alan Kenny** has joined MTS member **Teledyne RD Instruments** as the new sales manager for the company's navigation product line. Previously, Kenny was vice-president of sales for the Americas for RESON. He brings a 27-year career in acoustics, vibration, and mechanical and fluid dynamics, with an educational background at the United States Naval Academy and the University of Minnesota.



Scott Harrison

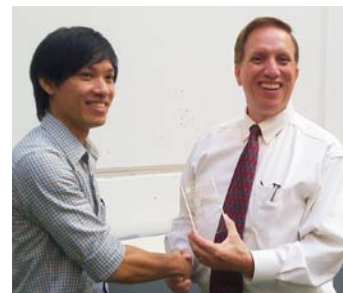
Teledyne Geophysical Instruments

Teledyne has appointed **Scott Harrison** as vice president and general manager of its business unit **Teledyne Geophysical Instruments**, an MTS member. Previously, Harrison served as vice president and general manager of Teledyne Monitor Labs. He has a B.S. from the United States Naval Academy and has attended executive management programs at Stanford University and the London School of Business. Following graduation from the U.S. Naval Academy, he served as a nuclear submarine warfare officer.

HSE Award

Congratulations to **Linh Le**, a subsea engineer with INTECSEA ANZ (Australia, New Zealand), for being a finalist in the 2011 WorleyParsons ANZ HSE Awards. **INTECSEA**, an MTS member, is a global company within the Worley-Parsons Group. The award, presented in April, recognizes those who go above and beyond with regard to health, safety and the environment (HSE). Le

was nominated for his support to HSE both as part of and outside of his day-to-day role. He is an active member of the Safety Leadership Team, a group of volunteers who drive the HSE culture on the Chevron Wheatstone Subsea Flowlines and Pipelines Project. "Linh has shown great promise as he continues to develop as a safety leader for both the company and on Wheatstone," said Bruce Garrard, the HSE coordinator for INTECSEA in Perth.



Linh Le (left) accepts the 2011 WorleyParsons ANZ HSE Award from Vince Vetter, INTECSEA ANZ managing director in the Perth office.

Speed "Dating"

MTS member **Chuck Richards** of MTS member **C.A. Richards Associates** had a few fast dates in April—quite a few and all in one night. He participated in the National Ocean Sciences Bowl Speed-Career Search along with professionals, professors and graduate students from various Texas organizations. The high schoolers attending the NOSB competition had five minutes to interview each professional. Richards, who met with over 80 students, noted that, "Most of the questions revolved around my work and work experiences, but I had a couple ask about how much money I make and if I enjoy doing the work that I do. My primary business interests are in ROVs, sonar, survey and vessel automation (DP systems), so a lot of questions were about those systems. It was a lot of fun." Richards was at the event wearing his hat as the chair of student affairs for the Houston Section.

Asper Article

U.S.A. Today featured the research of MTS member **Dr. Vernon Asper**, professor of marine science at the University of Southern Mississippi, in an article titled, "Research Robots Roam the Ross Sea." Asper was trying out Seagliders, unmanned underwater vehicles from MTS member **iRobot**. The Ross Sea expedition was a proof-of-concept run for the underwater robots, funded by the National Science Foundation, to see if they could withstand the chill waters there at depths of nearly 2,000 feet.

CA Richards Hire

MTS member **Rick Cisneros** joined the firm of **CA Richards & Associates** to cover accounts in Houston, Louisiana and Mississippi. His experience includes DP reference systems, acoustic positioning, imaging sonar systems, SVDR installations and ROV sensor integrations. Cisneros has a strong technical background in electronics and has completed numerous sales, technical and project management courses. His most recent position was sales manager with Forum DPS Offshore Houston.

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Jennifer Patterson

Patterson Hired

MTS member **SonTek/YSI** hired **Jennifer Patterson**, also an MTS member, as product manager/physical oceanographer in the Sales and Marketing Department. Patterson came from the University of Hawaii where she was an oceanographic specialist working on product development and integration for the Pacific Island Ocean Observing System. Her previous experience includes work as an oceanographic consultant on U.S. Navy contracts for Planning Systems, Inc., and several years as an oceanographer with NOAA. She earned a B.S. in environmental geology at Old Dominion University and has a certification in remote sensing of coastal landscapes.

New at Hydrovolts

MTS member **Hydrovolts** has hired **Brian Williams** as business development manager. He will pursue grants and contracts for hydrokinetic energy technology development and demonstration projects from agencies such as the departments of Defense, Energy and Agriculture, and from power and rural communities with hydrokinetic resources. He will also support Hydrovolts' fast-growing staff with customer relationship management and project management. Williams was recently the business development manager for the Ocean Technology Division of Science Applications International Corporation, before which he served 26 years in the U.S. Navy as an oceanographer and meteorologist. **Michelle Holmes** is the company's new executive assistant. She has a master's degree in environmental studies and will lead market research and other efforts.

Prager Tour

MTS member **Dr. Ellen Prager** is getting support from Microsoft Research for a speaking tour titled "Bringing Science to the Masses" in association with the release of her new book, *Sex, Drugs, and Sea Slime: The Oceans' Oddest Creatures and Why They Matter*. Microsoft Research's hope is that "institutions that are committed to reaching out to public and educational audiences will take advantage of the opportunity to host Dr. Prager for a presentation that will not only be entertaining, but also highlight the relevance of marine life to humankind and the importance of science to society."

Manley Move

MTS member **Justin Manley** has joined Teledyne Benthos as senior director of business development. His most recent position was director of scientific and commercial business at MTS member **Liquid Robotics**.

Liquid Robotics CEO

MTS member **Liquid Robotics** has hired **Bill Vass** as president and chief executive officer. Vass is the former president and COO of Sun Microsystems Federal and has more than 30 years of U.S. government and private sector IT leadership experience. Before joining Sun, Vass had a lengthy public service career, including

working in the Office of the Secretary of Defense at the Pentagon, and as chief technology officer and technical lead for U.S. Army worldwide personnel systems. Earlier, Vass developed large-scale IT engineering and business systems solutions for the oil and gas industry, defense systems integrators and ocean engineering.

NOAA Co-Chair

David Legler has replaced **David Kennedy** as NOAA co-chair for the Interagency Ocean Observation Committee. Legler joins the other two IOOC co-chairs, MTS member **Bob Houtman** (NSF) and **Eric Lindstrom** (NASA).



Steve Bell

Bell Joins BIRNS

Steve Bell is the new optical/photonics engineer at MTS member **BIRNS**. Responsible for the design, development and execution of the company's fiber-optic connector systems, he will help BIRNS expand and enhance its wide range of fiber optic and hybrid connector solutions. Bell, who holds a bachelor of science degree in optical engineering, has more than 20 years of industry experience. Before joining the team at BIRNS, Bell was a senior photonics engineer at Sabeus Federal Systems.

Spier Publication

MTS member **Candace R. Spier** was the lead author on a paper in *Environmental Toxicology and Chemistry* titled "Near Read-Time, On-Site, Quantitative Analysis of PAHs in the Aqueous Environment Using an Antibody-Based Biosensor." Spier graduated in May with a Ph.D. in marine science from the College of William and Mary and has accepted an offer to work as a post-doc at the University of California-Davis in Dr. Bruce Hammock's lab where she will be developing antibody-based biosensors for chemical targets of concern (i.e., pharmaceuticals), employing new photo-optic sensor platforms.

Muehlechner's Contribution

MTS student member **Nancy Muehlechner** has co-authored a paper on ocean acidification while working on her Ph.D. at the University of Miami Rosenstiel School of Marine and Atmospheric Science. Her role in the work was to assess seagrass diversity and epiphyte coverage. She used underwater incubation chambers that she built to measure photosynthesis and respiration. The paper concluded that ocean acidification, along with increased ocean temperatures, will likely severely reduce the diversity and resilience of coral reef ecosystems within this century. Muehlechner is pursuing a degree in marine biology in the lab of the study's lead author, Chris Langdon.

Cole Leaves USF

After 21 years, MTS member **Rick Cole** retired from the College of Marine Science at the University of South Florida (USF) in St. Petersburg to take the position of president of RDSa International, a Florida-based oceanographic consulting company. Cole will provide experience and expertise in project development,

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Members and Others in the News

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from design conception to data dissemination of offshore technologies, worldwide. He began his career at NOAA before moving on to USF and is a co-founding member of USF's Ocean Circulation Group.

Horizon Hire

Benjamin Shaw, M.S., a graduate of the University of Miami's Rosenstiel School of Marine and Atmospheric Science, has joined MTS member **Horizon Marine** as a physical oceanographer, Eddy Watch analyst. His master's thesis focused on variability of the meridional overturning circulation in the North Atlantic. His duties will include analyzing data and preparing Eddy Watch reports on the location and strength of ocean currents in the Gulf of Mexico and offshore Trinidad and Brazil. He will also be a pilot in charge of Horizon Marine's AUV fleet.

iXBlue Hire

iXBlue has expanded its customer support function with the appointment of **Scott Gray** based in Aberdeen, U.K. In his role as customer support engineer, Gray will assist customers in the U.K. and Ireland across all the company's product areas. Gray has a bachelor of engineering degree from the Robert Gordon University in Aberdeen and extensive experience in electronic and survey engineering, both offshore and onshore.

New at USCG

A woman took command of a U.S. military service academy for the first time in history when **Rear Adm. Sandra Stosz** took over as the superintendent of the U.S. Coast Guard Academy in New London, Conn., in June. Stosz takes over as the school continues to see an increase in minority admissions, growing from 12 percent in 2008 to 24 percent in 2010. Stosz is a 1982 graduate of the U.S. Coast Guard Academy and the first female academy graduate to reach the rank of rear admiral. ■

Teledyne

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technologies, hard work and a commitment to our industry's needs, we've continued to grow and thrive for nearly 30 years. We're thankful to be in a position where we can continue to give back to our industry."

If you know a student interested in becoming a member of MTS, ask him or her to contact Jeanne Glover at jeanne.glover@mtsociety.org. ■

Get Your Book Reviewed!

The *MTS Journal* reviews books relevant to the membership's interests. If you have recently published a book and would like it reviewed in the *Journal*, contact Amy Morgante at morganteeditorial@verizon.net.

Review a Book!

If you would like to review a book for the *MTS Journal*, please contact Amy Morgante at morganteeditorial@verizon.net. Deadlines are flexible, and you get to keep the book!

Welcome New Members

Argentina

Matias A. Cersosimo

Brazil

Antonio Henrique Monteiro da Fonseca
Thomé da Silva
Paulo Roberto de Freitas Teixeira
Amanda Viana Gonçalves

Canada

David Cook
Tara Daggett
Michelle McCray
Ian Robbins
Amanda Smith
Allison Stagg
Robert H. Sweeney
Snowden Walters

China

Ireton Lu

Mexico

Juan Pena

Nigeria

Ifeoma B. Aeché
Torru Waddel Ebiwei
Oby Chuma Ugbo

Portugal

José António Canedo
Duarte da Rocha

United Kingdom

Zoe Cairns
Chris Lovell
Graeme Rogerson

Colorado

Richard Mignogna

Connecticut

William M. Carey

Florida

Dennis Peters

Hawaii

Margo Edwards
George Pararas-Carayannis

Indiana

Lorie Becker

Louisiana

Emile Gros
Kenneth Leblanc

Maryland

Christopher P. Burns
Houssein Chawiche
Wei-Hso Chen
Julie DiGiovanni
Matthew Disher
Adam Floyd
Hunter M. Gaskins
Kurt Geiger
Grant Genzman
Souhaïel Gharbi
Laura Hill
Matthew Hoel
Wilhelm Blau Klinger
Jordan Kronshage
Kevin Lees
Lyle McDonald
Joshua Meyer
Benjamin Nelson
Patrick S. Paap

Michael Pollard

Drew Shaut
Alexander Yachanin

Mississippi

Dawn C. Petraitis

New Jersey

Jae Myung

Nevada

David R. Shields

New York

Caitlin Lashbrook
Aaron Vodnick

Oregon

William Miller
R. Kipp Shearman

Pennsylvania

Alexander Laun
Ronald John Peters
Chris Phillips

Texas

Robert O. Berry
Sean Blackmon
Matt Booker
Tyler Burroughs
Isaac Caballero
Steven Sukjoo Choi
Gus DeOliveira
Tim Ellisor
Martin Flores
Stephen Garcia
Juan Gonzalez
Kelli Gustafson
Mark E. Haas
Chih-Heng Huang
Alex Iben
Timothy Joiner
Javier Juarez
Matt Kirk
Lawrence Lamborn
Christine Lan
Mandy M. Lara
L. Karina Larsen
Ruben Longoria
Jim Macklin
Jayne D. McClure
Michael C. McDonald

Sheila Moore

Mike Newhouse
Brooks Nunley
Manuel Ortuno
Ryan Ramon
Steven Reeves
Karl Russell
Keith Shepherd
Jim Slaughter
Marco A. Souza
Jeff Thornton
James P. Varley
Richard R. Vernotzky
Thurman Walling
George Watson
Matthew White
Justin M. Whitworth

Virginia

Cheng-Hang Chi
John Hermes
Heather Macdonald

Washington

Mark Pederson

New Section Forms to Connect Members in Oregon

How did a crab pot lead to the creation of a new MTS section? The answer isn't quite as complicated as James Burke might have explained on the old British TV show "Connections," but there is a connection.

