



Oceanic Engineering Society Newsletter

VOLUME XXXVIII

NUMBER 4

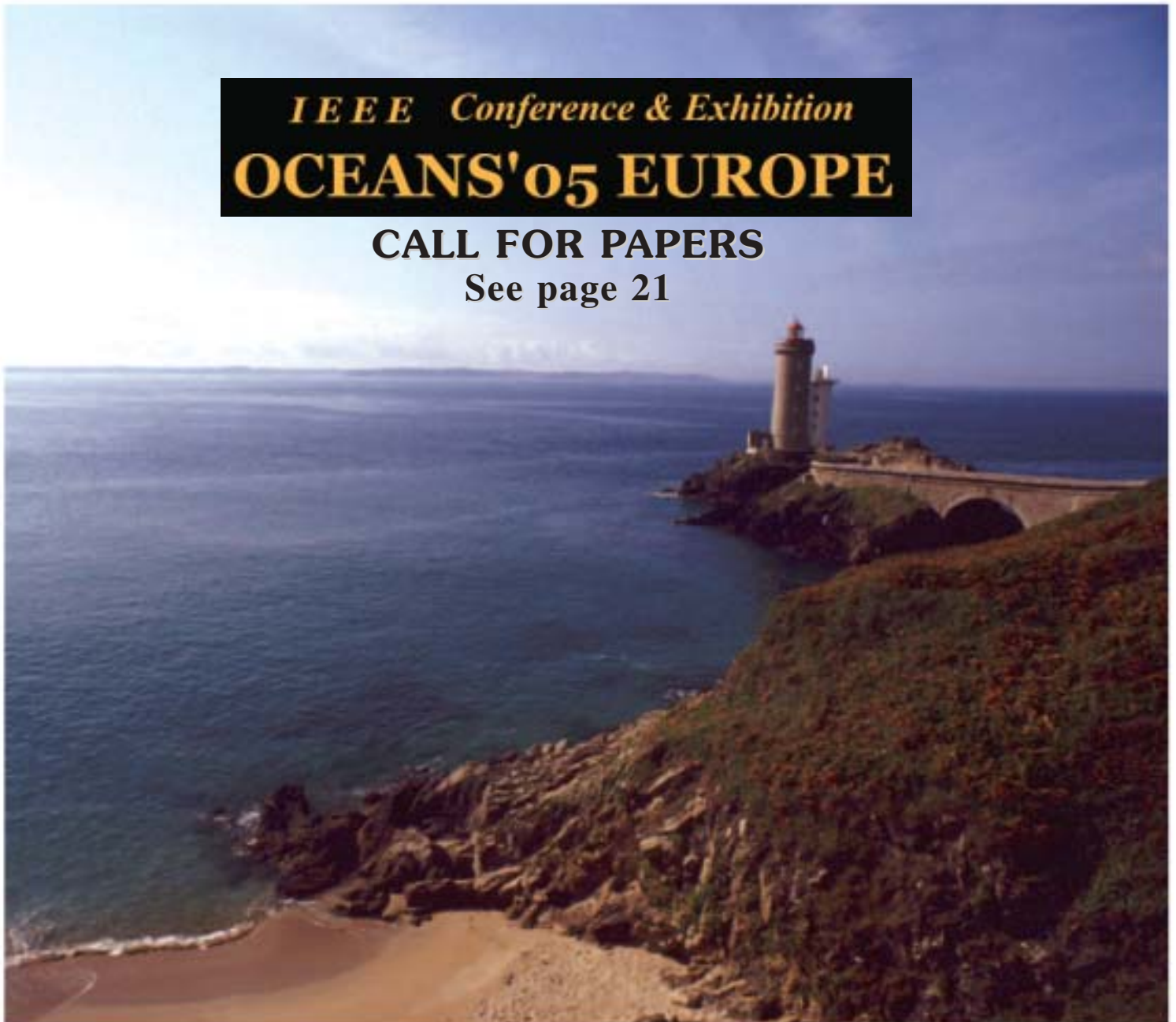
EDITOR: FREDERICK H. MALTZ

FALL 2004

(USPS 420-910) ISSN 0746-7834

IEEE Conference & Exhibition
OCEANS'05 EUROPE

CALL FOR PAPERS
See page 21



IEEE OCEANIC ENGINEERING SOCIETY

President

THOMAS F. WIENER
2403 Lisbon Lane
Alexandria, VA 22306-2516
+1 703 768 9522
t.wiener@ieee.org

Newsletter Editor

FREDERICK H. MALTZ
821 Runningwood Circle
Mountain View, CA 94040
+1 650 967 5092
+1 650 969 9390 (FAX)
f.maltz@ieee.org

Associate Editor

JOHN W. IRZA
Sygnus Technology Inc.
Arlington, MA
781 648 2144
781 641 9974 (FAX)
jirza@sygnus.com

Vice President

Technical Activities

STANLEY G. CHAMBERLAIN
Raytheon Electronic Systems
MS T3TN46, 50 Apple Hill Dr.
Tewksbury, MA 01876
(508) 858-5012
(508) 585-1955 (FAX)
s.chamberlain@ieee.org

IEEE Newsletters

PAUL DOTO
445 Hoes Lane
Piscataway, NJ 08855-1331
+1 732 562 3945
+1 732 981 1855 (FAX)
p.doto@ieee.org

Vice President

International Activities

JOSEPH R. VADUS
Global Ocean Inc.
8500 Timber Hill
Potomac, Maryland 20854
+1 301 299 5477
+1 301 983 4825 (FAX)
jvadus@erols.com

Journal of Oceanic Engineering Editor

JAMES F. LYNCH
Oceans Physics and Engineering
203 Bigelow Building
Woods Hole Oceanographic Institution
Woods Hole, MA 02543
+1 508 457 2000 x2230
jlynch@whoi.edu

Vice President,

Professional Activities

NORMAN D. MILLER, P.E.
2644 NW Esplanade Drive
Seattle, WA 98117-2527
+1 206 784 7154
+1 206 784 0478 (FAX)
colmiller@home.com

Secretary

STEPHEN M. HOLT
11950 Grey Squirrel Lane
Reston, VA 20194
+1 703 610 2000
+1 703 610 1767 (FAX)
sholt@mitretek.org

Treasurer

JAMES T. BARBERA
13513 Crispin Way
Rockville, MD 20853
+1 301 360-4347
+1 301 871 3907 (FAX)
j.barbera@ieee.org

Web Coordinator & Publicity

ARCHIE TODD MORRISON III
Nobska Development Corporation
Falmouth, MA 02540 USA
+1 508 360 2393
+1 508 539 0808 (FAX)
atmorrison@ieee.org

EX-OFFICIO

Jr. Past President

GLEN N. WILLIAMS
Engineering Program Office
Texas A&M University
College Station, TX 77843-3112
979 845 5485
g.williams@ieee.org

Sr. Past President

CLAUDE P. BRANCART
18 Juniper Road
Brunswick, ME 04011-3414
207 729 7873
monkfish@blazenetme.net
c.brancart@ieee.org

Membership Development

KENNETH FERER

Nominations

CLAUDE P. BRANCART

Chapters

NORMAN MILLER

Journal Editor

JAMES F. LYNCH

Awards and Fellows

DAVID WEISSMAN
Dept. of Engineering
104 Weed Hall
Hofstra University
Hempstead, N.Y. 11549
516 463 5546
516 463 4939 (Fax)
eggdew@hofstra.edu

Publications Review Board

GLEN N. WILLIAMS

Newsletter Editor

FREDERICK H. MALTZ

Pace

NORMAN D. MILLER

TAB Engineering Research and Development Policy Committee

JOSEPH R. VADUS

ELECTED ADMINISTRATIVE COMMITTEE

JAMES BARBERA
(see Treasurer)

ROBERT T. BANNON, President
Bannon International Consulting
301 Willow Run
East Stroudsburg, PA 18301-8591
rtbannon@ieee.org
570 619 5430
570 619 5107 (Fax)

JERRY C. CARROL
411 Country Club Drive
Picayune, MS 39466
jerry@datasync.com

STANLEY G. CHAMBERLAIN
(see Vice President, Technical Activities)

DR. ENSON CHANG
Dynamics Technology, Inc.
21311 Hawthorne Blvd. Suite 300
Torrance, CA. 90503-5602
Tele : (310)543-5433 (x229)
Fax: 543-2117
echang@dynatec.com

ELIZABETH CREED
Institute of Marine & Coastal Sciences
Rutgers University
71 Dudley Road
New Brunswick, NJ 08901-8521
Tele: (732)932-6555 (x531)
Fax: (732)932-8578
creed@marine.rutgers.edu

RENE GARELLO
(see Chapter Chairman, France)

PAMELA J. HURST
Lockheed Martin Maritime Systems & Sensors
17 Danielle Avenue
Westerly, RI 02891
Cell 401-481-3828
pamela.hurst@lmco.com

WILLIAM M. CAREY
(see Journal Associate Editor)

CHRISTIAN DE MOUSTIER
(see Journal Associate Editor)
PROF. DIANE E. DIMASSA
Massachusetts Maritime Academy
Engineering Dept. Harrington 215A
101 Academy Drive
Buzzards Bay, MA, 02532
508-830-5000 x1212
ddimassa@maritime.edu

FERIAL EL-HAWARY
(see Chapter Chairmen)

DR. ROBERT C. SPINDEL
Director Applied Physics Laboratory
University of Washington
1013 NE 40th Street
Seattle, WA 98105
Tele: (206) 543 1310
(Home) (425) 641 9928
spindel@ieee.org

DANIEL D. STERNLICHT
SAS Business Director
Dynamics Technology Inc.
21311 Hawthorne Blvd., Suite 300
Torrance, CA 90503-5602

IEEE OCEANIC ENGINEERING SOCIETY TECHNOLOGY COMMITTEE CHAIRS

Modeling, Simulation & Visualization, ED GOUGH
Marine Communication Navigation & Positioning, DAVID CHADWELL
Oceanographic Instrumentation, MICHAEL HARRIS
Current Measurements, STEVEN ANDERSON
Underwater Acoustics, DR. KENNETH G. FOOTE
Unmanned Underwater Vehicles, CLAUDE P. BRANCART
Air/Space Remote Ocean Sensing, DR. DAVID E. WEISSMAN
Ocean Policy Technology, DR. JOSEPH CZIKA, JR.