For his thesis at Oregon State University (OSU), **Jeremy Childress** needed several dissolved-oxygen sensors to attach to crab pots. A grant supplied enough money to buy two off-the-shelf sensors, or, by making them himself, he could have five. Looking for parts—and advice—he came across the Marine Technology Society online. He began asking colleagues if they knew about the Society; **Chris Ordonez's** name came up. Ordonez, a former offshore engineer and current OSU graduate student, happened to be the vice chair of the Puget Sound Section. At the same time, MTS member **John Lavrakas**, president of Newport, Ore.-based Advanced Research Corporation, had been talking to **Mike Hall**, MTS's member groups manager, about starting an Oregon Section. Oregon was part of the Puget Sound Section, but the distance between Oregon and where the section's activities occurred in Washington was prohibitively far, and Oregon members tended not to go. Three men, one interest—it was a perfect case of synergy and a perfect location for a new section.

Why a perfect location? "Lots of cool things are happening in the area," Childress said. NSF's Ocean Observatories Initiative has placed a series of permanent moorings—the Endurance Array—off the central Oregon coast. Newport also boasts NOAA's recently built Pacific Marine Operations Center, home of NOAA's Pacific research fleet, and OSU's Hatfield Marine Research Center. Add to these local interest in offshore renewable energy, a variety of marine technology businesses and, of course, OSU in Corvallis.

"With the Ocean Observatories Initiative getting under way in the next couple of years and with many NOAA scientists and technologists moving to Newport, a new MTS section could help provide a meeting place for the newly arriving professional community and those currently here affiliated with OSU and local companies," Ordonez noted. Childress concurred: "I felt we needed a formal organization to bring all these interests into one room."

Childress, Ordonez and Lavrakas met to hash out the details. MTS members in Oregon were petitioned on their interest in separating from Puget Sound; the petition quickly filled with 16 names. The MTS Board of Directors approved it in May at the semi-annual Board meeting during the Offshore Technology Conference. Interest in the new section continues to build: **Oregon State University's College of Oceanic and Atmospheric Sciences** (COAS) has since joined MTS as an institutional member.

Childress, who graduated with a master's degree in marine resource management last fall, has stepped into a lead role until elections for the section's leadership positions can be held in the fall. Despite juggling two jobs—he works part time for The Sexton Co. and for the Partnership for Interdisciplinary Studies of the Coastal Oceans (PISCO)—Childress rounded up members to help with the Da Vinci Days Festival in Corvallis in July to supply a portable swimming pool and ROV kits made of PVC pipe that kids and their parents could fabricate into ROVs, then pilot through the pool.

Spurred in part by Childress's crab pots, a new section has been launched that will allow Oregon engineers and technologists a solid opportunity to learn, to share and—to make connections. ■

MTS Adds TAMU Branch, Navy as Student Sections

Texas A&M University-Corpus Christi had been on **Chuck Richards'** radar for some time. Aware of their degree programs and always looking to boost student participation in MTS, Richards, who leads student affairs for the Houston Section, thought the Corpus Christi branch of TAMU would be a good fit with MTS. Asking Houston Section members for a contact, he was given the name of **Dr. Lea-Der Chen**, associate dean of engineering and computing sciences and professor of mechanical engineering.

"I went down to Corpus Christi to visit with him, showed him the MTS PowerPoint presentation [describing the Society] and discussed the benefits to the students of having a student section," Richards said. Chen was receptive and, after showing the PowerPoint to his students, presented them with a petition. It didn't take long for the students to fill the petition, Chen said.

In May, the MTS Board of Directors approved the petition at the Offshore Technology Conference, and the new student section was born with Chen as counselor. Corpus Christi joins two other TAMU campuses—Galveston and College Station—which also have student sections.

Two years ago, TAMU-CC added a new mechanical engineering program, and the students who entered at that time are now juniors and perfect to become new student members, Chen said. He hopes to use MTS to encourage professionalism and lead-

ership. His plans for the section include visiting speakers and competitions (like the MATE ROV competition). He is also hoping the section will encourage faculty to pursue marine research.

Naval Academy

When **Dr. Tim Arcano** arrived at the Naval Academy in January to teach, he was surprised to find there was no MTS student section. "A couple of professors discussed the idea of forming a student section, especially to inspire marine-related academic enthusiasm by seeing and hearing from practitioners in the marine technology field," he noted in an e-mail. "Numerous midshipmen were keen on the idea." Keen enough that 23 of them signed a petition that calls for 10 signatures.

Arcano is now one of two counselors for the new section. The other is U.S. Navy **Cmdr. David J. Robillard**. Both men teach in the Department of Naval Architecture and Marine Engineering where they have focused on integrating the curriculum for underwater technology and engineering related to ocean exploration.

The newly elected student section president, **Midshipman First Class Wilhelm Klinger**, polled the section's midshipmen about what they were interested in and came up with five areas: manned underwater vehicles, remotely operated vehicles,

See *New Student Sections* on page 9

Florida Members Strategize to Revive Section

Fresh in her new position of vice president of section affairs, **Lisa Medeiros** led a conference call aimed at breathing new life into the Florida Section. The call, in May, included **Mark Luther, Stephen Castelin, Bill Venezia, Aaron Macy, Rick Cole, Jack Rowley, Erica Moulton, Lou Nash and Liesl Hotaling. Mike Hall**, MTS member groups manager, was also on the call.

Luther, the previous section chair, discussed past section activities, noting the annual co-sponsorship of the MATE ROV regional competition as well as brown-bag lunch seminars in conjunction with the University of South Florida's Marine Science Department. Moulton added that the Florida Section also sponsored a prize for the International MATE competition each year.

The group discussed the challenges of operating as a "local" section considering the size of the state of Florida. According

to Venezia, who has been an MTS member since 1967, the section was originally called the South Florida Section with the intent to branch out and grow MTS throughout the state. The plan did not come to fruition and activities centralized in the Tampa/St. Petersburg region. The conference call attendees discussed the possibility of the section having a central leadership structure—chair, vice chair, treasurer, secretary—with informal regional clusters throughout the state. Hall was tasked with contacting section members to gauge interest in this proposition, as well as to issue a call to section members to fill the leadership positions. If you are interested in getting involved in a more active Florida Section, contact Mike Hall at michael.hall@mtsociety.org. ■

Gulf Coast

Annually, the section requests technical updates and speakers from the major federal agencies at Stennis Space Center. In the last few months, the section hosted brown bag luncheon meetings where attendees heard from the three largest agencies at Stennis. The first update was provided by NASA's Duane Armstrong, who detailed the use of NASA's remote sensing tools to support a variety of decision makers. The tools included imagery, model results, GIS maps, data and other products that were used to assist in NASA projects such as climate change, as well as unplanned efforts such as the Deepwater Horizon event. NOAA's National Data Buoy Center Director **Helmut Portmann**, chair of the MTS Cables and Connectors Professional Committee, spoke about the center's mission to maintain and expand the array of buoys and sensors throughout the world. The center's office was also involved in responding to the Deepwater Horizon event, taking the opportunity to develop a self-contained sensor suite that can be rapidly deployed to any location. MTS member **Rear Adm. Jon White** spoke about the new roles for the Naval Meteorology and Oceanography Command in recent years, from anti-piracy and support to the recovery of areas devastated by tsunamis. The section's most recent meeting featured Mike Robison of T. Baker Smith who presented information on the

development of a new, rigid boom system that was created to funnel oil from the Deepwater Horizon event in passes for easier collection. Since more flexible booms would not withstand the strong currents in these passes, T. Baker Smith teamed with local partners to develop the very successful system. The section has also been working on the Oceans In Action TechSurge Workshop coming on August 22–23 in Biloxi. Registration is open at www.mtsociety.org; participants, exhibitors and sponsors are welcome! Chair: Laurie Jugan, jugan@bellsouth.net

Hawaii

The section held its second joint meeting with the local chapters of the Society of Naval Architects and Marine Engineers, and the American Society of Naval Engineers. Forty-five members met in the conference room of the Maple Garden Restaurant in Honolulu. MTS member **John Malone**, chair of the SNAME Southwest Section, welcomed everyone and then introduced Eric Schiff, VP for special projects at Navatek. Schiff started his comments with a Navatek corporate summary and then proceeded into his presentation on "Innovations in Advanced Marine Technology." Navatek, a subsidiary of Pacific Marine and Supply, was started in 1979 and currently has 47 employees (40 percent degreed engineers), producing \$17 million in annual revenues. Navatek's thrust today is innovative hull forms, extensively modeled through computational fluid dynamics analysis and proven by substantial at-sea demonstrations. Navy Special Forces has been a recent customer, looking for small, high-speed craft that can handle a wide set of sea conditions. At 50 knots or more, water can get very hard, resulting in numerous spinal injuries to crew members from slamming. Current numbers of spinal injuries are unacceptable to the Navy; consequently, Navatek is investigating bow-lift bodies, high-speed planning hull forms, ride control systems, and inflatable boat shapes. Numerous videos were shown detailing how these lines of study have resulted in much improved high-speed rides for the crew and cargo. Schiff's presentation was well received, generated numerous questions and provided, for our student members especially, a meaningful insight into one aspect of the marine technology industry. Chair: Stu Burley, sburley@hawaii.rr.com

New Student Sections

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renewable energy, marine education and offshore structures. Arcano talked about the section's plans: "We are hoping to have a speaker on one of these topics just about every month and plan on a field trip or two—especially given the wealth of local talent in the D.C./Annapolis area. Also, we'd like to perform some volunteer service regarding STEM [science, technology, engineering and math], perhaps in supporting the Office of Naval Research Sea Perch student ROV program, which is big here at the Naval Academy." He said he thought the biggest benefit of the students connecting with MTS would be exposure to "talented and dedicated practitioners in the field. The midshipmen will be able to get a glimpse of the state of the art in knowledge and technology, as well as see the professional dedication of the folks working in this demanding field." ■

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ROV Committee Awards 2011 Scholarships

Drew Michel and Russell Ives had plenty to grin about at the recent MATE Competition in June (see story on page 24) when Michel, chair of the ROV Committee, told Ives he was the winner of the \$10,000 MTS ROV Committee MATE Center Scholarship for 2011. Ives will attend Auburn University studying mechanical engineering.

Receiving a \$7,500 MTS ROV Committee MATE Center Scholarship was Houston Fortney who will pursue an electrical engineering degree at Purdue. Kip Hackling received \$5,000 and will attend Brigham Young University pursuing a degree in mechanical engineering. MTS member **Sebastian Baca** received \$2,500 and is attending the University of Hawaii at Hilo pursuing a degree in marine science. All will be recognized during the Awards Presentations at Underwater Intervention '12 in New Orleans, La.

The ROV Professional Committee also awarded four scholarships for its 2011 ROV Committee Scholarships. Trevor Uptain was awarded \$10,000 and will be attending the University of Washington studying mechanical engineering. Adam Simko was

awarded \$7,500 and will attend UC Davis studying mechanical engineering. MTS member **Michael Filimon** received \$5,000 and will attend the University of Rhode Island pursuing a master's in ocean engineering. Zachary Harris received \$2,500 and is attending Florida Institute of Technology studying ocean engineering.

The ROV Scholarship fund, established in 1994 by Michel, makes grants annually to students interested in ROVs or work that supports the use of ROVs. Since that date, over \$250,000 has been awarded. ■



Drew Michel (left) and Russell Ives, wearing goggles at the ROV Competition, have much to grin about.