Sonar Signal & Image Processing, DR. JAMES CANDY
Non-Acoustic Image Processing, DR. FRANK M. CAIMI
Neural Networks and Information Processing, V. WILLIAM (BILL) PORTO
Environmental Technology, JAMES T. BARBERA, SR.
Technology Committees Coordinator, DR. STANLEY G. CHAMBERLAIN
Submarine Cable Technology, ROBERT T. BANNON & PAMELA J. HURST
Homeland Security, PAMELA J. HURST & ROBERT T. BANNON

IEEE Oceanic Engineering Society Newsletter (ISSN 0746-7834) is published quarterly by the Oceanic Engineering Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, NY 10017-2394. \$1.00 per member per year (included in Society fee) for each member of the Oceanic Engineering Society. Printed in U.S.A. Periodicals postage paid at New York, NY and at additional mailing offices. Postmaster: Send address changes to IEEE OCEANIC ENGINEERING SOCIETY NEWSLETTER, IEEE, 445 Hoes Lane, Piscataway, NJ 08854
©2004 IEEE

Permission to copy without fee all or part of any material without a copyright notice is granted provided that the copies are not made or distributed for direct commercial advantage, and the title of the publication and its date appear on each copy. To copy material with a copyright notice requires specific permission. Please direct all inquiries or requests to IEEE Copyrights and Permissions Office.

Table of Contents

<i>President's Message</i>	3
<i>USA-Baltic International Symposium</i>	5
<i>US-Baltic International Symposium Summary Report</i>	7
<i>Meet the New IEEE OES AdCom 2004-06.</i>	11
<i>National Ocean Sciences Bowl</i>	13
<i>Report to OES Newsletter on IEEE OES AdCom Meeting.</i>	14
<i>Autonomous Underwater Vehicles 2004.</i>	15
<i>Soundings</i>	16
<i>Upcoming Conferences</i>	17
<i>2004 IEEE OES Homeland Security Technology Workshop.</i>	18
<i>News Item – Whoi Scientist to Build Hybrid ROV</i>	20
<i>OCEANS '05 Europe.</i>	21
<i>OCEANS '04 MTS/IEEE / TECHNO-OCEAN '04.</i>	22
<i>Welcome to Kobe.</i>	23

President's Message

As I noted in my column in the Summer Newsletter, we are finishing up this year, and my second term as President, with a flashy sprint.

Society Review

In June, the Society appeared before the TAB Society Review Committee to report on our Vision, Mission, and operations. At the same time, the TAB Publications Review Committee reviewed the Journal of Oceanic Engineering and the IEEE Oceanic Engineering Society Newsletter. The Society Review Committee offered the following comments as a result of the review:

Recognition of good practices

- OES sponsored a Maritime Homeland Security Workshop in December 2003 based on the general public's interests in homeland security. This represents a quick turnaround of a workshop related to immediate needs.
- Paper copies of Conference Proceedings must be ordered prior to the conference and are provided post conference.
- Development of workshops.

Recommendations to the Society

- Implement its strategy and fulfill its mission for global recognition and further its influence.
- Develop a better distribution of AdCom and Committee members.
- Continue its excellent performance in sponsoring workshops.



We do not have a report from the Publications Review Committee, but generally they were complimentary in the meeting.

The first "Recommendations to the Society" recognizes our work in extending our services to the profession, our community, and our membership to a global reach. The second recommendation encourages us to make the membership of our Administrative Committee and our other committees, including our Panel of Editors, more representative of our community and the IEEE. As we implement our Two-Oceans policy, it will give more visibility to our Society and its activities and publications, and will encourage our undiscovered colleagues to make their own contribution to our Society.

Society Statement of Interest

As expected, the Technical Activities Board approved our revised Statement of Interest at its June, 2004, meeting. As a reminder, here is the new statement:

The field of interest of the Society includes all aspects of science, engineering, and technology that address research, development, and operations pertaining to all bodies of water. This includes the creation of new capabilities and technologies from concept design through prototypes, testing, and operational systems to sense, explore, understand, develop, use, and responsibly manage natural resources.

On a related matter, the revision of the Constitution and Bylaws is proceeding. I expect that the Administrative Committee will approve the revised versions at our meeting in Kobe.

this will pave the way for submission of the new Constitution to the Membership for approval. the first step will be its publication in the Newsletter.

Conferences

Since our last Newsletter, we have had two successful workshops: AUV '04 in the U.S.A., and the US-Baltic Symposium in Lithuania.

Coming up is Sea Tech Week in October in Brest, France, the site of OCEANS '05 Europe next June and IEEE SENSORS 2004 in Vienna, Austria, both in October.

If you haven't made your plans to attend OCEANS MTS/IEEE '04/Techno-Oceans in Kobe in November, please do so now. take advantage of this opportunity to meet your colleagues from all over the world. I expect that there will be many

from Asia who have not been able to attend OCEANS Conferences in North America and Europe. who knows what relations you can forge?

Also, plan to attend the Second Homeland Security Workshop in December. It will be held in Valley Forge, and will be bigger and better than last year's extraordinarily successful inaugural workshop.

As long as you have your calendar in your hands, or on your computer screen, please plan for our conferences and workshops in 2005. OCEANS '05 Europe will be in Brest in June, and OCEANS MTS/IEEE '05 America will be in Washington, D.C. in September.

See the Society's web page for details.

Let's Get Famous!



Your One-Stop Source for Online Shopping
www.ieee.org/shopamazon

IN ASSOCIATION WITH
amazon.com

A large graphic with an orange background. The words "Repeat Shop Save" are written in a large, stylized font, curving around the top and right sides. The word "Repeat" is in black, "Shop" is in white, and "Save" is in yellow. In the center, there is promotional text:

Start your online shopping at Shop Amazon.com at IEEE. Every purchase you make helps support IEEE initiatives.

Get Amazon.com's everyday low prices on books, CDs, electronics and more.

Come back! Bookmark www.ieee.org/shopamazon for all your online shopping needs.

USA-Baltic International Symposium June 15-17, 2004



Klaipeda, Lithuania



V. Klemas & R. Garello on Remote Sensing



OES Session Chairs: R Garello, (France) &
J. Barbera, (USA)



R. Spinrad, NOAA-Plenary Speaker flanked by
Symposium co-chairs J. Vadus & A. Stankevicius
(Lithuania)



J. Barbera, J. Vadus, V. Grinius & A. Kalvaitis of
USA at session on Ocean Systems



Planning for US-Baltic 2006 in Vilnius, Lithuania:
 A. Juozapavicius (Lith.); V & V Klemas (USA); R.
 Jasinevicius (Lith.); J. Vadus (USA)



Post Reception Planning:
 K. Kohanowich, J. Carroll, J. Vadus & J Barbera (USA);
 H. Dahlin (Sweden) & H. Oebius (Germany)



OES at Rest in the Klaipeda Hotel:
 R. Garello, F. & J. Collins, J. Vadus, J. Barbera



Planning fro US-Baltic 2006:
 A. Stankevicius and A. Juozapavicius of Lithuania; and
 J. Barbera, J. Vadus, V. Klemas of USA



Banquet Table:
 S. Kalvaitis, F. & J. Collins; R. Butler (ONR-London); E.
 & P. Petrusевичs (Australia); & A. Kalvaitis (USA)



I. & A. Williams, WHOI-USA; and K. & E. Gough,
 Navy, USA Plenary Speaker



Lina Siaulienė (Lithuania) & K. Kononen (Finland)



A. Stankevicius, L. Siaulienė of CMR, Lithuania
 & Symposium Staff

US-Baltic International Symposium Summary Report

**Joseph R. Vadus, LF - IEEE
Symposium Co-Chairman
Vice President, International
IEEE Oceanic Engineering Society
<j.vadus@ieee.org>**

INTRODUCTION

The First US-Baltic International Symposium was successfully conducted in Klaipeda, Lithuania, June 14-17, 2004 with participation of all nine Baltic Nations, the U.S. and seven other nations. Sponsors included Lithuania's Ministry of Environment and Center of Marine Research; The National Oceanic and Atmospheric Administration's National Ocean Service; The U.S. Office of Naval Research Global; and the Institute of Electrical and Electronics Engineer's (IEEE) Oceanic Engineering Society and IEEE Region 8. The Opening Address was presented by Mr. Vaclov Stancovic, Member of Lithuania's Parliament, who recognized the importance of the Baltic Sea environment, its resources and the coastal zone. In that regard, he proposed having a moratorium on offshore oil drilling and production in the Baltic Sea. The subject of marine pollution, especially oil pollution, was covered by many papers. There were papers on potential oil spills, tracking of spills and clean up, and discussions of the controversial offshore drilling platform that just began oil production about 20 km from Kaliningrad and Lithuania's southern tip of the Curonian Spit, World Heritage Site. Neighboring countries, Latvia and Estonia are also concerned about possible spills from this site.

To provide background information prior to presentation of papers, an overview of the Baltic Sea characteristics and environmental concerns was presented by Dr. Hans Dahlin, Director of Euro GOOS. Eleven papers were presented in two plenary sessions, mainly by Marine Research Directors of the 9 Baltic Nations and the U.S., plus 95 papers addressing the theme, "Advances in Marine Environmental Research, Monitoring and Technologies". A field trip was made to the Curonian Spit, a 97 km sliver of land separated from the Lithuania's coast by the Curonian Lagoon.

The writer summarizes below, the highlights of the symposium, and edits, paraphrases and abbreviates information provided by and credited to the authors. The writer encourages readers to refer to the proceedings for the full text of the papers.

MARINE ENVIRONMENT AND OBSERVATIONS

U.S. international and domestic ocean policies are undergoing intensive review. The U.S. Commission on Ocean Policy



released its draft report, which recommends a doubling of U.S.-sponsored marine research, new investments in marine technology, and an integrated ocean and coastal observing system. In July, 2003, the U.S. sponsored an Earth Observing Summit in Washington, DC. An organization of more than 30 nations and 20 international organizations—the Group on Earth Observations or GEO—has been created. An intergovernmental office called Ocean.US was created to coordinate development and implementation of an Integrated Ocean Observing System. Some of the pressing needs for advancing marine research, include mitigating natural hazards, improving marine transportation and operations, reducing public health risks, and more effectively protecting, restoring and sustaining living marine resource and ecosystems. (R.W.Spinrad, USA)

The Office of Naval Research Global is interested in the regional activities of the Baltic Nations and establishing closer interaction and potential for collaboration with Baltic institutes. There are plans for a U.S. sponsored Science and Technology Review Trip of the Baltic Region in the Fall 2004. (C.L.Butler, USA)

Countries and institutes around the Baltic Sea have long experience of joint monitoring and assessment activities. This cooperation is coordinated by Helsinki Commission (Baltic Marine Environment Protection Commission) but the actual monitoring work is done on national levels. The HELCOM monitoring data supplemented with additional data from different research programs are the basis for environmental assessments of the pollution load to the Baltic Sea. This information is needed to: evaluate threats to the environment; analyze the impacts of discharges and emissions from different point and non-point sources of pollution on the marine environment and its biodiversity; and to follow up abatement measures taken as a result of regulatory actions. (E.L.Poutanen, Finland).

Since 1992, the Center of Marine Research in Klaipeda focussed on the Lithuanian economic zone, known for: its fishery regions; spawning grounds of Baltic herring and other fish; wintering areas of birds; wide sandy beaches; developing economic and recreational infrastructure, and partly on the influence of neighbouring regions. (A.Kubiliute, A. Stankevicius, Lithuania)

Baltic Ocean Observation System (BOOS) is a formal association of institutes from the nine Baltic Nations taking

national responsibility for operational oceanographic services, which support the protection of lives and properties and the promotion of development. This includes: routine collection, interpretation and presentation of data from the ocean and atmosphere; and establishment of a marine database from which time series and statistical analysis can be obtained. BOOS focuses primarily on observations, analysis and model predictions for water level, waves, currents, temperature, salinity, sea ice, oxygen, nutrients, algae, and chlorophyll; and contributes to improved efficiency of marine operations, and reducing the risk of accidents. At present, the BOOS members are cooperating in the EU financed project PAPA, which will integrate and further develop the present operational ocean monitoring, data management and modelling activities within the Baltic Sea with the purpose of producing data products and ocean forecasts of a higher quality. (E. Buch et al, Denmark).

There is a continuing need to monitor the environment to understand processes, discover changes, and be able to forecast in different time scales and warn of pending events. Monitoring and research has a long tradition in the Baltic Sea and there are some time series going back hundreds of years, some a hundred years, and several younger mainly starting in the sixties and seventies due to increased environmental concerns. (H.Dahlin, Sweden)

Poland, has a national project for creating mathematical models and an algorithm for the remote sensing of the Baltic ecosystem and its primary production. Involved in this project are: the Polish Academy of Sciences, Gdansk University, the Marine Fisheries Institute, and the Pomeranian Pedagogical Academy. The principal components of the project include: remote sensing of solar energy inflow into the Baltic and its utilization: remote sensing of sea surface color and temperature, and the models and algorithms applicable in the remote sensing of pigment distribution and primary production in the water. (B. Wozniak; J. Dera, Poland)

The Gulf of Finland is the most eutrophicated (over-fertilized) sub-basin of the Baltic Sea. Although the biogeochemical processes involved has improved, a large uncertainty still remains concerning the role of the sediments and the sediment-held pool of nutrients. Resuspension (stirred up particles from the bottom) of sediments, natural or man-induced, can play a major role in supplying nutrients or other solutes to the water. By combining state of the art in-situ technology with advanced shipboard experiments, sediment investigations, and computer modelling these issues are being addressed by investigators from four countries and seven different research institutes. (T. Anders, Finland)

Water level in the Klaipeda Strait (1898-2001), during a century rose near the Lithuanian coast by 13.5 cm. Since 1960, the mean water level has been rising by 3.0 mm per year. The rise of the long-term water level is associated with advection of warm and wet air masses during the cold period, stronger air flow from the west, and rising air temperature, which causes the rise of water temperature. A more rapid rise of the water level is attributed to the destruction of coasts, flooding of the land, and upsetting ecological balance. Forecasts state that by 2030 water level may rise by 9 cm, and, if

the trend continues, 15 cm by 2050. (I.Dailidienė, B. Tilickis, A. Stankevicius, Lithuania)

Some researchers are of the opinion that yearly 200-1000 m³ of near coast sand are carried to the North and part is pushed into the Strait of Klaipeda. To keep the necessary depth, Klaipeda Port periodically deepens the navigable canal, since the 19th century. Most of dredging spoils were transported to four sea dump sites. (J.Dubra, Lithuania)

The Baltic Sea at the Port of Klaipeda is in the zone of direct impact of continental runoff, where dissolved and particulate matter from the Curonian lagoon disperses. This water area is distinguished for active mixing of different chemical types of water, high input of organic matter, nutrients, oil products, heavy metals and active biogeochemical processes. Another very important impact factor on marine environment is soil dumping in the Baltic Sea. Investigations revealed increasing deformations of the sea bottom in the dump sites. The concentrations of total organic carbon and total hydrocarbons are 1.2 and 2.2 times and heavy metals of nickel 2.3 times as high in the dump site as in the surrounding areas. (J. Kestutis et al, Lithuania)

A database of the Baltic Sea bottom was created in the Shirshov Institute of Oceanology (Atlantic Branch) and contains 60 thousand depth points suitable for digital maps of the Baltic Sea bottom relief. It includes data received in numerous expeditions of research vessels and also from Soviet navigation maps. These digital bathymetric and slope angle maps can be useful in marine environmental investigations. (D.V. Dorokhov et al, Kaliningrad).

OIL POLLUTION

The intense shipping in the Baltic sea accounts for approximately 15% of all maritime traffic around the world. In 2000, 80 million tons of oil were transported in the Baltic. Forecasts indicate that by 2015, the total amount of oil transported will amount to more than 130 million tons a year. The issues of oil recovery and shoreline cleanup must be addressed. Oil is a serious threat to the Baltic ecosystems and wildlife, destroying habitats for many plants and marine life, including the spawning areas of fish. Oil decomposes slowly in the cold waters of the Baltic sea, where the average water temperature is only about 10 degrees celsius. Clean-up operations may unavoidably harm marine life and coastal habitats. Spills can have serious repercussions for tourism and commercial fisheries (Helcom proceedings, 2003).

Oil dispersants containing surfactants facilitates the degradation and dilution, preventing the oil coming ashore, but introduces a new pollutant. (J. Michel, 2001). Bioremediation agents are used in the biodegradation process in which oil molecules are broken down by bacteria). (M. Riepsaite, A.Stankevicius, Lithuania).

The Baltic Sea presents many difficulties for navigation. Winter storms, poor visibility, narrow channels, ice cover, winding passages with limited depth on one hand, and high-density traffic areas with crossing vessels on the other, can combine to cause problems and result in high incidence of accidents. According to statistics annually in the Baltic Sea there are approximately three major accidents with oil spills.

During the process of transformation of oil hydrocarbons more toxic compound can be produced that have carcinogenic and mutagenic properties. Besides acute effects of oil spills, such as polluted beaches or mass-stranding of oiled sea birds, long-term effects of spills from these incidents include, e.g. locally increased levels of PAHs contamination in sediments. (Frumin, Germany).

State Oceanographic Institute, Moscow has modeled the following oil spill processes: transport and deformation of an oil slick due to time and spatially varying winds and currents; oil spreading diffusion and dispersion of oil; evaporation; sinking of oil in water, and consequent sedimentation; formation of oil-in-water emulsion; and weathering of oil, resulting in changes in density, viscosity, and water content, due to evaporation and emulsification. (S. Ovsienko, Russia)

In recent years a number of new oil terminals have been built in the Baltic Sea area, resulting in increased risk of transport of oil by ships and, consequently, an increased risk of accidents. In the Baltic Sea, about 2,000 large ships and tankers are at sea every day. Oil transport and oily residue discharges from ships represent a significant threat to marine ecosystems. One of the main tasks in the ecological monitoring of the Baltic Sea is an operational satellite and aerial detection of oil spillages, determination of their characteristics, establishment of the pollution sources and forecast of probable trajectories of the oil spill transport. (A.G. Kostianov et al, Russia)

The large oilfield "Kravcovskoe" (D-6), discovered in 1983 in the S.E. Baltic Sea near the Kaliningrad region of the Russia, is under development by "LUK Oil-Kaliningrad-morneft" Ltd. In early 2003, environmental monitoring of oilfield "Kravcovskoe" was carried out by LUK oil. The monitoring includes 22 regional and 12 local stations situated at distances of 100, 500 and 1000 m from the drill site, per HELCOM recommendations, and satellite monitoring was begun. Three ship surveys by R/V "Professor Shtokman" were made during 2003. Measurements were used for estimating hydrological, hydrochemical and biological parameters of sea water from bottom to surface. The data base and special Geographical Information Systems (GIS) are developed for hydrodynamic and biogeochemical modeling. The monitoring data, received before the exploitation of the oilfield, provides initial background conditions of the marine environment. (Pichuzhkina O.E. & Alexeeva V.V., LUK Oil Ltd, Kaliningrad; Sivkov V.V., Shchuka S.A., Russian Academy of Sciences)

Since 1993, there is no more regular aerial surveillance of the oil spills in the Russian sector of the southeastern Baltic Sea. Today, the monitoring of the southeastern Baltic sea surface temperature, sea level, chlorophyll concentration, mesoscale dynamics, wind and waves, oil spills and some of the meteorological parameters is organized based on the satellite IR and VIS data (AVHRR NOAA, SeaWiFS, MODIS), altimetry data (TOPEX/Poseidon, Jason-1), and SAR imagery (ERS-2, ENVISAT). As the Baltic Sea Ecosystem undergoes growing human-induced impacts, especially associated with increasing oil transport and production, further research of the links between physical, chemical and bio-

logical parameters of the ecosystem, a complex monitoring of the Baltic Sea state, and especially, the oil spills monitoring are of a great importance.

(A.G.Kostianoy et al, Russia)

Oil Spill Identification Sensor (OSIS) project was established to pursue implementation of the MARPOL 73/78 annex 1 protocol on offshore installations in line with what is already implemented on vessels. The high number of offshore installations within the "Special Areas" have so far been exempt from the directive, because of lack of surveillance methods capable of monitoring oil spills from offshore installations effectively. The objective for the OSIS project is to develop and demonstrate a sensor system mounted directly on offshore installations performing 24 hours a-day surveillance, providing a means to remove the legislative exemption. The input to the OSIS system is collected by a sensor pack based on advanced microwave sensors placed on the offshore installation. The sensor pack is continuously monitoring the surrounding waters measuring both area and volume of oil spills. Based on data from the sensor pack a rule based pattern recognition system identifies the oil spill. When an oil spill is detected, pictures are transmitted by satellite link to an onshore based central server with access by governmental and non-governmental groups. (J. Holst, Denmark).

DANGEROUS MATERIALS

Every year, there are increase in crude oil and oil production transportation. New oil terminals were constructed in the Baltic Sea: Butinge, Primorsk, Vysock, extend oil terminals in the main East Baltic ports. Navigational risk assessment is very important, to find legal and organizational solutions to decrease navigational and environmental risk (V. Paulauskas et al, Lithuania)

The ecological threat posed more than 300,000 tons of chemical weapon dumped in the shallow depth of the Northern European seas after the Second World War demands the urgent attention of the international community. The amount dumped represents more than three times as much as the total reported chemical arsenals of United States and Russia. The munitions were disposed of where fishing is actively pursued in close proximity to densely populated coastlines, with long-term consequences. Also, the corrosion of the shells and rounds which were dumped five decades ago is progressing fast now. (Frumin, Germany)

Baltic Sea priorities are: environmental problems, environmental forecasting, ecological risks assessment from various pollutants, including those from dump sites of chemical weapons. This involves the study of processes of intra-basin mixing, and basin/basin exchange with dissolved and suspended matter. Care must be taken with dangerous situations. Such measurements were taken in the Bhornholm dump site of chemical weapons (2000), in Arkona/Bornholm (2001) and Bornholm/Slupsk Furrow (2003) water exchange areas, and in the vicinity of a marine petroleum production platform built on the Sambian-Curonian Plateau not far from Klaipeda. (V.Paka, Russia)

There are 132 Hot Spots around the Baltic Sea. Many chemicals get into the sea during their manufacturing, pro-

cessing, transportation and application in remediation as a consequence of emergency spills. The main ecological problems of the Baltic Sea are eutrophication, pollution with harmful and toxic substances, oil-spills accidents and sea-dumped chemical weapons. The greatest quantity of total phosphorus and total nitrogen causing eutrophication goes into the sea from the territory of Poland, and then follow Russia, Sweden, Finland, Denmark, Latvia, Estonia and Germany. There are a lot of chemical pollutants in the water and sediments of the sea (heavy metals, organo-chloro compounds, polycyclic aromatic hydrocarbons, phenols, petroleum products). According to the literature data the residence time of metals in an ecosystem of the Baltic Sea is rather insignificant for lead (7 years), cadmium (6 years) and mercury (6 years), it is a little bit more for zinc (10 years) and maximum for benzo(a)pyrene (20 years), copper (27 years) and PCPs (35 years). The entry of copper, lead and PCBs exceeds the marine assimilation capacity. (Frumin, Germany).