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Houston

The May lunch featured a presentation on the outlook for the 2011 hurricane season by Chris Hebert, senior meteorologist with ImpactWeather. In June, attendees of the popular lunches heard Dennis McLaughlin, senior VP for development at Kosmos Energy in Dallas, speak on the Jubilee Project, which was the first significant development ever offshore Ghana, an area with no existing infrastructure. The 2011 Golf Tournament was at the Wildcat Golf Course in South Houston on July 28, after *Currents* went to the printer. Chair: Robert Keith, rkeith@phnx-international.com

Puget Sound

The section wrapped up its season in June with a BBQ and Summer Social, an annual event once again on the RV *Golden Dolphin*. The June BBQ was hosted by the vessel's owner Ross Laboratories. Joining MTS members were members of the IEEE Ocean Engineering Society and the Hydro Society of America.

In May, section members heard James Ferguson of International Submarine Engineering talk on "Ten Days Under the Ice with an AUV." Chair: Fritz Stahr, stahr@oceaninquiry.org

were enjoyed by all players. Hole Sponsors for the event included MTS members **Teledyne RDI**, **Teledyne Impulse**, **SeaBotix**, **Sontek/YSI** and **Subconn**, along with Sidus Solutions, Seacon and National University. Rolando Mengote from Sontek/YSI won for lowest overall score; Dan Pearlman from InterOcean Systems won for best Peoria score, and Mike Leone from Clark Pest Control won for Closest to the Pin. Thirty-six golfers participated, raising \$3,000 to benefit the San Diego Section high school internship program. Chair: Scott Mau, scott.mau@noaa.gov



From left, Webb students Sam Waterhouse, Justin Van Emmerik, Bryce Bartling and Roland DeMarco take a break during their trip from New York to Maryland to visit Oceaneering International.



San Diego

MTS San Diego held its 4th Annual Summer Swing Golf Tournament on June 4 at Sail Ho Golf Club in Point Loma. Nine holes, lunch, a \$5,000 hole-in-one chance and many great raffle prizes

Dave Velasco (left) of Sontek/YSI awards first prize to Rolando Mengote of Sontek/YSI at the MTS San Diego Section's Summer Swing Golf Tournament.

Webb Institute

The student section recently enjoyed an informative visit and presentation at the laboratory and design facility of MTS member **Oceaneering International** in Hanover, Md. The presentation narrated the process timeline of a few recent company

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Ocean Observing Systems

The committee was represented at the NEPTUNE Canada Workshop on June 2–4 in Victoria, B.C., Canada. The workshop provided a forum to discuss the successes and challenges of NEPTUNE Canada's cabled observatory, present the latest scientific research results and pursue ideas for future research planning and growth. Interactive sessions were held each day to encourage discussions from all participants on a number of key topics: ocean climate dynamics and impact on biotas, plate tectonic processes and earthquake dynamics, fluids in the ocean crust and gas hydrates, dynamics of deep-sea ecosystems, and engineering and computer science. A summary of the Workshop is at wiki.neptunecanada.ca/display/workshop/June+2011. Chair: Donna Kocak, dkocak@harris.com

Offshore Structures

Committee members were busy this spring in supporting API subcommittee 2, Offshore Structures, which is completing work on the following long-awaited consensus standards:

- API RP 2A, Planning, Designing, and Constructing Fixed Offshore Platforms – WSD, 22nd Edition
- API RP 2SIM, Structural Integrity Management of Fixed Offshore Structures, 1st Edition



One of the many interactive break-out sessions at the NEPTUNE Canada Workshop. (Photo courtesy of NEPTUNE Canada)

- API Spec 2SF, Specification for the Manufacture of Structural Steel Forgings for Primary Offshore Applications, 1st Edition
Chair: Peter Marshall, mhpsyseng@aol.com

Legislative News

Gulf Coast Caucus

In June, 11 lawmakers from Gulf Coast states announced the formation of a bipartisan Gulf Coast Caucus. The caucus is co-chaired by Representatives Steve Scalise (R-LA) and Kathy Castor (D-FL). Other members are Reps. Pete Olson (R-TX), Gene Green (D-TX), Blake Farenthold (R-TX), Sheila Jackson Lee (D-TX), Alan Nunnelee (R-MS), Steven Palazzo (R-MS), Cliff Stearns (R-FL), Jeff Miller (R-FL) and Steve Southerland (R-FL). The caucus's first priority is to convince Congress to give 80 percent of fines collected because of the Deepwater Horizon spill back to the states for economic and environmental recovery efforts. However, there is not yet a consensus on how the money should be distributed and used. Although securing this money is its first priority, the caucus probably will also tackle other issues of relevance to Gulf Coast states.

Alaska Drilling

In June, the House Natural Resources Committee's Subcommittee on Energy and Mineral Resources held a hearing on "Domestic Oil

and Natural Gas: Alaskan Resources, Access and Infrastructure." Committee Chair Doc Hastings (R-WA) and Subcommittee Chair Doug Lamborn (R-CO) asserted the need to use energy resources in Alaska as part of the movement towards less dependency on foreign oil and creation of American jobs. Subcommittee Ranking Member Rush Holt (D-NJ) urged caution, noting that "we need to carefully examine the risk and rewards of drilling in environmentally sensitive and rapidly warming areas of Alaska." He also noted that oil production was up and use down in the lower 48 states, suggesting that drilling in the Arctic is not urgently needed. David Lawrence, from Shell Energy Resources, suggested that slow production in the Arctic was not related to any Obama Administration policies or fundamental opposition toward drilling in the Arctic. Lawrence cited funding shortfalls and poor communication between agencies as the more likely culprits. He urged increased coordination between the Department of Interior and the Environmental Protection Agency and ensuring that these agencies receive the resources they need to "operate and go through these permits in a timely manner." ■

Section News

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projects and demonstrated how engineering analysis tools and calculations are used to satisfy classification society and customer requirements in real-world design projects. Section members reported multiple benefits from the event. The focus of the presentation was tailored to meet the technical interests of the students, such as ROV operations, control systems and ship

component design. As a result, the students were captivated by the information presented, and several students expressed an interest in interning with Oceaneering in the future. Best of all, the trip was great fun! The students would like to publicly extend their thanks to the engineering personnel and shop staff who donated their time and effort to host the presentation, which took place from 6–10 p.m. on a Friday evening, demonstrating the dedication Oceaneering staff bring to the task of educating young engineers. ■

Election 2011: Board of Directors Candidates

Candidates for four positions on the MTS Board of Directors are listed below, along with their biographies and the answers to two questions. The two-year positions run from January 2012 through December 31, 2013.

The election opens August 12 and closes September 9. The winners will be announced at the OCEANS'11 MTS/IEEE Kona Conference Awards Luncheon on September 21.

MTS members with e-mail addresses on record at the Society will be sent an invitation to vote electronically. Those without e-mail addresses will be mailed paper ballots. Starting August 12, MTS members may vote electronically by going to the home page

of the MTS website (www.mtsociety.org) and selecting the "Vote" button. The information below is included in all voting material. To vote either electronically or on paper, you will need to enter your MTS member ID number. If you do not know your number, go online to tinyurl.com/MTSlogin or call (410) 884-5330.

Position Questions:

1. What qualities and experience do you possess that make you a strong candidate for this position?
2. What are one or two key goals you hope to accomplish in this position over the next two years?

Vice President, Education and Research

1. Co-chairs the Professional Committee Board. Serves on the Publications Committee
2. Serves on the Budget and Finance Committee
3. Has direct responsibility for designated Professional Committees
4. Ensures that the Society develops and maintains positive and productive relationships with academic institutions, laboratories, and research institutes; seeks opportunities to excite the next generation through outreach with K through 12 educators and the public
5. Participates in the development of student sections and develops policy as it relates to MTS student programs and scholarships
6. Oversees issues as they relate to marine technology research

2. I'm interested in strengthening partnerships between MTS and research laboratories to explore new data communications modes. We also need to focus on enhancing degree program opportunities in marine technology (as distinct from marine science) to best equip the next generation of problem solvers.



Jill Zande

Jill Zande is the associate director and ROV competition coordinator for the Marine Advanced Technology Education (MATE) Center and the current VP of education and research for MTS. At the MATE Center, Zande's role is to work closely with industry to ensure that educational programs are aligned with workforce needs and to facilitate partnerships among educators, students, employers and working professionals. Zande maintains relationships with well over 100 businesses, research institutions, government agencies and professional societies, and with the 400+ middle schools, high schools, colleges and universities that participate in MATE ROV competitions each year. Zande received her undergraduate degree in biology/minor in marine science from Penn State University and her master's degree in oceanography and coastal sciences from Louisiana State University. She has been with MATE since 1998 and through her position has actively promoted the inclusion of ocean science and technology in formal and informal educational arenas.

1. MTS's commitment to students continues to flourish under my leadership. Student membership has increased by more than 150 percent. There are currently 15 student sections at community colleges and universities across the country and each has access to funds and other resources to support activities and projects. The student leadership program, first piloted in 2009, is now a regularly scheduled part of OCEANS. That program brings together student leaders for information sharing, career and professional development, networking and empowerment. In addition to the Board, I currently serve on the *Journal's* editorial board and as chair of the Monterey Bay Section.

2. First, continue to strengthen benefits for student members, which include building active relationships between student and local MTS sections; ensuring that students are a focus of the Society's efforts to expand its international presence; and



Kate Bosley

Hailing from a dairy farm in upstate N.Y., Dr. Kate Bosley first saw the ocean at 16 on the beaches of Normandy. Lab work as a physics undergrad steered her toward oceanography. With a Secretary of the Navy Office of Naval Research Fellowship, she obtained an M.Eng. in applied physics from Cornell University and a Ph.D. in physical oceanography from Columbia

University. Research cruises to the South Atlantic sealed the deal. In 20 years of working for NOAA's Ocean Service, Bosley has been involved in field studies, predictive model development and oceanographic sensor testing. Bosley received Department of Commerce Bronze Medals for Superior Federal Service for contributions to Physical Oceanographic Real-Time Systems (PORTS®) and developing a forecast model for the Chesapeake Bay. Bosley was named National Ocean Service Employee of the Year for shepherding the operational transition of a bridge clearance monitoring system. Now serving as the chief of operations, she oversees NOS's real-time monitoring systems.

1. I'm a problem solver by nature and particularly drawn to answering questions which have practical applications. In 20 years as a public servant I've been exposed to a number of challenges facing the maritime community. Armed with confidence in the potential of oceanographic research and off-the-charts extroversion, I'm energized by the opportunity to convene groups focused on solving some of the tough commercial, defense and recreational issues of today.

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supporting students as they make the transition to young professionals. Second, reach out to and effectively engage the academic research community, starting with my role as the education and research track chair at Underwater Intervention. The future health of the society depends on the next generation; committing the energy and resources now will ensure that MTS is *the* leading authority and advocate for marine technology.

Vice President, Industry and Technology

1. Co-chairs the Professional Committee Board. Serves on the Publications Committee
2. Serves on the Budget and Finance Committee
3. Has direct responsibility for designated Professional Committees
4. Pursues opportunities for the Society to develop and maintain positive and productive relationships with businesses, companies, corporations, trade associations and other industry organizations
5. Enhances communications and membership within the business and for-profit sector



Leonard R. Pool

Leonard R. Pool is the president and chief executive officer of Sidus Solutions, Inc., an electronics engineering company specializing in the development and manufacture of surveillance equipment for subsea and hazardous areas used in offshore oil and gas operations. His dynamic leadership and innovative engineering have gained him respect and

direct relationships with multinational oil and gas corporations, service providers, universities and governmental organizations. Early leadership training as a Naval ROTC cadet eventually led to a 2nd class petty officer in the U.S. Navy. With an affinity for electronics, he became highly skilled in surface and submarine sonar. After his service, Pool expanded his education, advancing his career in leadership positions of medical electronics before returning to defense electronics, maritime navigation and communication equipment. Pool has spent the past 16 years working in deepwater oil and gas applications.

1. As a managing entrepreneur, my leadership strategy is focused on long-term durability, growth, customer satisfaction and innovation, key fundamentals applicable for the future of the Society. I have been accountable for budgets and managed compliances for both internal and external operations. An MTS member for 14+ years, I have served the San Diego Section Board since 2003, chaired several events, held vice-chair from 2004–2005, and section chair from 2005–2007. My involvement with students during OCEANS'03 imprinted the growing need for marine engineers and the Society's role. I am currently the OCEANS'13 accommodations chair as well as an exhibitor.