MARINE LIFE

Coastal fish monitoring has been carried out in the Baltic Sea coastal zone at the area north of Palanga and in two different areas of the Curonian Lagoon since 1992. Fish monitoring was performed annually using multimesh gill nets standardised and adopted by HELCOM to be used along the coastal zone of the Baltic Sea (Neuman et al., 1997). The main reasons of freshwater and migratory fish abundance increasing could be attributed to more intensive freshening and as the result warming of water in the coastal zone in process of Klaipeda Strait deepening. Migratory fish species were improved by decreasing pollution in the Nemunas River Basin (Stankevicius; Dubra, Lithuania).

Predominance of cyprinids indicated a high level of eutrophication, especially in the central part of the lagoon close to Nemunas river delta. Water pollution in Nemunas river basin and Curonian Lagoon has decreased during recent years and probably caused the changes in fish species composition. Significant decrease in roach and silver bream catches and increase in perch, pike-perch, and vimba and twaite shad abundance were noted during recent years. (R. Repeeka, L. Lozys, Lithuania)

TECHNOLOGY

Naval oceanography utilizes ships, undersea vehicles and the application of oceanographic models and data bases. The latest instrumentation includes multi beam systems for hydrographic measurement and backscatter measurements. Environmental acoustic measurements are taken to determine ambient noise and transmission losses. Operations include application of laser hydrography and multi spectral scanner for coastal survey. Unmanned untethered vehicles offer great potential for future applications in oceanographic measurements. (E.Gough, J.Carroll, USA)

A cost-effective strategy for monitoring wetland change uses Landsat TM to detect biomass change over large regions and High-resolution IKONOS satellite imagery to study detail sites. These new techniques improve monitoring wetland losses, fragmentation, invasive species, riparian buffers and

Chlorophyll concentration. (V. Klemas, USA)

A new effect of changing of radar Doppler shifts in slicks has been revealed in experiments, showing that the difference between radar Doppler shifts in slicks and nonslicks depend strongly on the film elasticity. The effect of changing of Doppler shifts in slicks can be used to develop new algorithms of radar remote sensing of marine slicks. (S.A. Ermakov et al, Russia)

To improve the monitoring with high frequency sampling at some geographical spots, SMHI, Sweden has evaluated an advanced oceanor buoy system for the open sea. The platforms are located in central Kattegatt and the western northern Baltic Proper. It measures 60 parameters and transmits the data, using the Orbcomm communication two-way system, every hour to land. (Bertil Håkansson, SMHI, Sweden)

The Articulated Stable Ocean Platform (ASOP) is a new multi function, drilling, production and storage system. Upright floats which are free to move in six degrees of freedom provide buoyancy and stability. Model basin test results showed superior motion characteristics compared to semi submersibles and spars. (V. Grinius, H. Elgamiel, B.Mooney, USA)

Unattended moored profilers or platforms have been identified and recognized as important and economical tools for collecting water column data. Two profiling concepts: the buoyancy engine profiling system SEATRAMP from Ocean Origo AB, Sweden and a prototype underwater winch system of the University of Bremen. Sea Tramp is an autonomous, multicycling, data collecting titanium platform designed for long term unattended marine monitoring SEATRAMP is equipped with a NAS-2E nitrate analyser, SeaBird CTD, oxygen, chlorophyll, tilt, transmittance and PAR (light) sensors to achieve high resolution depth profiles with only one single set of user selectable sensors. Underwater winch systems may under certain conditions be advantageous to use. The prototype system, Octopus of the University of Bremen is especially designed for small payloads and allows for real-time accessibility of moored sensors. (S. Skoglund, Sweden: C. Waldmann, Germany).

Contaminated sediments settle out of the water column into the surficial marine sediment layer in the estuaries and coastal areas, that most affects the benthic organisms. The Gamma Isotope Mapping System (GIMS) and the Continuous Sediment Sampling System (CS3), developed at the Center for Applied Isotope Studies, The University of Georgia responds to the growing need for a cost-effective tool that can rapidly assess the environmental impact. Capable of mapping radionuclides, metals, and organic compounds, the combined GIMS/CS3 has been widely utilized in tracking both point and non-point source marine sediment contaminants in estuarine and offshore environments. The system consists of a towed seafloor sled, which allows insitu radionuclide measurement, and fine-grained sediment sample collection while the survey vessel is underway. Detailed two- and three-dimensional maps are compiled from the data collected by the GIMS/CS3. The individual and combined seafloor mapping systems have been widely applied by the U.S. EPA, U.S. Geological Survey, U.S. Army Corps

of Engineers, and many other state and federal agencies. (S Noakes, J.Noakes, USA).

In-situ bioremediation of contaminated soils and groundwater can be treated using surface application and mobilization of nutrient amendments (SAMNA) and nutrient injection. SAMNA is a demonstrated low-cost in-situ bioremediation approach that can be applied to the marine environments and should be less expensive than existing conventional methods. (W. O’Niell, USA)

NOAA’s Undersea Research Program places scientists underwater using remotely operated vehicles, autonomous undersea vehicles, and ocean observatories with specialized

sampling gear and instrumentation has provided investigators with the capabilities to sample, sense, and image the coastal ocean environment not possible using conventional surface-based technologies and techniques. (A. Kalvaitis, USA)

ACKNOWLEDGEMENT

The writer, Co-Chairman Dr.Algirdas Stankevicius and the Symposium Committee recognize the valuable contributions of the authors and the active participation of all attendees. We would like to welcome you to The Second US-Baltic International Symposium in the Spring of 2006.

Meet the New IEEE OES AdCom 2004-06



Elizabeth Creed

Elizabeth (Liz) Creed graduated from Goucher College with a B.A. in Biology in 1981 and received a M.S. in Marine Science from the University of South Carolina’s Marine Science Program in 1983 (Bruce Coull, advisor). In 1988 she earned a B.S.E.E. from North Carolina State University.

Liz worked as a field researcher from 1983-1984 at the University of South Carolina and then at NC State University from 1984-1987. In 1987 she returned to school to earn a bachelors degree in electrical engineering. After completing this degree she worked in the 16Mb DRAM design group at Texas Instruments from 1989-1993. Since 1993 Liz has been a Senior Marine Scientist with the Institute of Marine and Coastal Sciences, Rutgers University. At Rutgers she has worked on a number of projects including the COMOP, NOPP and HYCODE experiments in 1997-2001. She is presently working on the development of the Slocum Electric Glider, demonstrating the capabilities of the Glider in scientific applications.

Liz has been an IEEE/OES member since 1987. She is presently serving on the Current Measurement Technology Conference Committee.



Enson Chang

Dr. Chang earned his B.S. degree in physics and math from Harvey Mudd College in 1983, and a Ph.D. degree in theoretical condensed matter physics from the University of California, Santa Barbara in 1988. He is one of the pioneers and recognized experts in synthetic aperture sonar (SAS), a field which has grown rapidly in the past several years, bringing a

revolutionary advancement to underwater imaging and explo-

ration. Enson was an integral part of the DARPA program during the 1990’s which lead to the first demonstration of long range SAS. The success of this program sparked the development of an entire new generation of SAS systems for both military and commercial applications, a number of which will be UUV based.

During the last several years Enson has actively engaged in research to extend our understandings of SAS and to improve the technology beyond its current capabilities. He is in charge of the SAS R&D group at DTI (Dynamics Technology, Inc.) and is personally responsible for a number of programs to probe the fundamental environmental limitations of SAS, refine autofocusing techniques, develop algorithms for extending the area coverage rate of SAS, and to support the development of real-time processing capability. He is also leading a new thrust to introduce synthetic aperture techniques into very long-range SAS (several to 10’s of kilometers) for applications such as anti-submarine warfare (ASW) and undersea salvage operations. If the preliminary success of this program continues, this technology could bring a transformational change to how we conduct ASW.

Prior to his work in underwater acoustics, Enson spent a number of years doing research in non-acoustic ASW sensor technologies, including synthetic aperture radar, LIDAR, and low-frequency electromagnetics. Enson is a member of the IEEE/OES and the Acoustical Society of America. He is a frequent speaker at OES/MTS conferences and is an avid promoter of the SAS technology.



Daniel D. Sternlicht

Daniel D. Sternlicht (M’88) recently joined Dynamics Technology, Inc. as Director of the Synthetic Aperture Sonar Business Unit. He holds a B.A. in Marine Biology from the University of Pennsylvania, Philadelphia, and an M.S. in Electrical Engineering from the University of Hawai’i, Manoa, where he developed sidescan

sonar image processing techniques in conjunction with

Seafloor Surveys International (now Fugro SSI). In 1999, Sternlicht received the Ph.D. in Electrical Engineering and Applied Ocean Science from the University of California, San Diego. As a Research Assistant at Scripps Institution of Oceanography's Marine Physical Laboratory, he applied recent advances in high frequency acoustic backscatter theory to develop a quantitative method of acoustic seafloor characterization. From 1998-2003 Sternlicht worked as Senior Principal Engineer and Countermeasures Programs Manager at ORINCON Defense (now Lockheed Martin ORINCON), where he developed detection algorithms for sensor fusion within a multiple hypothesis tracking system, and led an ONR-funded mine countermeasures program in which acoustic image and signal classification algorithms are being fused for classification of buried objects. Sternlicht is currently Chair of the San Diego IEEE OES Chapter. He served on the OCEANS 2003 Technical Program Committee, and since 2001 has chaired OCEANS technical sessions ranging from Seafloor Characterization to Automatic Target Recognition. He is a member of the Acoustical Society of America, the American Geophysical Union, the National Defense Industrial Association, and the Mine Warfare Association.