2. Creating high-performing members will allow achievement and satisfy our customers. My two most prevalent goals are to improve member benefits by reworking recruitment and retention

and enhancing communications with the Society. I believe the leading problem facing the Society is member relations and benefits. To produce growth, I intend to solicit new programs that offer broader incentives for both individual and corporate members. I will seek college and high school recruitment, as well as involvement by new workers of corporate members. With the involvement of active young engineers, I hope to illustrate the benefits for having employees who belong to MTS.



Ray Toll

Ray Toll has worked in marine technology since the 1970s, including 26 years in Naval Oceanography in technical/leadership positions such as commanding officer of the Navy's Center in San Diego. He currently works for SAIC as NOAA account manager for the earth science thrust in air, water and climate. He works with NOAA,

17 federal partners and industry to advance the Ocean Commission's thrust for a national integrated ocean observing system at federal and regional levels. He currently serves on the Gulf of Mexico Regional Association board and as an SAIC rep to the Consortium for Ocean Leadership. He has been a member of the Ocean Resources and Research Advisory Panel, and the Interagency Working Group for Ocean Observations. In 2006 he formed Hampton Roads' first MTS section and is leading OCEANS'12.

1. I have focused on a career in oceanography, meteorology and climate, pursuing some of our grand challenges, always keyed on how societal needs and specific user requirements are addressed. I have had over 30 years' experience, spanning all aspects of the earth science community from both the Navy as a user and provider of ocean products and services, and now in the private sector with SAIC. I have tried to convey leadership grounded by humility and fierce resolve. I believe people come first, then understanding the process you are supporting, followed lastly by products.

2. I believe that the oceans are one of the last frontiers, and it is incumbent that this generation sets the example of stewardship and discovery. We need a national infrastructure for ocean observations that couples atmospheric observations to advance such national priorities as marine spatial planning and to more effectively address catastrophic events. To help the 18 federal partners and industry advance together in this, I believe MTS can become incredibly important by providing an appropriate venue that is agency/program neutral and focuses on an operational system that can properly address user/regional/national/global needs.

Vice President, Publications

1. Responsible for ensuring that Society publications meet the highest professional standards
2. Develops and promulgate policy regarding advertising for the journal and newsletter
3. Oversees marketing plans for publications
4. Oversees development, policy and direction of new publication venues

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5. Chairs Publications Committee
6. Participates in all Editorial Board functions
7. Chairs ad-hoc committees as they relate to publications
8. Serves on the Budget and Finance Committee



Fraser Dalgleish

Fraser Dalgleish is an assistant research professor with Harbor Branch Oceanographic Institute at Florida Atlantic University. He holds a B.Eng. in electronics and electrical engineering from The University of Edinburgh (U.K.), an M.Sc. in ocean engineering and Ph.D in ocean engineering, both from Cranfield University (U.K.). He joined Harbor

Branch almost seven years ago and established the Ocean Visibility and Optics Laboratory in 2006. Over the last 10 years his research and development activities have focused on the application of lasers and unmanned marine vehicles to develop new undersea robotic imaging, sensing and networking capabilities. The longer term goal of this work is to further develop and apply these novel approaches to operational oceanography to provide otherwise unobtainable data products and other new capabilities to marine scientists. For the last two years he has been chair for the Underwater Imaging Committee of the Marine Technology Society.

1. As an ocean engineering researcher and lab director, my primary role is in developing and leading innovative research and education programs in the ocean science and technology disciplines. Successful initiatives must respond to well-defined scientific and operational needs relevant to today's oceanography, with publication of significant results and findings an important component of my job function. Over the last 10 years I have developed a broad awareness of the big issues facing our oceans, and I firmly believe I can guide the *Marine Technology Society Journal* in a direction which encompasses the most relevant scientific issues and technological developments of interest to its readers.

2. My broad goal is to sustain and enhance the relevance and quality of *Marine Technology Society Journal* issues and publications. I believe that this is critical to the mission of MTS and will create improved and more widespread understanding of the importance of the role of marine technology in helping solve the big scientific questions regarding the health of our oceans and planet.



Fred Klein

An MTS member since 1971, Fred Klein has been a student of the oceans all his life. He found successes in coordination and integration of teams to solve oceanography problems. He was in various U.S. Navy meteorology and oceanography leadership roles throughout his career, including serving at NOAA. He became the executive director of

the 1998 MTS/IEEE Oceans Community Conference and co-chair

of the IEEE/MTS 2005 Oceans Conference in Washington D.C. At Noblis, Inc., he is currently working part time on NOAA ocean requirements, planning and integration.

1. The issues I work gravitate towards moving programs and initiatives ahead through leadership and teaming. I developed ocean projects in program management and acquisition and have written several published papers. I value integration and energies directed toward bringing science and policy together to move the "One Ocean" community forward in MTS. My experience and long-term knowledge of the ocean operations and research community will ensure successes in outreach and publications.

2. MTS publications are the face of the organization and should be a vanguard for new and innovative technologies. I will work towards increases of both capability and success through smart policies and the highest possible standards. I want to contribute in growing the MTS footprint in maritime technologies through outstanding outreach, education and publication.



Donna Kocak

Donna Kocak has over 22 years' experience in the ocean engineering field and serves as an advanced program engineer in HARRIS CapRock Communications, Maritime Solutions Division. She earned an M.B.A. from UF, both an M.S. and B.S. in computer science from UCF, and in December she will graduate with an M.S. in professional engineering management from UCF.

From 2004–2008, Kocak served as chair of the Underwater Imaging Committee, and in 2008 she founded and now serves as chair of the Society's Committee on Ocean Observing Systems (OOS). In 2009, the OOS Committee was bestowed the MTS Outstanding Committee Award for its ambition and early success in advancing the awareness, understanding and application of ocean observing systems. Kocak has been a frequent contributor to *Currents* and a member of the *Journal's* Editorial Board since 2008. In 2010 she was elected senior member of IEEE's Oceanic Engineering Society.

1. I look forward to bringing enthusiasm, dedication and experience to the publications team and MTS Board! I have been a member of MTS since the mid-1990s, and an active member of the Council since 2004. My publication experience (40) in books, journals, trade magazines and conference proceedings (including annual worldwide updates of OOS news contributed by our membership) and frequent contributions to *Currents* strengthen my candidacy. In addition, I work well with (and have great respect for) the *Journal's* managing editor, having served as guest editor of two special issues, including the recent July/August *Biometrics and Marine Technology*.

2. My goals are to expand the reach of our publications and have more of an impact in public affairs and public relations.

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This will require me to work closely with the VP of government and public affairs. Together we can strategize and carry out a plan that delivers timely and impartial information based on leading/bleeding-edge technologies to the marine community and our government leaders that solves problems and leads to better decision-making. Additionally, I will work closely with the *Journal's* editor and managing editor to ensure we continue to produce high-quality products for our membership.

Vice President, Government and Public Affairs

1. Co-chairs the Professional Committee Board. Serve on the Publications Committee
2. Serves on the Budget and Finance Committee
3. Has direct responsibility for designated Professional Committees
4. Pursues opportunities for the Society to develop and maintain positive and productive relationships with news media, governmental entities, the military services, and other relevant organizations
5. Oversees policy and reviews public releases by Society officers and spokespersons as related to government and public affairs
6. Enhances communications and membership within the government sector and the military
7. With the president, represents the organization to the media, on governmental or nongovernmental organizations and committees



Justin Manley

Justin Manley has worked with marine technology since 1990: for his family marine salvage business, as a principal in the development of autonomous vehicles at MIT and as a consultant to the federal government, notably NOAA's Office of Ocean Exploration and Research. He led the scientific and commercial business for

Liquid Robotics, rapidly expanding opportunities for the company's energy-harvesting unmanned surface vehicle, the Wave Glider. In July 2011 he joined Teledyne Benthos as senior director of business development where he is responsible for managing and advancing a diverse product line, including deep ocean instrument housings, geophysical survey systems, remotely operated vehicles, undersea locators, acoustic releases and the industry-leading Telesonar acoustic modems. He has developed and deployed marine technology in academic, public and private sectors and published widely on marine technology topics, especially those that cross technology/policy lines. He earned degrees (S.M. and S.B. ocean engineering, S.B. history) at MIT.

1. I have been vice president of government and public affairs for the past two years and have contributed to MTS in committee, publication and conference leadership roles. I possess experience and institutional knowledge necessary to further advance MTS goals. In the area of government and public

affairs MTS benefits from collaboration with other societies and peer organizations where I maintain strong working relationships. I have personal and professional ties to both U.S. and international government agencies that are fundamental to my success in this position. I am committed to effective interaction between the government/public sphere and marine science and technology.

2. My primary goal is to ensure strong, and direct, connections between MTS government and public affairs activities and our members. To date we have significantly raised our profile with government agencies and legislators. During this effort I ensured that staff/leadership interaction with government was guided by the knowledge and experience of working marine professionals. For my second term I will improve our public affairs efforts. In particular, in the broader public arena, I will increase MTS exposure to media outlets and educate the public about the vital contributions of marine science and technology, again relying upon individual members for input.



Rusty Mirick

Rusty Mirick is an ordnance engineer with Booz Allen Hamilton, Inc., supporting clients in the federal government for the past three years. He has contributed to solving systems engineering challenges, delivering an array of work products by applying seasoned consulting skills, demonstrating accountability

for results, team task sequencing and adherence to financial standards. Prior to his current position, he was on active duty as a Navy diving and salvage officer qualified in saturation diving, submarine rescue, and underwater ship husbandry and demolition, and attained the rank of captain. Mirick earned a master of science degree in engineering acoustics from the Naval Postgraduate School (Monterey, Calif.), an M.S. in national security strategy from the National War College (Washington, D.C.), and graduate certificate in legislative studies from Georgetown University (D.C.). He has been a member of MTS for 25 years and served as chair of the Washington, D.C., Section 2009–2010.

1. I have a demonstrated record of accomplishment in defense organizations undergoing transformational change, requiring proven progressive leadership, improving program quality, increasing organizational output and enhancing customer satisfaction.

2. I see much potential across the membership of our organization, so my top goal is to link members with resources in order to make steady progress with the MTS Strategic Plan. Contributing actions include continuing to develop appropriate government relationships and branding MTS as the "go to" for technology among decision makers in the public sector. One example of a next step is increasing MTS presence and impact on the annual Capitol Hill Ocean Week. ■

OTC Attendance Up 8 Percent

Attendance at the 2011 Offshore Technology Conference (OTC) reached a 29-year high of 78,150, up 8 percent from last year, as offshore energy industry experts from around the world came together at the world's largest event for offshore resources development. OTC was held May 2–5 at Reliant Park in Houston. Attendance surpassed the 2010 total of 72,025, and the sold-out exhibition was the largest since 1982 at 603,000 square feet, up from 568,000 square feet in 2010. The event had 2,520 companies from 40 countries, including 306 new exhibitors in 2011, and added exhibitors from Egypt, Hong Kong, Indonesia and the Philippines. ■



MTS President Jerry Boatman stopped by the MTS booth at OTC where MTS Membership Manager Jeanne Glover was signing up new members.



As he does every year, Sandor Karpathy (far right) brought the high school students he was leading through exhibits to the MTS booth.

Christiana C. Anyika (center) brought Oby Chuma Ugbo (left) and Ifeoma B. Aeche (right) to the booth to join MTS. All three work for the Nigerian Maritime Administration and Safety Agency.



Xodus Joins MTS

Welcome to new business member **Xodus Group**. The company is an independent, international energy consultancy providing an integrated package of solutions for its clients as they seek to overcome the challenges they face throughout the life of their assets. From conceptual definition, through design and construction and into operation, Xodus provides the innovative thinking needed to maximize the return on customers' investments. Xodus Group has recently opened a new office in Houston to service the Americas. Focus

in this region will be on providing integrated field development services through combining its subsea, process and facilities, and its flow assurance expertise. **Web link:** www.xodusgroup.com

Welcome SIMCorp

SIMCorp Marine Environmental, Inc., of St. Stephen, New Brunswick, Canada, has joined MTS as a new business member. The company provides the aquaculture and fisheries industries, as well as all levels of government agencies, with a wide range of short- and long-term contract management services.