Robert Bannon



Bob Bannon is an IEEE Fellow, and holds a BSEE, MSEE, and multiple MBA's from Pennsylvania State University, Wharton School - University of Pennsylvania, George Washington University, and Harvard Graduate School of Design. Bob was previously a Director at AT&T and Bell Labs and after 31 years of service retired

to establish Bannon International Consulting LLC in 1998 and S4 Intelligence LLC in 2002. Bob has been instrumental in development of special underwater protection, installation, maintenance and repair techniques for AT&T and other Underwater Telecommunications Companies. He was responsible for designing 18 special application ROVs, and various Autonomous Underwater Vehicles (AUV's), and Unmanned Surface Vehicles (USV's). As a lead scientist and Sr. Systems Engineering Consultant for various major defense contractors, he has made significant contributions to the use of Sonar and Sensor Suites for underwater detection and identification for the U.S. Navy and other government applications. Bob is also a 'Contributing Author' - Undersea Vehicles and National Needs (Marine Board National Academy of Science), National Research Council Commission, and a Blue Ribbon Panelist on "Restoring Cueing in the Contested Littorals", and other Undersea Warfare initiatives. Bob serves as an advisor on business continuity, risk assessment and mitigation, infrastructure protection, and homeland security. Mr. Bannon has lectured at the Armed Forces Industrial College on Future Computer Directions -Advanced Sensor Technolo-

gies and the U.S. Naval Academy on Computer Graphics for Underwater Vehicle Design. Bob is a member of the Naval Submarine League (NSL), Navy League, Marine Technology Society (MTS), and a Life Member of the National Defense Industry Association (NDIA).

Pamela Hurst



Pam Hurst was the Chair of the IEEE-OES 2003 Homeland Security Technology Workshop for Maritime Technologies. Pam holds a Master of Business Administration, Program Management from National University, San Diego, a Bachelor of Engineering Science from University of Rhode Island, and a Certificate

for Program Management - PMI (Government and Commercial) from George Washington University. She is currently the Manager - Business Development and Business Continuity at Lockheed Martin Maritime Systems and Sensors (MS2) Perry Technologies. She is responsible for development of business continuity concepts and survivability plans that allows LMCO to withstand natural disasters and terrorist threats and attacks against the LMCO financial, physical plant and personnel resources. This encompasses risk assessment reviews, updating emergency procedures and security processes, and modification of personnel protection technologies required to limit, preempt and disrupt terrorist threats and activities against Lockheed Martin, in particular Perry Technologies. Pam is also responsible for advanced and special programs and unmanned maritime systems. Pam has 34 years supporting USN, government agencies and the ocean community in Underwater Vehicle and Undersea Telecommunications Technology. Pam took early retirement from General Dynamics before joining Lockheed again. She was previously the Director, Program Integration and Business Development/ Program Manager - Advanced Projects for Government Programs at General Dynamics Advanced Technology Systems (formerly Bell Labs & Lucent, now GD AIS) in Whippany NJ, Sub-Contract Manager for Lockheed Sunnyvale, CA, and Acting Director/Manager, Systems Technology for Classified Programs at Honeywell - Marine Systems Division (formerly Hydro Products/ Alliant Tech, now Raytheon). Previous to that, she was the Project Manager of the U.S. Navy's MK-11 deep saturation diving system for the Deep Submergence Program and an engineer in the Life Support Group/ Material Lab/ Electro-Mechanical Engineering Department at Westinghouse Electric Corporation, Oceanic Division in Annapolis, MD.

Bob Spindel

Dr. Spindel is Professor of Electrical Engineering, Adjunct Professor of Oceanography and Director Emeritus of the Applied Physics Laboratory of the University of Washington. He served as Director from 1987 to 2003. Dr. Spindel received his bache-



lor's degree in Electrical Engineering from the Cooper Union, New York, New York, in 1965 and the M.S. and Ph.D. degrees from Yale University, New Haven, Connecticut, also in Electrical Engineering, in 1966 and 1971, respectively. During 1971 he was a Postdoctoral Research Fellow at the Woods Hole Oceanographic Institution, Woods Hole, Massachusetts. In 1972 he joined the

Scientific Staff of the Institution in the Department of Ocean Engineering. He was appointed Chairman of the Department in 1982 and served in that capacity until 1987 when he joined the University of Washington as Director APL.

His research specialty is underwater acoustics. He has authored or co-authored over 100 scientific and technical

publications, and has served as Chief Scientist on many research cruises. Dr. Spindel was awarded the A.B. Wood Medal of the British Institute of Acoustics in 1981, the Gano Dunn Award of The Cooper Union in 1988, the IEEE Oceanic Engineering Society's Technical Achievement Award in 1990, the Secretary of the Navy and The Oceanography Society's Walter Munk Award in 2001, and the Navy Meritorious Civilian Service Award in 2003. Dr. Spindel has served on many national advisory panels and committees, including the National Research Council's Naval Studies Board. He is presently Vice-Chair of the Navy's Naval Research Advisory Committee. He is a Fellow of the IEEE, the Acoustical Society of America, and the Marine Technology Society. He served as President of the latter organization from 1993-5. He has been an Associate Editor of JOE since 1980, has chaired two OCEANS conferences in Seattle, and has been a member of the AdCom and its predecessor, the Council of Oceanic Engineering.

National Ocean Sciences Bowl

The 7th Annual National Ocean Sciences Bowl, organized by the Consortium for Oceanographic Research and Education (CORE), was held in Charleston, SC April 25, 26, 2004. Once again the Oceanic Engineering Society was a sponsoring member and presented awards to the 5th through the 8th place winning teams. Twenty-Four high school teams, all winners of regional competitions, compete in the national finals. Each team has four members that compete with other teams in answering questions. Teams practice for months with their coaches to prepare for regional competitions. Questions are presented in "buzzer" rounds (rapid-fire multiple choice or short answer) and the "team challenge", that gives the students an opportunity to apply their critical thinking skills to questions involving real-time data and cutting edge research and policy issues.

The questions asked are related to ocean biology, chemistry, geology, physics, navigation, geography, and related



history, literature and public policy. The teams in the 2004 competition were very well matched in all of the double elimination rounds were required to select the winning teams. IEEE/OES presents four \$500.00 awards to the 5th through the 8th team schools for resources for the teams. COL Norman D. Miller presented awards at the Awards Ceremony to Santa Monica High School (5th), Maritime and Science Technology High School, Miami (6th), Maui High School, HI (7th) and Marshfield High School, WI (8th). The teams were most appreciative of the awards and promised to work hard to return next year! If you are interested in checking out your knowledge go to the NOSB Web Site at www.nosb.org and click on "Test Your Ocean Knowledge".

Norman D. Miller, P.E.
IEEE/OES
Student Activities Coordinator



Left to Right, RADM Richard West (USN, Retired), Shea Chyon, Marshfield High School, Wisconsin, 8th Place, Lake Sturgeon Bowl Caine Jette, Maui High School, Hawaii, 7th Place, Aloha Bowl Zachary Sherman, Maritime and Science Technology High School, Florida 6th Place, Manatee Bowl Matthew Gilbert, Santa Monica High School, 5th Place, Los Angeles Surf Bowl.

Report to OES Newsletter on IEEE OES AdCom Meeting, held in Houston, Texas, from 2-3 May, 2004 (by Steve Holt, OES Secretary)

This article summarizes the report written by Steve Holt (OES Secretary) on the IEEE Oceanic Engineering Society (OES) Administrative Committee (AdCom) Meeting, held in Houston, Texas, from 2-3 May, 2004. The IEEE OES AdCom Meeting was held at the Guesthouse Inn in Houston, Texas.

Several issues dominated this meeting. The main ones were:

- Most of the business at hand was the reworking of the OES Constitution and Bylaws.
- Consideration of proposed changes to the OES Field of Interest (FOI). The proposed changes were agreed upon by those present and a letter was sent to the IEEE TAB requesting approval.
- Norm Miller's earlier work in chairing a subcommittee to look at possible Constitution and Bylaw changes was acknowledged.
- Concerns were expressed by Joe Vadus which addressed his concerns over the proposed process to amend the Constitution and Bylaws. He had six issues which were addressed and voted upon by those present. A committee was formed to implement the above approved motion.
- Todd Morrison gave a presentation to the AdCom members. His presentation addressed the review of current practices related to preparation of the annual OES AdCom Ballots.
- Tom Wiener submitted a report as President of the OES.
- Stan Chamberlain submitted four reports as Vice President of Technical Activities. They were (1) his report on his input to the questionnaire for the TAB Society Review Committee, (2) his Technical Committee Report, (3) his OES History Report, and (4) the Oceans Conferences Historical Archive for the years 1999-2003.
- Joe Vadus submitted his report on OCEANS Conferences and Symposia.
- Fred Maltz submitted his Newsletter Editor's Report.
- Bob Bannon and Pam Hurst gave a briefing on the Homeland Security Technology Workshop in 2003 and the upcoming one in 2004.
- Jim Lynch presented his JOE Editor's Report.
- Jim Collins submitted a copy of the March 2004 IEEE Membership Development Progress Report.
- Norm Miller submitted information on Student Projects.

In summary, there were six motions generated at this meeting and they are summarized below:

- Mot-Hou-AdCom-04-1. A motion was made to approve the Minutes from the OES AdCom and ExCom meetings in San Diego, California (in September, 2003) and Falls Church, Virginia (in January, 2004) respectively.
- Mot-Hou-AdCom-04-2. A multipart motion was present-



Steve Holt

ed from Joe Vadus which addressed the following six issues: (1) The OES AdCom nominate, and approve (by private ballot), a committee of at least six AdCom members to determine the scope and extent of the revisions needed to the present OES Constitution and Bylaws, (2) The AdCom Committee (shall) conduct a study of these Revisions to the OES Constitution and Bylaws following a demographic, parliamentary process, (3) Make recommendations for AdCom deliberation, (4) Vote (via private ballots), (5) The AdCom Committee should then present the results for approval by the IEEE, and then (6) Present it to the OES membership for a ballot

- vote. Each of the six components of this motion were voted upon separately and approved unanimously by all present, except the first component, which was voted against by Dr. Rene Garello and Dr. Christian de Moustier. It should be noted that since no formal balloting process is yet available by mail (especially for component 6), all voting will be done privately and by e-mail to Steve Holt (OES Secretary), who will gather and record all votes under the strictest secrecy.
- Mot-Hou-AdCom-04-3. A motion was made which called for the members present to select the AdCom Committee to implement the approved motion called for in Mot-Hou-AdCom-04-2. The following members volunteered to comprise this committee: Tom Wiener, Norm Miller, Jim Collins, Glen Williams, Stan Chamberlain, Joe Vadus, Pam Hurst, Christian De Moustier, Steve Anderson, and Todd Morrison (added later). Henceforth, this entity shall be referred to as the AdCom "Committee of Ten" Jim Collins volunteered to serve as the Chair of this committee. A motion was made by Glen Williams to approve this committee by acclamation. Claude seconded it and it was then voted on and approved unanimously.
 - Mot-Hou-AdCom-04-4. A motion was made to take the original action proposed by Norm Miller (contained in his 16 April, 2004 letter), which states "We move the adoption of the proposed amendments", formally off the table for discussion at this meeting in lieu of the formation of the new AdCom Committee which will address the OES Constitution and Bylaw changes. This motion was voted upon by the AdCom members present and was approved unanimously.
 - Mot-Hou-AdCom-04-5. The AdCom ballot will include all nominations by petition (those with signatures from 1% of the membership). The ballot will also and independently include all legitimate nominations (legitimate as defined in the current Bylaws) up to a total of 12 (this is in addition to the nominees by petition). If fewer than 12 legitimate nominations are submitted, all

of the nominees will be included on the ballot. If more than 12 are submitted, the Nominating Committee will select the 12 candidates from those nominated. Any candidate removed from the ballot by the Nominating Committee will be informed of the change and will be allowed up to 30 days to acquire the requisite number of signatures to be restored to the ballot as a nominee by petition.