Depending on the client's particular needs, SIMCorp provides project development and management, compliance strategies and implementation plans, and compliance management services. **Web link:** www.simcorp.ca

Kudos to SURF Subsea

Congratulations to MTS member **SURF Subsea**, which recently marked its one-year anniversary of incorporation, as well as the completion of a tree setting project for E&P company LLOG Exploration. Created in May 2010, SURF Subsea was formed to be a worldwide provider of deep-

water construction services, including the installation and commissioning of subsea infrastructure. **Web link:** www.surfsubsea.com

Phoenix Succeeds

MTS member **Phoenix International Holdings** of Largo, Md., successfully located and recovered both black boxes from Air France Flight 447. The recoveries took place in 3,900 meters of water (msw) and were made possible using the Phoenix-designed-and-operated remotely operated vehicle Remora. Remora ROVs

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are specifically designed to work in water depths down to 6,000 msw. Remora located the flight data recorder (FDR) within 12 hours on its first dive. Unfortunately, the critical memory unit had separated from the chassis of the FDR. An intensive and methodical visual survey of the sea floor was then initiated in search of the proverbial needle in the haystack. With Remora operating around the clock, the unit was ultimately found and brought to the surface. Remora returned to the debris field to search for the cockpit voice recorder (CVR). The next day, the intact CVR was located and brought to the deck of *Ile de Sein*, the Alcatel-Lucent cable ship supporting the recovery project. In other news, the U.S. Navy is conducting manned certification of the bespoke Saturation Fly Away Diving System (SAT FADS) designed and built by Phoenix International. Delivered a year ago to the Navy's Experimental Diving Unit in Panama City, Fla., the SAT FADS successfully completed an extended, manned, pier-side test to its design depth of 1,000 feet. This is one step in a required progression of tests that will eventually lead to its operational use. SAT FADS will provide a critical saturation diving capability to support Navy salvage and recovery operations around the world. SAT FADS will support six divers to depths of 1,000 feet sea water for 30 days. The entire system requires 40 feet by 70 feet of deck space and consists of five major components: a main deck decompression chamber, a three-man diving bell, the bell handling system, a control van, and two auxiliary support equipment vans. Living quarters are

located in the decompression chamber. **Web link:** www.phnx-international.com

Hydroid Passes CDR

MTS member **Hydroid** has passed Critical Design Review to provide Littoral Battlespace Sensing Autonomous Undersea Vehicles and associated technologies to the Space and Naval Warfare Systems Command. The Critical Design Review was held to verify that Hydroid is in compliance with design maturity requirements and that detailed design preparations are in place to proceed with system fabrication, demonstration and testing. The Navy's lead evaluator noted that the program is progressing in a manner that will be most beneficial to the Navy and enhance the characterization of the battlespace essential to the warfare areas. The recognition of CDR is the next milestone in Hydroid's contract to provide SPAWAR with REMUS 600 AUVs equipped with technologies for meteorological and oceanographic data collection, as well as technologies for processing and disseminating these data. The ultimate end user for the contract is the Naval Oceanographic Office. Hydroid's REMUS 100 AUV was used by the Royal Netherlands Navy to locate a World War I German submarine U-106, which had been missing since October 1917. The vessel was located off the coast of Ter-schelling in the Netherlands. **Web link:** www.km.kongsberg.com/hydroid

VideoRay Sale

The Ottawa County Sheriff's Office Dive Unit in West Olive, Mich., has purchased from MTS member Video Ray the VideoRay Pro 4 PS ROV System (a system specifically configured for underwater port security

and law enforcement applications) for its dive unit. The VideoRay ROV configuration was delivered with the Pro 4 Submersible (depth rated to 1,000 feet and weighing around 13 pounds without accessories); Pro 4 Control Panel, which integrates all of the accessory software; ROV software and controls; viewing monitors; and hand controller, all in one lightweight Pelican 1550 hard case. Also included were a manipulator arm for evidence (and sometimes victim) retrieval; an integrated 15-inch daylight viewable video monitor, and 630 feet of segmented plug-and-play tether. **Web link:** www.videoray.com

Search for Silver

MTS member **Odyssey Marine Exploration** has executed a charter agreement to use the Russian Research Vessel *Yuzhmorgeologiya* to conduct search operations for the SS *Gairsoppa*. The *Gairsoppa* was torpedoed by a German U-Boat in February 1941 while enlisted in the service of the United Kingdom Ministry of War Transport. Contemporary research and official documents indicate that the ship was carrying as much as 7 million ounces of silver. In 2010, the U.K. Department for Transport awarded Odyssey, through a competitive bid, the exclusive salvage contract for the cargo of the SS *Gairsoppa*. Under the salvage contract, Odyssey will retain 80 percent of the bullion value of the cargo after expenses. Revenue for Odyssey's first quarter 2011 was \$2.1 million, compared to \$2.9 million in the first quarter 2010. The company also reported a net loss of \$5.2 million, compared to a net loss of \$3.1 million in 2010. Included in the net loss was a non-cash expense of \$1.3 million, or

\$0.02 per share, to reflect the change in fair value of the derivatives related to the issuance of Series G convertible preferred stock caused primarily by the increase in Odyssey share price during the period. The net loss per share for the first quarter was \$0.09, compared to a net loss of \$0.05 per share in the first quarter 2010. **Web link:** www.shipwreck.net

Biggest Liftboat

PaxOcean Engineering Zhoushan, Singapore, and The Livingston Corp., Boerne, Texas, have signed a letter of intent to build the world's largest liftboat, with 415 feet of legs, an open deck area of 18,300 square feet and a net deck load capacity of 1,654 tons. **Web link:** levingstonoffshore.com

OceanGate Find

Using a five-passenger submarine and a remotely operated vehicle, a team of explorers has discovered a historic Mosquito Fleet Steamer in Elliott Bay near Seattle that they believe is the SS *Dix*, which sank in 1906. The sinking is considered the worst maritime disaster in Puget Sound. MTS member **OceanGate**, a submarine exploration company, provided the ROV and an experienced crew and on March 19 this year, the first video images of the wreck were recorded along with high-definition sonar. OceanGate's five-person submarine *Antipodes* made three dives totaling 11 man-hours on the newly discovered wreck, which sits at a depth of 500 feet. Additional submarine dives are planned to gather more information and images to document the wreck using the latest 3-D sonar technology. **Web link:** www.opentheoceans.com

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UPCOMING OPPORTUNITIES FOR MTS BUSINESS MEMBERS



Oceans in Action
August 22-23, 2011
Imperial Palace Casino
Biloxi, Mississippi

This MTS Gulf Coast Section-sponsored event will demonstrate how marine science, technology, engineering, and products/services converge to support the solutions to real-world issues around the globe, including piracy,

If your company supports the applied operational aspects of marine technology, this is your opportunity to showcase your products and services.

disaster monitoring and recovery, prediction and forecast of ocean properties, coastal restoration, hypoxia, harmful algal blooms, fisheries, and more!

EXHIBITION AND SPONSORSHIP OPPORTUNITY

Space available: 10 x 10
Space cost: \$500.
Anticipated attendance: 200+
Sponsorship Opportunities: begin at \$500.
Please call for details.

Sponsors Include:



For exhibit information, contact:
Mary Beth Loutinsky
mbloutinsky@gmail.com
703-629-3810



Oceans of Opportunity: International Cooperation and Partnership Across the Pacific

OCEANS'11 MTS/IEEE KONA
Hilton Waikoloa Village
Kona, Hawaii
September 19-22, 2011

The OCEANS Conference, jointly sponsored by the Marine Technology Society (MTS) and the Oceanic Engineering Society of the Institute of Electrical and Electronic Engineers (IEEE/OES), is a major international forum for scientists, engineers, and responsible ocean users to present the latest research results, ideas, developments, and applications in Oceanic Engineering and Marine Technology.

MTS MEMBER COMPANY EXCLUSIVE OPPORTUNITIES

MTS will once again spearhead a number of activities and programs designed to maximize attendee visits to the Exhibition Area.

All MTS member companies exhibiting at OCEANS'11 are encouraged to join in the fun.

MTS member companies exhibiting at Oceans'11 will be contacted about program details.

For immediate questions, please contact Mary Beth Loutinsky at:
mbloutinsky@gmail.com

UPCOMING OPPORTUNITIES FOR MTS BUSINESS MEMBERS

*If your U.S. company is
(or considering) exhibiting at
Oceanology International 2012...*

MTS will be sponsoring a U.S. Pavilion at this Exhibition, and is making an assortment of unique size spaces available to MTS member companies.

This is your opportunity to join nearly 7,000 unique attendees and 550 world-leading suppliers at a world-class exhibition, now made more affordable through MTS.

Plus—each company also has the opportunity to join MTS in sponsoring a U.S. reception for attendees! Each sponsor will have their logo placed on all promotional materials, placed strategically throughout the pavilion space during the reception, and their company name listed in MTS' *Currents* newsletter, as well as in press releases. Each company will be provided with invitations for distribution to customers/contacts.

Among the booth options available is a kiosk (pictured). If you are already exhibiting, kiosk space can be used to direct traffic to your booth located anywhere on the floor.



Kiosks may also provide your company a presence while your representative walks the floor. **MTS will replenish your materials from your supplies, stored in the lower cupboard.**

Contact Mary Beth Loutinsky at mbloutinsky@gmail.com for details.

International Marine Forensics Symposium

April 3 - 5, 2012
National Harbor, MD

Keynote speaker James Cameron (confirmed).

His undersea documentaries include *Expedition Bismarck*, *Ghosts of the Abyss*, *Volcanoes of the Deep Sea*, *Aliens of the Deep* and the *Last Mysteries of the Titanic*.



The Symposium is sponsored by the Marine Technology Society, American Society of Naval Engineers, Society of Naval Architects & Marine Engineers.

This symposium will bring together marine professionals and historians to exchange information on historic marine losses, on marine forensic investigation processes and tools, and on case studies where causes of failures and losses have been determined or are under continued study. The Symposium will report on the latest research and understanding of the **Titanic**, **Lusitania**, **Edmund Fitzgerald**, the **Monitor** and **Passaic**, **HMS Prince of Wales**, **Bismarck**, **HMS Hood**, and the **Andrea Doria**.

EXHIBITION AND SPONSORSHIP OPPORTUNITY

(contact mbloutinsky@gmail.com)

The International Marine Forensics Symposium will be held at the Gaylord Hotel, National Harbor, MD. **Exhibition space** is available at \$650 for a 10 x 10 foot space. **Freeman Exhibit Services** will handle the show decorating. A number of **Sponsorship Opportunities** are also available to maximize your impact with Symposium attendees.