- Mot-Hou-AdCom-04-6. There was a motion that the new OES DVD archive to be produced in early 2005 would be

offered at the following prices: (1) all OES members will be given a free copy, (2) IEEE members will be charged \$100 each, and (3) all others will be charged \$1,000 each. The existing CD-ROM's of the OES archives will be given out at the 2004 Homeland Security Workshop to all OES members in attendance, and the CD-ROMs will also be used to entice attendees to join the OES. Thus, existing CD-ROMs will be given to all new members joining at the 2004 HST Workshop". This motion was voted upon and passed unanimously.

Autonomous Underwater Vehicles 2004 A Workshop on Multiple AUV Operations

17 - 18 June 2004

Sebasco Harbor Resort

Sebasco Estates, Maine

Workshop Summary

A very successful workshop on cooperating multiple AUVs was conducted at Sebasco Harbor Resort, Maine. Over 60 people attended from 15 states and 5 countries.

The workshop CD will be available mid August 2004. The CD will include all technical papers, their presentation material, summaries by session facilitators, and an overview of AUV 2004. The workshop program is presented for your review.

AUV 2004 Program

Keep posted on the OES web site for AUV 2006. The venue and subject matter are still being evaluated. It will be a limited attendance workshop focusing on a specific AUV technology.

To Order an IEEE/OES AUV 2004 CD

Cost: \$73.00, check only, payable to IEEE/OES-AUV 2004

Mail to: Claude Brancart

18 Juniper Road

Brunswick, Maine 04011-3418 USA



Claude Brancart, Workshop General Chairman, Joel Parry, of Draper Lab, and Leslie Brancart



Claude Brancart and Dick Blidberg

Soundings

by John Irza



Welcome to the latest installment of “Soundings”, a column that reports on a broad spectrum of news items from the mainstream media as they relate to Ocean Engineering technologies. The purpose of this column is to inform the ocean engineering community of our industry’s visibility in the media and how the general public perceives our efforts.

U.S.S. Razorback Completes Dual-nation Duty

If you mention “Little Rock, Arkansas” to anyone, chances are they will think of former US President Bill Clinton. Little Rock made newspaper headlines again recently but for reasons related to naval history, not Presidential politics, as the submarine U.S.S. Razorback arrived at its final duty station, being a key attraction of the Arkansas Inland Maritime Museum.

Initially deployed during World War II, the Razorback was decommissioned by the US Navy in 1971 and sold to Turkey where she entered into service as the TCG Murat Reis. After serving more than 30 years in the Turkish Navy, she was retired and offered for sale for a price of 1 million dollars. However, the Turkish government slashed the asking price with the understanding that a Turkish-US relations center would be established as part of the deal with the Arkansas Museum.



Sub Suit Succeeds in Hollywood

Litigation and lawsuits are nothing unusual in the maritime industry. Nor are they unusual in Hollywood. However it is unusual when both worlds collide. Such was the case when a former Soviet Union submarine captain sued a Hollywood studio for making a movie deemed “disparaging” about the sinking of his vessel.

Various mainstream media outlets covered the conclusion of the case of Captain Igor Britanov vs. Warner Brothers Studio. Captain Britanov was the captain of the Soviet nuclear submarine K-219 when, while on patrol 680 miles off the coast of Bermuda, an explosion shook the submarine, causing a fire to break out near the ship’s reactor and also causing a missile hatch seal to leak, allowing seawater to react with residue of the missile’s liquid fuel. Parts of the boat began to fill with poisonous gas and ultimately 4 crewmen were lost. The submarine sank before being towed from the scene.

Warner Brothers Studio produced a film, “Hostile Waters”, based on the event and Captain Britanov later sued the studio for not seeking permission to use his character or his story. He also charged that they did not accurately portray events, which resulted in making him appear incompetent.

After three years of hearings, the US court found in favor of Captain Britanov. Russian media reported a settlement on the order of several tens of thousands of dollars (USD).

The Former Soviet Union claimed the damage to the K-219 was caused by a collision with the American submarine USS Augusta (SSN 710). Officially, the US Government continues to deny that this was the case.

Navy Commissions Destroyer in Honor of Momsen - First Destroyer to Use Remote Minehunting System

Vice Admiral Charles “Swede” Momsen made headlines across the world in May 1939 when he directed the successful rescue and recovery operation for the USS Squalus which had sank in 243 feet of water off the coast of New Hampshire. Using the McCann Diving Bell, which Momsen and Rear Admiral Allan R. McCann developed, 33 crewmen who survived the sinking of the Squalus were successfully brought to the surface. Momsen then led the 113 day salvage operation, and brought the Squalus back to dry dock at the Portsmouth Navy Yard. The Squalus was later refurbished and recommissioned the USS Sailfish and she performed with distinction in the Pacific.

Recently, the US Navy commissioned it’s newest destroyer the USS Momsen (DDG 92). The Momsen is the first of five DDG’s that has state of the art electronics and weapons systems, including the Remote Mine Hunting (RMS) system. The RMS, developed by Lockheed Martin, is an air-breathing diesel powered semi-submersible that is equipped with its own Variable Depth Sonar (VDS). Using line of site and over the horizon data and control links, the RMS provides destroyers with an organic mine reconnaissance capability.



Remote Minehunting Vehicle is lowered to the water by a unique dual-arm davit.



Remote Minehunting Vehicle towing Variable Depth Sonar

Upcoming Conferences

IGARSS 2004

September 20-24, 2004
Anchorage, Alaska
www.igarss04.org

SEA Tech Week - International Week for Marine Science and Industry

October 18-22, 2004
Brest, France
www.oceanicengineering.org

4th Ocean Technology Workshop

October 19-21, 2004
Newport, Rhode Island
www.motn.org

UDT Hawaii 2004

October 19-21, 2004
Honolulu, Hawaii
www.udtnet.com

IEEE Sensors 2004 The 3rd IEEE Conference on Sensors

October 24-27, 2004
Vienna, Austria
www.ieee.org/sensors2004

Oceans/Techno-Oceans 2004

November 9-12, 2004
Kobe, Japan
www.oceans-technoocean2004.com

2004 IEEE OES Homeland Security

Technology Workshop
December 6-8, 2004
Valley Forge, PA

OTC '05

May 2-5, 2005
Houston, Texas
www.otcnet.org

Oceans '05 Europe

June 20-23, 2005
Brest, France
www.Oceans05Europe.org

Oceans 2005 MTS/IEEE

September 19-23, 2005
Washington, D.C.
www.oceans2005.org



2004 IEEE OES Homeland Security Technology Workshop Ocean and Maritime Technologies for Infrastructure Protection Call For Abstracts & PowerPoint Presentations

Location: Valley Forge Convention Center at the Radisson, 1160 First Ave., King of Prussia, PA 19406
(Valley Forge)

Date: December 6, 2004 (Monday Evening Reception)
December 7 and 8, 2004 (Tues and Wed Program; Tues Evening Reception and Dinner)

Pam Hurst, Chair, Bob Bannon, Co-Chair, Jim Barbera, Treasurer

Technical Program:

The IEEE Oceanic Engineering Society (IEEE-OES) Homeland Security Technology Workshop, co-sponsored by the NAVSEA Warfare Center- Newport, provides an unprecedented opportunity to network with engineers, scientists, legal experts, and local, state, and federal government personnel who all share Homeland Security challenges. The Technical Program Committee is accepting abstracts for engineering and scientific PowerPoint Presentations on Homeland Security Underwater and Maritime Infrastructure Protection, including biological and eco-system impact, and Port and Harbor Security.

Online Registration <http://www.oceanicengineering.org> (click on "Conferences & Workshops")

Early Bird Registration \$395 for IEEE members
(by November 3, 2004) \$495 for all others

Registration \$450 for IEEE members
\$550 for all others
Attendance limited to the first 500 Registrants

Corporate Tables in Hall for Product Info Display: \$750 per table

Points of Contact: Pam Hurst, 401-481-3828, e-mail: pjhurst@ieee.org
Siobhan Kern, 401-832-1253 e-mail: KernSH@nptnuwc.navy.mil

Abstract Deadline: September 22, 2004

Abstract Format: Author(s) Name, Affiliation, Title, Address, Phone Number, and e-mail
Abstract Topic, 100 Words submitted in MS Word format

Abstract Acceptance Date: October 8, 2004 - Presenters must pay registration within 10 days of acceptance

Electronic e-mail Abstract Submission ONLY to: e-mail: ieee_oes_hls_workshop@oceanicengineering.org

Presentation Format: Twenty minute Power Point Slides, followed by 5 minute Q & A

Last year over 80 technical speakers presented with outstanding attendee comments on quality and topics.

Questions on submittals: Glen Williams, Ph.D., P.E.
Computer Science Department
Texas A&M University
College Station, Texas 77843
e-mail: g-williams@tamu.edu

IEEE OES Homeland Security Technology Workshop

Topics:

The technical program offers two days of multi-track PowerPoint presentations or papers covering topics below.

- **Sensors and Vehicle Technology for Protecting our Ports, Waterways, and Coastlines**
 - § Unmanned Maritime Vehicles (UMVs)
 - § Sensor and Detection Technology
 - § Radar and Sonar Technologies
 - § Maritime Security Watercraft and Vehicles
 - § UCAV applications for Maritime and Ports
 - § Port and Harbor and Coastline Security

- **Preempting and Disrupting Terrorist Threat**
 - § Anti-terrorism Issues and Technologies

- **Maritime Domain Awareness**

- **Biometric and Screening – including Personnel and Containers**
 - § Personnel ID and Protection Technologies
 - § Wireless Role in the Maritime Security Environment

- **Technologies for Countering Chemical, Bio-terrorist, Terrorist Attacks on Ocean Industries**
 - § Chemical Sensor Systems
 - § Bio-terrorism Risk Assessment and Containment
 - § Toxic Sensors
 - § Explosive Detection
 - § Mine countermeasures
 - § IR Sensors
 - § Swimmer Detection, Engagement, and Neutralization
 - § Ocean and Harbor Forensics Surveillance Technologies
 - § USCG Harbor and Port Patrol
 - § Harbor Master and Port Agents Security Roles

- **HLS First Responders**
 - § Emergency Planning and Response
 - § Homeland Security –HSARPA Role
 - § Crisis Center Development
 - § Communications Standardization
 - § Recovery – Business Continuity

- **Beyond Homeland Defense and Homeland Security – Over the Horizon**

Keynote Speaker: Honorable Curt Weldon, U. S. Congress – Pennsylvania-7th District

Other speakers and dignitaries to be announced with acceptance

Points of Contact: Pam Hurst, 401-481-3828, e-mail: pjhurst@ieee.org
Siobhan Kern, 401-832-1253 e-mail: KernSH@nptnuwc.navy.mil

NEWS ITEM - WHOI SCIENTISTS TO BUILD HYBRID ROV

Woods Hole, Massachusetts, USA — For the first time since 1960, U.S. scientists will be able to explore the deepest parts of the world's oceans, up to 7 miles below the surface, with a novel underwater vehicle capable of performing multiple tasks in extreme conditions. Researchers at the Woods Hole Oceanographic Institution here are developing a battery-powered underwater robot to enable scientists to explore the ocean's most remote regions up to 11,000 meters deep. A spokeswoman said the hybrid HROV will be able to operate in two modes — as an autonomous or free-swimming vehicle for wide area surveys, and as a tethered vehicle for close-up sampling and other tasks. In the latter mode, it will use a novel fiber-optic micro cable only one thirty-second of an inch thick, a significant departure from the large, heavy cables typically used with tethered vehicles. The deep-sea vehicle will require new technologies such as ceramic housings for cameras and other electronic equipment to withstand the pressures at the vehicle's extreme operating depths, she said.

Funding for the four-year, \$5-million HROV project is provided by the U.S. National Science Foundation, with additional support from the U.S. Navy and the National Oceanic & Atmospheric Administration. Principal investigators are Andrew Bowen and Dana Yoerger of WHOI's Deep Submergence Laboratory in the Applied Ocean Physics & Engineering Department and Louis Whitcomb, an associate professor in the

Department of Mechanical Engineering at The Johns Hopkins University (Baltimore, Maryland). Whitcomb is also a visiting investigator in DSL. The new vehicle will undergo initial trials in three years.

Humans have been to the bottom of the Mariana Trench only once, in 1960, when the U.S. Navy bathyscaph Trieste descended with then Lt. Don Walsh and Swiss scientist Jacques Piccard. The Japanese ROV Kaiko dove to the bottom of the trench in 1995. It was lost earlier this year (See Oceansp@ce No. 494, July 7.) and no operational vehicles currently exist that are capable of reaching this depth.

"The HROV will enable, for the first time, routine scientific research in the deepest parts of the ocean, from 6,500 meters to 11,000 meters, a depth we currently cannot reach," says RAdm. Richard Pittenger, USN, Ret., and WHOI vice president for marine operations. "It will also afford access to other very hard-to-reach regions such as under the arctic ice cap. The HROV's real-time, wide-band link to the surface will put the researcher in the loop to view, assess, and command the vehicle throughout the duration of dive missions. It is the first capable and cost-effective technology that will enable scientists to pursue research projects on a routine basis in areas they have long wanted to study but have been unable to reach. HROV technology will help answer many questions about the deep sea." More at <http://www.whoi.edu/home/>.



Explore

IEEE Xplore™

www.ieee.org/ieeexplore

Now, the IEEE Xplore™ interface delivers personal subscriptions online.



The Oceans Conference is a major forum for scientists, engineers and end-users throughout the world for presenting the latest research results, ideas, developments and applications in all areas of Oceanic Engineering systems.

This conference, on the theme "Today's technology for a sustainable future", will provide a review of recent technical advances in oceanic engineering, science and technology.

OCEANS'05 Europe will comprise both a **SCIENTIFIC CONFERENCE** (oral and poster presentations) and a large State of the Art **EXHIBITION** in the field of Engineering and Marine Technology. Both will take place in the Brest downtown cozy conference center "Le Quartz".

The Technical Program Committee of OCEANS'05 Europe is calling for contributions for scientific and technical papers. Acceptance will be based on quality relevance and originality.

The conference proceedings will be published in DVD or CD-ROM format.

Contributions are invited in the form of an abstract of up to 1000 words to be submitted on the OCEANS'05 Europe web site:

www.Oceans05Europe.org

DEADLINE for abstract submission : November 19 2004
NOTIFICATION OF ACCEPTANCE : January 14 2005
FULL PAPER : April 1 2005

City of Brest

Brest in Finistère, the beginning of the world : steep cliffs, long sandy beaches, sharp reefs and the blue of Armor ("Land of the Sea"), the hills and green of Argoat ("Land of the Woods"). Brest in Brittany, a rich heritage of Breton culture : language, music, dance and a "spirit" - open to the world, curious about others and willing to share its wealth and diversity. Brest's geographical location, combined with the know-how of local companies, research institutes and a strong oceanographic tradition have all made Brest a focal point of excellence regarding the ocean. This situation reinforces, both nationally and internationally, the strong position held by Brest and its region in :

*Civilian and military research engineering
 Industrial activities and services related to the ocean
 Training institutions
 Fisheries*

The areas of interest include (non exclusive list):

1. Underwater Acoustics and Associated Processing
2. Underwater Observing Systems
3. Remote Sensing of Air/Ocean Surface
4. Naval and Offshore Technology
5. Information Technology and Data Management
6. Marine Environment and Pollution Monitoring
7. Non Acoustic Instruments and Associated Processing
8. Marine Policy and Ocean Management



copyright D. Farnet



copyright M. Cougnet

Tutorials

As part of the OCEANS'05 Europe focus on advanced technology, the conference Committee solicits proposals for half-day tutorials, in technology areas related to those highlighted in the Technical Program Topics. Interested individuals must submit a 500-words abstract on tutorial utility, focus and intended audience, a 200-words biography of the instructor and outline of material to be presented. Instructors will be compensated in accordance with the number of tutorial registrations.

Tutorials must be received by 19 November 2004 to be considered for acceptance.

Student Poster Competition

OCEANS'05 Europe will sponsor a Student Poster Session. Full time undergraduate and graduate students in engineering and science at accredited universities are solicited for papers dealing with new technology concepts, developments and applications which describe advances in science and engineering in the ocean environment and more specifically in the technical topics areas. Selected students will be invited to attend OCEANS'05 Europe and present their poster as guests of the conference.

Organizing Committee

General Chair:	René Garrello (ENST Bretagne)
Honorary Chair:	Rear Admiral Superintendent (École Navale)
Technical Program Chair:	André Quisquis (ENSIETA)
Exhibits Chair:	Bernard Gourvenec (ENST Bretagne)
Finance Chair:	Jacques Jestin (Technopôle Brest Iroise)
Tutorials Chair:	Muzell Zakharía (École Navale)
Local Arrangements Chair:	Jodile Gamito (Associated)
Publicity/Publication Chair:	Marielle Couchevieux (Technopôle Brest Iroise)
Student Program Chair:	Jean-Marc Le Caillac (ENST Bretagne)

OCEANS'05 Europe

ENST Bretagne - Technopôle Brest Iroise - CS83818 - 29238 Brest Cedex - France
 Tel : +33 (0) 229 00 1571 : Fax : +33 (0) 229 00 1096
 e-mail : rene.garrello@enst-bretagne.fr



Do not miss the first OCEANS in Asia!

OCEANS '04 MTS/IEEE / TECHNO-OCEAN '04

November 9-12, 2004, Kobe, Japan

OCEANS'04 MTS/IEEE / TECHNO-OCEAN'04 (OTO'04) is a joint international convention, combining annual OCEANS conference and exhibition usually held in the USA, with those of TECHNO-OCEAN held biennially in Japan. OTO'04 is the first OCEANS conference in Asia, crossing over the Pacific Ocean. OTO'04 offers an important and worldwide arena for everyone in ocean-related fields across the Pacific Ocean.

Plenary Speakers

OTO'04 Plenary Sessions will be held on Wednesday, November 10. We will have two plenary speakers. Dr. Conrad C. Lautenbacher Jr., who is Vice Admiral, US Navy (Ret.), Undersecretary of Commerce for Oceans and Atmosphere and NOAA Administrator, will give you a lecture titled "GEOSS: Towards Bridging the Gaps in our Global Observational Capacity". Prof. Takashi Furumura of Earthquake Research Institute, University of Tokyo, will deliver a lecture titled "Large Scale Simulation of Strong Ground Motions from Recent Damaging Earthquakes in Japan".

Technical Sessions

The Technical Program will provide you about 460 papers from some 40 countries and regions on various topics in 20 categories, which include ones that are unique to Asia, such as deep water applications and port & harbor/marine transportation. You can find the Technical Program in the advance program. For more information, please contact oto2004@ics-inc.co.jp

Tutorials

All tutorials will take place on Tuesday, November 9, 2004. 17 tutorials are scheduled to take place. You can find the themes and lecturers of tutorials in the advance program. Advance registration is highly recommended. For more information, please visit OTO'04 website, or contact oto_tutorial@ics-inc.co.jp

Advance Program

Advance Program is now available on the website. Please visit.

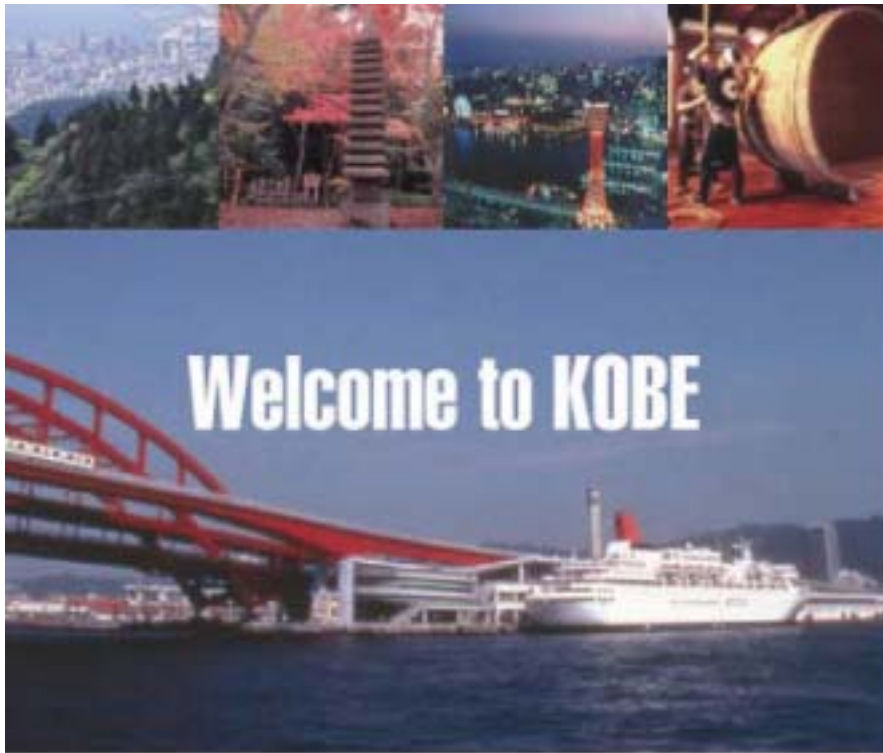
Registration / Hotel Reservation

On-line registration can be done through the website.