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Sneaking Robot

ReconRobotics has signed a cooperative research and development agreement with Space and Naval Warfare Systems Center Pacific to jointly develop a Recon Scout® Throwbot® reconnaissance robot with magnetized wheels that will, among other things, enable the robot to climb up and over the hull of a ship. ReconRobotics believes that this concept could evolve into a new micro-robot platform that would have immediate applications in maritime piracy interdiction and in protecting the lives of shipboard military personnel. The marsupial robot deployment system enables an operator of a large robot to automatically transport and deploy a smaller robot down-range using a customized, ejectable sabot. **Web link:** www.reconrobotics.com

TE SubCom Cable

Georgian Telecommunications provider Caucasus Online and MTS member **TE SubCom** (SubCom) signed a contract to upgrade the Caucasus undersea cable system. The upgrade of the almost 1,200-kilometer system, which provides high bandwidth connectivity between Poti, Georgia and Balchik, Bulgaria, will be conducted in stages over the next several years. SubCom's flexible upgrade solution will enable Caucasus Online to enhance its services, as needed, through boosted international capacity. The Caucasus Cable System comprises a two-fiber-pair point-to-point link connecting the main Georgian port of Poti with the Bulgarian coastal city of Balchik. It has an ultimate design capacity of 1.2 terabits per second. A staged upgrade plan allows for

the addition of 10-gigabits-per-second wavelengths, using technology installed in the original system. Global Nexus Telecommunications and SubCom have signed a supply contract for phase one of the Global Nexus Cable Systems. Phase one of the Global Nexus network will provide low-latency, resilient and diverse, ultra-high-capacity rates between Canada and the Bahamas, with onward connectivity to the U.S.A., and Latin and South America, serving as a catalyst to mesh hemispheric and regional networks. The system will be initially deployed with advanced 40-gigabits transmission technology and is designed to be compatible with SubCom's 100-gigabits transmission equipment. The system itself will be delivered under a 19-month program. **Web link:** www.tycotelecom.com

Schilling Sells to DOF

MTS member **Schilling Robotics** has sold two ROV systems to subsea service company and MTS member **DOF Subsea**. The award is for one 200-horsepower UHD™ ROV system and one 150-horsepower HD™ ROV system. Deliveries of the ROVs are scheduled for the third quarter of 2011. Schilling Robotics received an order for eight Heavy-Duty™ ROV systems from integrated offshore oil and gas solutions provider EMAS, the operating arm of Ezra Holdings. The HD systems will be rated for 4,000 meters and will be supplied with 850-meter capacity tether management systems. EMAS will install the HD ROV systems onboard four of its dedicated deepwater vessels in support of the company's expanding international offshore construction business. Schilling Robotics received an order for a new 200-shp, 4,000-meter rated

UHD ROV system from Global Industries for delivery in the third quarter of 2011. The UHD system will be supplied with a 1,500-meter capacity XE™ TMS, launch-and-recovery system and topside controls equipment. C-Innovation has placed a contract for multiple Schilling ROV systems in support of its expanding international operations. This contract includes the supply of both HD and UHD work-class ROV systems, which will be deployed globally, including to Brazil and Singapore. **Web links:** www.schilling.com, www.dofsubsea.com

Shearable Drill Collar

Radoil has successfully completed an oil industry first by designing and producing a shearable drill collar. This is a significant step forward in drilling safety as it provides a replacement for the traditional un-shearable solid steel drill collars. The new drill collar is a patent-pending design that includes an outer 6.75-inch, 0.5-inch wall shell and an inner 2.157-inch, 0.109-inch wall bore pipe with the interstitial space filled with lead. The shearable drill collar has a weight of 141.9 pounds per foot versus 108.3 pounds per foot with solid steel drill collars. The drill collar's lead-filled design makes it shearable while providing the desired weight and stiffness for normal drilling operations. **Web link:** www.radoil.com

Subsea 7's AIV

MTS member **Subsea 7** has completed the design and build of the first commercial autonomous inspection vehicles (AIVs). Subsea 7 plans to develop a series of AIVs, initially capable of general visual inspection through to fully capable work-class-sized intervention vehicles.

A combined project team comprising hardware developers and operational personnel from Subsea 7 and Seebyte, a Scotland-based software developer for the autonomous robotics market, have been working to deliver the first vehicle. Following completion of extensive in-water testing and capability development, the first commercial AIV is expected to be available in late 2011. The vehicle is fully autonomous and can operate for a 24-hour period on a single charge of its specifically designed lithium-ion batteries. **Web link:** www.subsea7.com

InterMoor Contract

MTS member **InterMoor** has been awarded a contract for the installation of the drilling and production conductors for the Papa Terra project, for which Petrobras is operator and Chevron is non-operator. InterMoor will be responsible for the design, procurement, fabrication and installation of 15 conductors for the project. All 15 conductors are 36 inches in diameter. **Web link:** www.intermoor.com

DT-X Keeps on Ticking

A DT-X echosounder from MTS member **BioSonics** was in fine working order after being buried in mud following devastating floods in Queensland, Australia. A Queensland fisheries biologist returned to his office to discover thousands of dollars of electronics and scientific research equipment completely submerged, including the DT-X echosounder. BioSonics advised him to thoroughly rinse the unit and allow it to air dry. The next day, he turned it on and was relieved to find it worked. Southern Illinois University research

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is conducting hydroacoustic surveys of the Illinois River using a BioSonics DT-X split-beam echosounder to estimate the density, size distribution and biomass of Asian carp. The information will be incorporated into GIS to create maps showing biomass and distribution of Asian carp overlaid onto depth contours and substrate classifications. These data will help to identify hot-spots for focusing commercial fishing efforts. The University of Washington, working with NOAA's Northwest Fisheries Science Center, recently retrieved a BioSonics DT-X SUB split beam echosounder after a one-month deployment in northern Admiralty Inlet, Wash. The programmable system automatically collected and logged water column backscatter data from split beam transducers, collecting data every other hour in a 10-percent operational duty cycle, alternating between pinging and sleep modes, to maximize temporal coverage and battery life. The study location is a proposed Snohomish Public Utility District tidal energy demonstration project site. The data collected concerned fish abundance, distribution and behavior. **Web link:** www.biosonics.com

OceanWorks Alliance

MTS member **OceanWorks International** and the Harris Corporation have signed a strategic alliance agreement to jointly pursue opportunities related to cabled ocean observing, subsea networking, and subsea power distribution equipment and services. OceanWorks and Harris CapRock Communications have developed a modular seafloor communications and power-distribution network that can

be deployed in water depths up to 3,000 meters. The customizable system provides telemetry, control and power distribution infrastructure that allows customers to accomplish a wide range of environmental monitoring, infrastructure monitoring and distributed control solutions. **Web link:** www.oceanworks.com

DOER ROV

Ocean Innovations has supplied a mini work-class ROV to Scripps Institution of Oceanography. The H2000 ROV, manufactured by MTS member **DOER Marine**, has powerful hydraulic thrusters and high bandwidth fiber optic cable. The vehicle, with a 2,000-meter depth rating, 160-pound payload capacity and 327 pounds of forward thrust, was equipped with a five-function DOER SeaMantis manipulator, powerful LED lights, three video cameras, and a multi-beam sonar. Scripps intends to use the vehicle on its fleet of ocean-going vessels for retrieving lost instruments and collecting samples, and other scientific tasks. A key feature for Scripps is the vehicle's instrument manifold that is pre-wired for RS-232, RS-485 and Ethernet, thus making it easy to integrate additional sensors. **Web link:** www.doer-marine.com

Venture Capital Funds

MTS member **Liquid Robotics**, which has a robot-based technology for measuring ocean data, has won a \$22 million investment from VantagePoint Capital Partners and Schlumberger, the world's largest oilfield services firm. The investment, the company's first from venture capital, will help Liquid Robotics expand its business of deploying unmanned floating devices to remote parts of the ocean to

measure things like oil spills for energy companies or fish populations for fisheries. **Web link:** liquidr.com

MakaiLay Sale

MTS member **Makai** has sold its latest version (4.1) of MakaiLay with AutoSlack to IT International Telecom Marine SRL for the cable vessel *IT Intrepid*. MakaiLay is finite-segment 3-D cable installation software that provides cable installers with the ability to lay submarine cables with high placement accuracy and reliability. It calculates and displays, in near real-time, the surface and seafloor tension of the cable, the layback distance of the cable, the cable slack and touchdown coordinates on the seafloor, and many other parameters, which allows cable engineers to monitor and control the cable installation process. Using MakaiLay, engineers can create a new ship plan on the fly to compensate for the effect of ocean currents in order to maintain a high placement accuracy of the cable on the seafloor. **Web link:** www.makai.com

New UTEC Office

UTEC Survey has opened a new office at 27 Sagona Avenue, Mount Pearl, Newfoundland, Canada. The office will complement UTEC Survey's Calgary office, while giving the company a stronger presence in eastern Canada. Cory Goodyear will head the new operational center as the regional manager of Atlantic Canada. UTEC has taken delivery of a deep-push seabed Cone Penetration Testing (CPT) unit to support its Asia Pacific, Middle East and Australian geotechnical operations. Manufactured by Netherlands-based A.P. van den Berg, the Roson CPT unit includes a recently upgraded 75-kil-

onewton twin-drive thrust for deeper seabed soil investigations. Offshore applications include pre-installation analysis for oil and gas construction, civil works, subsea telecommunications, and renewable energy infrastructures in both shallow and deep water environments. **Web link:** www.utecsurvey.com

NOAA Pacific Base

West Coast Contractors has completed a significant portion of its two-year project to build the new ship pier and small vessel dock in Newport, Ore., for the National Oceanic and Atmospheric Administration's Marine Operation Center-Pacific. The nearly \$30 million joint venture is between West Coast Contractors and Andersen Construction. The center provides logistical, engineering, electronics, maintenance and administrative support for the nine ships in NOAA's Pacific fleet, including vessels homeported in Alaska and Hawaii.

Sentinel Sale

MTS member **Sonardyne International** has won a multi-million dollar contract from systems integrator Westminster International for the supply of a multiple-head, networked Sentinel Intruder Detection System. This represents one of the largest orders for Sentinel, which will be used as part of a waterside infrastructure security system in the Middle East. **Web link:** www.sonardyne.com

New System

Measurement Institute of the U.K.'s National Physical Laboratory has developed a technique to create a computer image of sound waves emerging from a speaker, by measuring how the audio vibrations affect a laser beam. ■

Dynamic Positioning in Ice: Challenges and Solutions

The National Research Council of Canada's Institute for Ocean Technology, which is an MTS member, has launched a research project to address crucial aspects of the problem of dynamic positioning in ice. DP operations in ice are an acknowledged challenge, and proposed oil and gas exploration in the Arctic has drawn attention to the need for new technologies to operate drilling vessels in pack ice. The issues to be addressed include DP control system tuning and design, prediction and estimation of ice loads, DP station keeping capability in ice and rapid-acting thruster designs.

Each of the four research objectives will be supported by the institute's major facilities, which include its Ice Tank— at 90 meters it is the world's longest refrigerated towing tank—and its Offshore Engineering Basin. The institute has its own model DP system, which has been developed and refined over a 10-year period. In fact, the institute is the only facility to have a free-running (non-wired) DP system. It consists of azimuthing thruster units, motion control systems, optical tracking that provides feedback on position and heading, and a control computer that executes real-time, closed-loop DP code.

Industry partners who wish to collaborate on the challenges related to DP in ice are invited to contact MTS member **Dr. Jim Millan**, research project manager, at jim.millan@nrc-cnrc.gc.ca. ■



A model scale drilling platform undergoes dynamic positioning tests in ice at the world's longest ice tank, located at the NRC Institute for Ocean Technology.

GOM Research

The details of the \$500 million BP-sponsored Gulf of Mexico Research Initiative (GRI) were unveiled by Dr. Rita Colwell, chair of the GRI Research Board. The goal of this 10-year research initiative is to study the effects of the Deepwater Horizon incident to improve society's ability to understand, respond to, and mitigate the impacts of petroleum pollution on marine ecosystems, with an emphasis on the Gulf of Mexico. The scientific direction and funding decisions of the GRI will be made by the 20-member Research Board. Half of the board was appointed by BP and the other half was nominated by the Gulf states—with all members being highly respected scientists. The GRI will be administered by the Gulf Research Initiative Administrative Unit, an internal division of the Gulf of Mexico Alliance (GOMA). MTS member **The Consortium for Ocean Leadership** has

been contracted by GOMA to help manage the program.

Web link: www.gulfresearchinitiative.org

Hunt for Wrecks

NOAA is leading a summer research expedition to locate and study World War II shipwrecks sunk in 1942 off North Carolina during the Battle of the Atlantic, specifically the Battle of Convoy KS-520. The shipwrecks are located in an area known as the "Graveyard of the Atlantic," which includes sunken vessels from U.S. and British naval fleets, merchant ships and German U-boats. The survey will be conducted in four phases aboard the ONMS Research Vessel *8501*: (1) a wide-area survey in water depths of 100 to 1,500 feet. Advanced remote sensing technologies, including an autonomous underwater vehicle and multiple sonar systems, will be used to attempt to locate undiscovered wreck sites.

(2) A more targeted survey will be conducted during the second phase, relying on an AUV and multibeam sonar systems to produce 3-D images of wreck sites. Scientists also will be investigating potential fuel leaks at the sites. (3) Scientists will return to selected targets identified in the wide-area survey and use a 3-D scanner to create highly detailed models of the wrecks. (4) A remotely operated vehicle system and high-definition 3-D video cameras will be used to create photomosaics of shipwreck sites for research, education and outreach purposes.

Heavy Lifting Solution

A marine operations technician with MTS member **Monterey Bay Aquarium Research Institute** has developed a new device called a "line elevator" that will make lifting heavy objects from the seafloor easier. The line elevator is released from a

ship and allowed to sink to the seafloor, after which an ROV is launched from the ship. The ROV moves the line elevator close to the instrument and attaches a lifting line from the elevator to the instrument. After the ROV returns to the ship, an acoustic signal is sent down to the line elevator. The elevator then releases a "drop weight" that is attached to the lifting line. Now positively buoyant, the elevator begins to rise toward the surface, spooling out line as it goes. After the elevator reaches the surface, the ship's crew lifts the elevator and the drop weight out of the water and then attaches the lifting line to a winch. Using the lifting line, the ship's crew lifts the heavy instrument off the seafloor and on to the ship.