Exhibits

The conference exhibitions, with some 90 exhibitors and 180 booths, will show the latest instruments, equipment, technologies, and services. Please visit the website for exhibitor's information or contact oto2004exh@ics-inc.co.jp

www.oceans-technoocean2004.com



Welcome to KOBE

Outline of Kobe

Back in 1868, the Port of Kobe was opened to external trade. Since then Kobe has been developed into one of leading international trade ports in the world. Kobe is home to people from all over the world. In fact the population make-up includes residents from about 100 different countries. The long history of exchange with the outside world has made Kobe people open-minded and warmly hospitable to conference participants.

Nestled between the lush green of the Rokko Mountains to the north and shimmering water of Seto Inland Sea to the south, Kobe is blessed with beautiful natural surroundings. A mild climate together with its natural beauty makes Kobe an ideal venue for conventions.

Visitor attractions

Major visitor attractions in the city include Kobe Maritime Museum, Akashi Strait Bridge, Sake (Japanese rice wine) Brewery Museum and Arima hot spring. There are also quite a few cruise ships you can choose from.

Kobe is close to historical cities such as Kyoto, Nara and Himeji. Kyoto and Himeji can be reached in an hour by train while Nara in about two hours.



Kobe Convention Center



Kobe International Exhibition Hall



Access to Kobe

- From Kansai International Airport
65 minutes to Sannomiya
(down town Kobe) by limousine bus.
- From Osaka (Itami) International Airport
40 minutes to Sannomiya
(down town Kobe) by limousine bus
- From Tokyo
2 hours and 47 minutes to Shin-Kobe
Station by Shinkansen bullet train.



CHAPTER CHAIRMEN

Boston

John W. Irza
Sygnus Technology Inc.
Arlington, MA
781 648 2144
781 641 9974 (Fax)
jirza@sygnus.com

Canadian Atlantic
FERIAL EL-HAWARY
61 Bay View Road
Halifax Nova Scotia
Canada B3M 1N8
902 443 2400
902 445 5110 (Fax)

France

RENE M. GARELLO
GET - ENST Bretagne
CNRS FRE 2658 TAMCIC - Equipe TIME
Dept Image et Traitement de l'Information
Technopôle Brest Iroise - CS 83818
29238 BREST Cedex - FRANCE
(33) 98 00 13 71
(33) 98 00 10 98 (Fax)

Houston/Galveston Bay

AL WILLIAMS
FSSL Inc.
525 Julie Drive
Sugar Land, TX 77478
713 240 1122 ext 214
713 240 0951 (Fax)

Hawaii

Mark ROGNSTAD
University of Hawaii at Manoa
School of Ocean and Earth Sciences and
Technology
Hawaii Institute of Geophysics and Planetology
1680 East-West Road Post 816B
Honolulu, HI 96822
808 956 8712
808 956 6530 (Fax)

Japan

JUNZO KASAHARA
Earthquake Research Institute
University of Tokyo
1-1-1, Yayoi, Bunkyo
Tokyo 113-0032 Japan
+81 3 5841 5713
+81 3 5689 7234 (Fax)
kasa2@eri.u-tokyo.ac.jp

Norway

DR. OLAV EGELAND
Dept. of Engineering Cybernetics, NTNU
O.S. Bragstad plass 2D
N-7491 Trondheim, Norway
47 73 59 43 59
47 73 59 43 99 (Fax)
Olav.Egeland@itk.ntnu.no

San Diego

DANIEL D. STERNLICHT
ORINCON Defense
4770 Eastgate Mall
San Diego, CA 92121
858 795 1283
858 795 8532 (Fax)

Seattle

SHERI L. REES
Enginuity Development Networks, Inc.
116 NW 130th
Seattle, WA 98177
206 440 1455
206 440 1438 (Fax)
s.l.rees@ieece.org

Taipei, Taiwan

DR. SHENG-WEN CHENG
Professor
Dept. of Engineering Science & Ocean
Engineering
National Taiwan University
No. 1, Sec. 4, Roosevelt Road, Taipei, TAIWAN
886 2 23625470 Ext. 260 (Office)
886 937 049982 (Mobile)
886 2 23929885 (Fax)
niccheng@ccms.ntu.edu.tw

Washington D.C./No. Virginia

JAMES BARBERA
13513 Crispin Way
Rockville, MD 20853
301 460 4347
301 871 3907 (Fax)

Victoria

JAMES S. COLLINS
Dept. of Elec. &
Comp. Engineering
University of Victoria
P.O. Box 3055
Victoria, B.C. CANADA V8W 3P6
(604) 721-8610; (604) 721-6052 (FAX)
j.s.collins@ieece.org

OES Journal Associate Editors

ARTHUR B. BAGGEROER

Dept. Ocean Eng.-Rm. 5-204
Mass. Inst. Technol.
Cambridge, MA 02139
+1 617 253 4336
abb@arctic.mit.edu

D. RICHARD BLIDBERG

Autonomous Undersea
Systems Institute
86 Old Concord Turnpike
Lee, NH 03924
+1 603 868 3221
Fax: +1 603 868 3283
blidberg@ausi.org

BRIAN CALDER

Center for Coastal and Ocean Mapping
University of New Hampshire
24 Colovos Road
Durham NH 03824 USA
Tel: (603) 862-0526
Fax: (603) 862-0893
email: brc@ccom.unh.edu

WILLIAM M. CAREY

The Kerry Group LLC
79 Whippoorwill Rd.,
Old Lyme, CT 06371
+1 860 434 6394
kerrygtp@ctol.net

CHRISTIAN DE MOUSTIER

Center for Coastal and Ocean Mapping
Chase Ocean Engineering Lab
University of New Hampshire
24 Colovos Road
Durham, NH 03824-3525
Phone: 603-862-3434
FAX: 603-862-0839
email: cpm@ieece.org

JOHN E. EHRENBERG

Boeing Phantom Works
P. O. Box 3999
MC 84-41
Seattle, WA 98124-2499
+1 253 773 1332
john.e.ehrenberg@boeing.com

FERIAL EL-HAWARY

B.H. Engineering Systems Ltd.
61 Bayview Road
Halifax, Nova Scotia B3M 1N8
Canada
tel: 902-443-2400
fax: 902-445-5110
email: F.El-harwary@ieece.org

DAVID M. FARMER

Institute of Ocean Sciences
P. O. Box 6000, 9860 West Saanich Rd.
Sidney, BC V81 4B2 Canada
+1 250 363 6591
Fax: +1 250 363 6798
dmf@ios.bc.ca

RENE GARELLO

Telecom Bretagne
Dpt. ITI BP 832
29285 Brest Cedex France
33 2 98 00 13 71
Fax: 33 2 98 00 10 98
rcne.garello@enst-bretagne.fr

MALCOLM L. HERON

Physics Dept.
James Cook Univ.
Townsville, Queensland 4811
Australia
61 77 81 4127

JOHN J. LEONARD

Ocean Engineering Department
Room 5-422
Mass. Inst. Technol.
77 Massachusetts Ave.
Cambridge, MA 02139
+1 617 253 5305
Fax: +1 617 253 8125
jleonard@mit.edu

TAMAKI URA

Underwater Technology Research Center
Institute of Industrial Science
University of Tokyo
4-6-1, Komaba
Meguro, Tokyo 153-8505 Japan
+81-3-5452-6487
ura@iis.u-tokyo.ac.jp

HISAAKI MAEDA

Institute of Industrial Science
University of Tokyo
7-22-1, Roppongi, Minatoku
Tokyo 106, Japan
81 3 3402 6231 X2255
Fax: 81 3 3402 5349
maedah@iis.u-tokyo.ac.jp

ARYE NEHORAI

Dept. Elect. Eng. and Computer Sci.
Univ. of Illinois at Chicago
851 S. Morgan St.,
Rm. 1120 SEO
Chicago, IL 60607-7053
+1 312 996 2778
Fax: +1 312 413 0024
nehorai@eecs.uic.edu

JOHN D. PENROSE

Centre for Marine Science and
Technology
Curtin Univ, Kent SL Bentley,
Western Australia 6102
Australia 61 9351 7380
tpenrosej@cc.currin.edu.au

JOHN POTTER

Head, Acoustic Research Laboratory
TMSI and Elect. Eng. Dept.
National Univ. of Singapore
10 Kent Ridge Crescent
Singapore 117596
Fax: 65 874 2129
Fax: 65 874 8325
johnp@arl.nus.edu.sg

ROBERT C. SPINDEL

Applied Physics Lab.
Univ. of Washington
1013 N.E. 40th St.
Seattle, WA 98105
+1 206 543 1310
spindel@apl.washington.edu

RICHARD STERN

Applied Research Lab.
Penn State Univ.
P. O. Box 30
State College, PA 16804
+1 814 865 6344
rs@arl.vax.arl.psu.edu

DR. DAJUN (DJ) TANG

Applied Physics Laboratory,
University of Washington
1013 NE 40th Street,
Seattle, WA 98105
(206) 543-1290

ARTHUR B. BAGGEROER
Arctic/Antarctic Oceanic
Engineering, Information and Processing of
Acoustic and Electromagnetic
Phenomena

D. RICHARD BLIDBERG
JOHN J. LEONARD
AUV's, ROV's, Autonomous Systems,
Unmanned Vehicles, Intelligent Systems, and
High Level Control

BRIAN CALDER
Bathymetry Surveys, Mapping, Remote Sensing,
Sonar Image Processing

WILLIAM H. CAREY, Editor Emeritus
Acoustic Propagation and Scattering,
Signal Processing

CHRISTIAN DE MOUSTIER
Bathymetry, Surveys, Mapping, Remote Sensing,
and Sonar Image Processing

GEOFF EDELSON
Signal Processing, Array Processing, Synthetic
Aperture Sonar, Acoustic Communications

JOHN E. EHRENBERG
Acoustic Simulation and Sensors.

DAVID M. FARMER
Instrumentation, Acoustical Oceanography,
Air-Sea Interaction, Turbulence.

RENE GARELLO
Regional Editor France and Europe

MALCOLM L. HERON
Regional Editor South America, Australia and
Africa
Remote Sensing; Radar; Waves; Currents; Air-
Sea Interaction

DAVID P. KNOBLES
Seismo Acoustics, Seafloor Geophysics, Seis-
mology, Propagation, Scattering, Signal Pro-
cessing, Interface Waves

HISAAKI MAEDA
Regional Editor for Japan and Asia
Marine Hydrodynamics, Dynamics of Floating
Structures, Underwater Vehicles
Ocean Energy Utilization

ARYE NEHORAI
Array Processing; Statistical Analysis; Detec-
tion; Estimation

JOHN D. PENROSE
Regional Editor Western Australia

JOHN POTTER
Regional Editor Southeast Asia
Ocean Acoustics, Marine Mammal Acoustics

ROBERT C. SPINDEL
PETER DAHL
Acoustic Communication, Navigation and
Telemetry; Acoustic Tomography; Acoustic
Remote Sensing; Underwater Optics

RICHARD STERN
Engineering Acoustics; Equipment and
Devices, Instrumentation, Materials, Measure-
ment Techniques