Mapping Expedition

In June, a multi-agency team of ocean scientists sailed on the NOAA ship *Nancy Foster* to

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an area 100 miles off the coast of Virginia and Maryland. They used sonar to generate 3-D bathymetric maps of deep-water canyons, which will allow them to identify sensitive biological habitats, coral communities and archeological sites such as shipwrecks and other historically significant sites. The expedition was a cooperative venture by the Bureau of Ocean Energy, Regulation and Enforcement (BOEMRE), NOAA and the U.S. Geological Survey. The expedition was the first of several in a joint-agency partnership over the next three years. Total funding for the three-year study is approximately \$9 million, shared equally among the three agencies.

CO₂ at New High

Energy-related carbon-dioxide emissions in 2010 were the highest in history, according to the latest estimates by the International Energy Agency (IEA). After a dip in 2009 caused by the global financial crisis, emissions are estimated to have climbed to a record 30.6 gigatonnes (Gt), a 5 percent jump from the previous record year in 2008, when levels reached 29.3 Gt. In addition, the IEA has estimated that 80 percent of projected emissions from the power sector in 2020 are already locked in, as they will come from power plants that are currently in place or under construction today. "This significant increase in CO₂ emissions and the locking in of future emissions due to infrastructure investments represent a serious setback to our hopes of limiting the global rise in temperature to no more than 2°C," said Dr. Fatih Birol, chief economist at the IEA who oversees the annual *World Energy Outlook*, the Agency's flagship publication.

Reducing CO₂

Engineers at Newcastle University in the U.K. are leading three research initiatives to reduce CO₂ in shipping. Around 60 percent of the 1,000 million tonnes of CO₂ produced by worldwide shipping each year comes from bulk carriers and tankers. The INOMANS²HIP project aims to integrate new energy technologies used in other sectors with shipping's existing power and propulsion systems. The Technologies and Scenarios for Low Emission Shipping project will focus on energy recovery and after-treatment technologies for reducing emissions. The Ultra Slow Ships project will study the logistics of transporting goods in greater numbers of ships but travelling at much slower speeds to conserve fuel.

Bigger is Better

Big marine protected areas (MPAs) are cheaper to manage per hectare than small ones, and no-fishing zones are cheaper to manage than multiple-use zones, a new study has found. "Management costs are rarely taken into account in MPA design," according to Dr. Natalie Ban and colleagues in an article in the latest edition of the journal *Conservation Letters*. "However it is important to budget for them effectively, so we can be sure the long-term goals of the park are achieved."

Saltwater Lubricant

The seawater lubricated propeller shaft bearings manufactured by Canadian company Thordon Bearings, were short-listed for the Ocean Environmental Protection Award at the 2011 Sustainable Shipping Awards in July. Thordon's bearing system completely eliminates oil from the ship stern tube by using seawater as the lubrication medium

and Thordon non-metallic bearings in place of the metal bearings. The seawater is taken from the sea, pumped through the bearing positions and then flows into the sea. The company says the system allows shippers to reduce the millions of liters of stern tube oil lost annually in the ocean.

GOM Gunk

A University of South Florida geological oceanographer has discovered a "dirty blizzard" more than 3 inches thick of oil mixed with decayed plant and animal material near the site of the Deepwater Horizon blowout. Core samples representing about 1,000 years revealed more than three inches had accumulated in three months, more than three times the normal rate of sedimentation.

Energy from Alloy

Researchers have developed an aluminum alloy that could be used in a new type of mobile technology to convert non-potable water into drinking water while also extracting hydrogen to generate electricity. The alloy contains aluminum, gallium, indium and tin. Immersing the alloy in fresh water or salt water causes a spontaneous reaction, splitting the water into hydrogen and oxygen molecules. The hydrogen could then be fed to a fuel cell to generate electricity, producing water in the form of steam as a by-product.

Alloy for Pipelines

Engineers from Sheffield Hallam University are using laser deposition technology to produce Alloy 625, a high-strength material used in the flanges of offshore oil pipelines, to stop them corroding. The method reduces material costs by up to 85 percent and

cuts down on the amount of nickel used, resulting in a more environmentally friendly production process.

Seaweed 1, Coral 0

New experimental evidence shows that ocean acidification affects the interaction between the two most abundant bottom-dwellers in coral reefs: reef-building corals and seaweeds. These two groups compete on reefs for both space and light. Often, in situations of low herbivory, seaweeds have the upper hand and may win the competition for space. But when seaweeds are kept in check by their predators, and the reef is healthy, corals and seaweeds are in a competitive balance. Now Australian researchers writing in *Ecology Letters*, demonstrate that ocean acidification enhances the ability of seaweeds to outcompete corals, leading to coral death.

Tsunami Detection

The research group led by Prof. Dante Figueroa from the University of Concepcion in Chile has reported that their WERA radar system was able to capture the signal of the tsunami that struck northeast Japan in March 2011. This is the first time that an ocean radar detected an approaching tsunami. This radar measurement of a real tsunami is the proof of concept the ocean radar community has been waiting for.

Pinging Porpoises

Porpoise alarm (PAL), a new acoustic warning system for porpoises, has been successfully tested. The click generator produces warning clicks with increasing frequency. First tests have shown that the animals understand the signal correctly and react with

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2007 Winner Takes First Again in ROV Competition

Jesuit High School of Carmichael, Calif., triumphed at the June International MATE/MTS ROV Committee ROV Competition, winning first place in the Explorer class, a feat they last accomplished in 2007. The team also won an award for highest mission score. The Marine Advanced Technology Education (MATE) competition was held this year at NASA's Johnson Space Center in Houston, Texas.

Second place went to Purdue University of West Lafayette, Ind. The Purdue team also won the Martin Bowen Memorial Inspiration for Future Engineers Award. Linn-Benton Community College of Albany, Ore., took overall third place. The team also won the "Sharkpedo" award for innovation and originality and the Aloha Team Spirit award.

In the Ranger class, Aptos High School of Aptos, Calif., took overall first place and also earned the top award for best technical report. Ozaukee High School of Fredonia, Wis., won overall second place honors and had the top mission score. Carrollton High School of Carrollton, Ga. earned overall third place.

MTS donates membership in the Society to the students in the top winning Ranger and Explorer class teams.

Students competed with ROVs that they designed and built to withstand the same conditions and challenges faced by ROV operators during last year's Deepwater Horizon oil spill. During the Gulf oil spill, commercial ROVs and their operators worked around the clock for nearly three months to support the operations to cap and contain the devastating spill. Students faced a simulation of this scenario, completing mission tasks such as removing a damaged riser pipe, capping a wellhead, collecting a water sample, measuring depth and sampling organisms.



Members of the winning team from Jesuit High School maneuver their ROV during the competition.

This year's contest encouraged students to think like "entrepreneurs" while creating and testing their ROV. Instead of forming teams, students formed "companies" tasked with designing specialized tools to help with oil spill mitigation. Besides helping students learn critical science, technology, education and math (STEM) skills, the competition helps them learn about team building, creative thinking and problem solving, so they can learn to compete in today's global workplace.

In addition to the pool missions, the teams were required to submit and present an engineering report and prepare a poster presentation for volunteer judges. ■

Wisconsin High Beats 23 Teams at NOSB

Marshfield High School from Marshfield, Wis., won the 14th annual National Ocean Sciences Bowl (NOSB®) Final, held April 29–May 1 at Texas A&M University-Galveston. Twenty-four high schools from around the United States competed in this year's finals. Approximately 2,000 students from over 300 high schools participated in the regional competitions from which the 24 national competitors were drawn. The NOSB is an ocean science education program of MTS member **The Consortium for Ocean Leadership**, which is based in Washington, D.C.

At both the regional and national levels, the competition consists of buzzer-style, multiple choice questions and longer, critical thinking-based team challenge questions on ocean-related topics. During the finals competition, the students also participated in a new pilot Policy Briefing component, which provided them with a broader understanding of the interconnections between science, law and the public. The Policy Briefing was not part of the regular competition, and a separate winner was announced.

Coming in below Marshfield High were 2nd Lexington High School, Mass.; 3rd Santa Monica High School, Calif.; 4th Mt. Sinai High School, N.Y.; 5th Contoocook Valley Regional High School, Peterborough, N.H.; 6th Mission San Jose High School, Fremont, Calif.; 7th State College High School, Penn.; 8th North Carolina

School of Science and Mathematics, Durham, N.C.

The coaches of the winning schools all receive one-year memberships in MTS.

Juneau-Douglas/Thunder Mountain High School from Juneau, Alaska, became NOSB's first Policy Briefing Champion. An animation by Thomas Jefferson High School for Science and Technology in Alexandria, Va., won the third annual NOSB "Living on the Ocean Planet" video contest with their video "Making Every Difference" (see it at tinyurl.com/NOSBvideo).

The first, second and third place teams received all-expense-paid trips to experience ocean sciences in person in Puerto Rico, California and South Florida. The fourth through eighth place teams received an array of prizes, from marine science textbooks to gift certificates. The Policy Briefing champions won a trip to Washington state to meet with members of the Pacific Coast Grower's Association.

Along with the competition, the students participated in a day of interactive field trips around the city of Galveston and an engaging speed career-search event, and heard inspiring presentations from world-renowned ocean scientists such as MTS members **Dr. Sylvia Earle** and **Dr. Ellen Prager**. ■

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LEGAL Q&A



By Montserrat Gorina-Ysern, Ph.D.
Chair, Marine Law and
Policy Committee

Q Can NASA contribute to operational oceanography?

A Yes, in a pioneering way. On June 10, NASA successfully used a Delta II rocket built by Boeing to launch into orbit Aquarius sensors on the SAC-D spacecraft mission from the Space Launch Complex at Vandenberg Air Force Base in California. The \$400 million Aquarius/SAC-D observatory is the brain and technology child of an international collaborative project among NASA (U.S.); CONAE (Argentina's Comision Nacional de Actividades Espaciales which is Argentina's space agency); and Brazil, Canada, France and Italy, each contributing optical and thermal cameras, microwave radiometers, sensors and other instrumentation. The Aquarius sensors were built by the Jet Propulsion Lab in Pasadena, Calif., and the Goddard Space Flight Center in Greenbelt, Md. The SAC-D spacecraft was built by CONAE. The platform's commissioning period may last up to 65 days, during which instrumentation will be tested and the platform will be maneuvered into its final operational near-polar orbit at 408 miles above the Earth, where it should remain until at least 2014.

Aquarius is a pioneering first for NASA, as it aims to map ocean surface salinity from space once every seven days with a resolution of 93 miles, designed to show monthly, seasonal and yearly changes, using thermal microwave emission sensors with radiometers and microwave radar scatterometers to measure ocean waves to verify salinity data precision to something equivalent to 1/8th of a teaspoon of salt in a gallon of

water! Dr. Michael Freilich, director of NASA's Earth Science Division in the Science Mission Directorate in Washington, D.C., anticipates that this information will complement current understanding of deep ocean circulation and the prediction of the global water cycle.

Ocean surface data obtained by Aquarius from outer space will be collated with a vast and impressive institutional and international architecture of platforms and instruments (such as buoys, drifters and floats, including Argo profiling floats) used by operational oceanography to collect data *in situ* on the high seas and other ocean areas. While the collection of ocean surface salinity data by Aquarius from outer space will be considered an exercise in the freedom of the high seas, down here on the planet, there is a set of guidelines adopted by the Executive Council of the Intergovernmental Oceanographic Commission (IOC) of UNESCO in June 2008. Permission from coastal states (rather than a simplified notification process) is required under the guidelines for any Argo float that may drift into and collect data from the Exclusive Economic Zone of a coastal state seeking such permission.

The successful integration of outer space ocean surface salinity measurements and deep ocean salinity and other measurements will contribute to the World Climate Research Program, the Global Ocean Observing System within the World Meteorological Organization and one of NOAA-endorsed key international climate and environmental projects: the Global Earth Observation System of Systems, spearheaded by **Vice Adm. Conrad C. Lautenbacher**, former NOAA administrator and current MTS member.

For source: Washington Post, June 11, 2011, at A4; see also www.nasa.gov/mission_pages/aquarius/news/aquarius20110608.html; for the technology used in ocean surface topography from space see sealevel.jpl.nasa.gov/technology/; for the Topex/Poseidon measurement system see sealevel.jpl.nasa.gov/files/archive/technology/P38232.jpg; for CONAE instruments see www.conae.gov.ar/satelites/sacdaquarius. ■

If you have questions you'd like addressed in this column, please send them to Dr. Gorina-Ysern at montserrat.gorina@verizon.net.

Report Debris

The mobile app Marine Debris Tracker, a joint partnership of the NOAA Marine Debris Division and the Southeast Atlantic Marine Debris Initiative at the University of Georgia, allows you to post the type and location of trash you find on coastlines and waterways. **Web link:** www.marinedebris.engr.uga.edu

Climate Choices

The National Research Council of the National Academy of Sciences has issued a Congressionally ordered report, "America's Climate Choices," that warns that the effects of global warming

are already becoming serious and the need for strong national policy to limit heat-trapping gas emissions is "pressing." **Web link:** tinyurl.com/3lzws9n

Energy Potential

Offshore wind and other ocean energies were included in a report on the potential of renewable energy issued by the Intergovernmental Panel on Climate Change. **Web link:** srren.ipcc-wg3.de/report

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Lecture Video

A video of the lecture “Bringing the Internet to the Oceans” by Deborah Kelley, professor of oceanography at the University of Washington and associate director for science for the Regional Scales Nodes component of the Ocean Observatories Initiative, is available online. **Web link:** tinyurl.com/3c6uatx

Acid Report

The Ocean Research and Resources Advisory Panel has released the Ocean Acidification Task Force Report. **Web link:** tinyurl.com/orrap

Strategic Plan

NOAA’s Office of Ocean Exploration and Research has electronically published its Strategic Plan for fiscal year 2011–2015, describing the office’s vision, mission, goals, core activities and organization. **Web link:** explore.noaa.gov/oerplan

Oil Spill Site

Woods Hole Oceanographic Institution has a new multi-media website, Science in a Time of Crisis, which focuses on the Deepwater Horizon oil spill. **Web link:** www.whoi.edu/deepwaterhorizon

Research Ships

An Ocean Leadership working group tasked with reviewing existing models of funding and support for the academic research fleet and then developing and prioritizing alter-

native funding models and approaches to acquiring ships has issued a final report with recommendations. **Web link:** tinyurl.com/3fhng3y

Economic Oceans

The Joint Ocean Commission Initiative released a report, “America’s Ocean Future: Ensuring Healthy Oceans to Support a Vibrant Economy,” that reinforces the importance of healthy oceans as they drive our “economic engine” and addresses each of the nine objectives included in the National Ocean Policy. **Web link:** tinyurl.com/3aotsgg

Renewable Energy

To view presentations from the 4th Annual Global Marine Renewable Energy Conference, look for the Presentations tab on the top right of the website. **Web link:** www.globalmarinere-newable.com

IOOS Toolbox

The latest observations and time-series data as a collection from multiple stations rather than a single station is a new tool in the U.S. IOOS Data Management and Communications toolbox. **Web link:** opendap.co-ops.nos.noaa.gov/ioos-dif-sos

IODP Report

The post-cruise preliminary report from IODP Expedition 334, Costa Rica Seismogenesis Project, which took place onboard the *JOIDES Resolution* from March 15–April 14, is available online. **Web link:** publications.iodp.org/preliminary_report/334 ■

Science & Tech

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intensive acoustic inspection. The porpoises were neither attracted nor chased off but, very intrigued, examined the noise source. Since porpoises do not send signals non-stop, they can miss nets and thus collide with them. PAL will help to avoid this.

Floating Tests

Engineers at the Maritime Research Institute in the Netherlands (MARIN) are testing three floating wind turbine concepts—a spar, a tension-leg platform and a semi-submersible—for the DeepCwind Consortium, led by the University of Maine. The researchers claim that it is the first time such extensive scale-model testing has been conducted in the field. The

tests allow them to study the complex motions and loads of the rotating wind turbine on a moving platform in both wind and waves to validate simulation methods of aerodynamic and hydrodynamic coupling. For the tests, MARIN and the DeepCwind Consortium developed a new wind-generation machine in the MARIN testing facility.

Iceberg Fertilizers

The first comprehensive study of the biological effects of Antarctic icebergs shows that they fertilize the Southern Ocean, enhancing the growth of algae that take up carbon dioxide from the atmosphere and then, through marine food chains, transfer carbon into the deep sea. This process is detailed in 19 new research papers published electronically in a special issue of the

journal *Deep Sea Research Part II: Topical Studies in Oceanography*. The research team was led by marine biologist Ken Smith with MTS member **Monterey Bay Aquarium Research Institute**.

Self-Repairing Sensor

Researchers from North Carolina State University have designed a sensor that can measure strain in structural materials and is claimed to be able to self-heal. The sensor could be used to help make decisions about structural safety in the wake of earthquakes, explosions or other events. Engineers use sensors to measure the strain exerted on materials, but a flaw in such sensors is that they can break under stress. The sensor can reportedly stretch and compress along with the material it monitors. An infrared (IR) light wave runs through the sensor

and detects these changes in length, which tells how much strain the material is undergoing. The sensor contains two glass optical fibers that run through a reservoir filled with ultraviolet (UV)-curable resin. The ends of the glass fibers are aligned with each other, but separated by a small gap. Focused beams of IR and UV light run through one of the fibers. When the tightly focused UV beam hits the resin, the resin hardens, creating a thin polymer filament that connects the glass fibers, creating a closed circuit for the IR light. The rest of the resin in the reservoir remains in liquid form, surrounding the filament. If the polymer filament breaks under stress, more liquid resin moves into the gap, comes into contact with the UV beam and hardens, repairing the sensor automatically. ■

AUGUST 21–24

17th International Symposium on Unmanned Untethered Submersible Technology (UUST11)
Portsmouth, N.H.
www.ausi.org

AUGUST 22–23

TechSurge 2011: Oceans in Action Biloxi, Mississippi
www.mtsociety.org/conferences/techsurge/oceansinaction.aspx

AUGUST 22–26

Fifth International Symposium on GIS/Spatial Analyses in Fishery and Aquatic Sciences
Wellington, New Zealand
tinyurl.com/3bwfj5c

AUGUST 30–SEPTEMBER 1

International Quiet Ocean Experiment Open Science Meeting
Paris, France
www.iqoe-2011.org

SEPTEMBER 5–7

Marine Resources and Beyond 2011
Bremerhaven, Germany
www.mrb2011.org

SEPTEMBER 5–8

CoastGIS 2011
Ostend, Belgium
www.coastgis.info

SEPTEMBER 12–13

Engine as a Weapon IV Symposium
Greenwich, U.K.
tinyurl.com/3o3e4po

SEPTEMBER 12–16

Free and Open Source Software for Geospatial Conference
Denver, Colo.
2011.foss4g.org/program

SEPTEMBER 13–16

Defence & Security Equipment International
London, U.K.
www.dsei.co.uk

SEPTEMBER 14–15

The International Conference on Marine Design
Coventry, U.K.
www.rina.org.uk/marinedesign

SEPTEMBER 18–23

SEG International Exposition and 81st Annual Meeting 2011
San Antonio, Texas
www.seg.org

SEPTEMBER 19–22

OCEANS'11 MTS/IEEE Kona Kona, Hawaii
www.oceans11mtsieekona.org

SEPTEMBER 20–22

ICCAS 2011: International Conference on Computer Applications in Shipbuilding
Trieste, Italy
www.rina.org.uk/ICCAS2011

SEPTEMBER 20–22

RETECH 2011
3rd Annual Renewable Energy Technology Conference and Exhibition
Washington, D.C.
www.retech2011.com

SEPTEMBER 20–22

Oil and Gas Maintenance Technology North America Conference and Exhibition
Galveston, Texas
www.ogmntna.com

SEPTEMBER 20–23

NEVA 2011
Saint Petersburg, Russia
www.neva.transtec-neva.com

SEPTEMBER 22–23

Fourth International Workshop on Marine Technology 2011
Cadiz, Spain
martech2011.uca.es

SEPTEMBER 22–24

Fourth International Forum on the Prevention of Maritime and Port Risks
Nantes, France
www.marisk2011.com

SEPTEMBER 26–30

Marine Biodiversity Symposium
Aberdeen, Scotland
www.marine-biodiversity.org

OCTOBER 2–5

Teledyne RD Instruments ADCPs in Action Users' Conference
San Diego, Calif.
www.rdinstruments.com/pressrel/pr10-2-5-11.aspx

OCTOBER 4–6

Offshore Technology Conference-Brasil
Rio de Janeiro, Brazil
www.otcnet.org/pages/general/brazil.html

OCTOBER 11–12

2011 Dynamic Positioning Conference Houston, Texas
www.dynamic-positioning.com

OCTOBER 11–13

Deep Offshore Technology Exhibition and Conference
New Orleans, La.
www.deepoffshoretechnology.com

OCTOBER 18–21

DFI 36th Annual Conference on Deep Foundations: Foundations for Our Future
Boston, Mass.
www.dfi.org/conferencedetail.asp?id=172

OCTOBER 18–21

Ocean Innovation 2011: Sustainable Oceans - Understanding the Value of Traditional Knowledge and Innovation
Iqaluit, Nunavut, Canada
www.oceaninnovation.ca

Education News, *continued from page 24*

Gill Sails to Victory at Robotics Competition

Gill the Boat, one of two robotic sail boats fielded by the U.S. Naval Academy, took first place at the SailBot 2011 competition in June. The 5th International Robotic Sailing Competition, sponsored by the Society of Naval Architects and Marine Engineers, took place at the U.S. Naval Academy in Annapolis, Md.

The other academic institutions that sponsored boats were the University of British Columbia (2nd place), The Royal Military College of Canada (3rd place), Memorial University of Newfoundland

(4th place), the U.S. Naval Academy (its *Spirit of Annapolis* took 5th place) and Queen's University (6th place).

Aimed primarily at undergraduate student teams, the goal is to give engineering students a practical application of the topics they have learned, while also providing a fun way to learn project management in a multidisciplinary environment. A successful SailBot balances the needs of naval architecture, mechanical engineering and systems and electrical engineering, as well as project management. ■



Gill the Boat sees action at the SailBot competition.

New Degree Programs

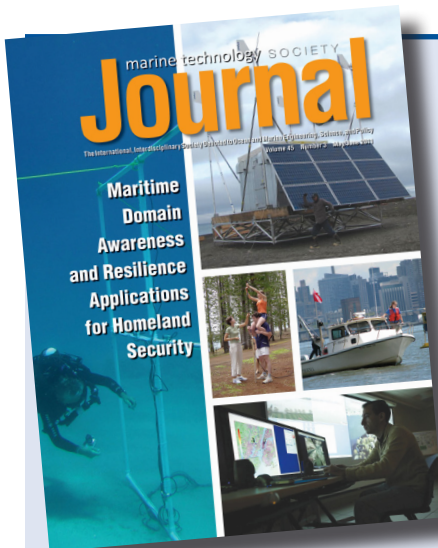
Jacksonville (Florida) University is inaugurating two new master's programs this fall: two-year master of science in marine science and master of arts in marine science. Coming on the heels of the opening of the university's Marine Science Research Institute, the programs emphasize a hands-on approach to learning through either the completion of an original thesis project under the mentorship of an experienced marine science researcher or a non-thesis option that requires extensive laboratory/field study. ■

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Maritime Domain Awareness and Resilience Applications for Homeland Security

May/June 2011, Vol. 45, No. 3

Guest edited by Roy Wilkens, Theophilos Gemelas and Michael Bruno, this special issue presents initial results from projects funded under the National Center of Excellence for Maritime, Island and Extreme/Remote Environment Security (MIREES). The papers cover a wide range of observations, from close-up detection systems employing passive underwater acoustics, to high-frequency radar for over-the-horizon coastal monitoring, to satellite systems appropriate for wide-area, open-ocean surveillance. Special attention is paid to remote environments such as isolated islands and the vast reaches of the Arctic, where the infrastructure that so much of modern technology depends upon is minimal at best and quite often totally lacking.

Upcoming Issues

July/August 2011: *Biomimetics and Marine Technology*

September/October 2011: *General Issue*

November/December 2011: *Legacy Underwater Munitions: Assessment, Evaluation of Impacts and Potential Response Technologies*