



EDITOR: FREDERICK H. MALTZ

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Welcome to the participants in MTS/IEEE Oceans 2007 in Vancouver (see www.oceans07mtsieevancouver.org).

You have now joined us to explore the “Edge of Tomorrow.” You will learn about BC’s Neptune and Venus projects, which will usher in a new era in gathering data to understand the oceans. This Conference features a partnership of engineering / technology and scientific researchers. Vancouver, having a history of discovery and innovation in ocean systems and technology, is the home of many pioneers in these fields. We believe that our location at an international crossroads, equally distant from Europe and Asia, coupled with facilities and associated marine community and infrastructure provide the underpinning for a first class Oceans 2007 – Sep 29 thru Oct 4.

IEEE OCEANIC ENGINEERING SOCIETY

President

JAMES T. BARBERA
13513 Crispin Way
Rockville, MD 20853
+1 301 460-4347
+1 301 871 3907 (FAX)
j.barbera@ieeee.org

Secretary

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

Assoc. Newsletter Editor

JOHN W. IRZA
Bluefin Robotics Corp.
237 Putnam Ave.
Cambridge, MA 02139
(work) 617-715-7072
(home) 978-470-1276
(cell) 781-648-2144
jirza@ieeee.org

Vice President

Technical Activities
STANLEY G. CHAMBERLAIN
22 Heritage Road
Barrington, RI 02806
(401) 245-8914
s.chamberlain@ieeee.org

Treasurer

JERRY C. CARROL
411 Country Club Drive
Picayune, MS 39466
jerrycortez@charter.net

Newsletter Editor

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

Vice President,

Professional Activities
JAMES S. COLLINS.
Dept. of Elec. & Comp. Engineering
University of Victoria
P.O. Box 3055
Victoria, B.C. CANADA V8W 3P6
+1 250 595 6928
+1 250 595 6908 (FAX)
j.s.collins@ieeee.org

Journal of Oceanic

Engineering Editor
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@ieeee.org

Vice President

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

IEEE Newsletters

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

Vice President

Conference Operations
RENE M. GARELLO
GET - ENST Bretagne
CNRS UMR 2872 TAMCIC -
Equipe TIME
Dept Image et Traitement de
l'Information
Technopôle Brest Iroise - CS
83818
29238 BREST Cedex -
FRANCE
Tel : +33 (0) 229 00 13 71
Fax : +33 (0) 229 00 10 98
rene.garello@enst-bretagne.fr

**Web Coordinator
& Publicity**

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

EX-OFFICIO

Jr. Past President

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

Sr. Past President

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

Membership Development

KENNETH FERER

Nominations

CLAUDE P. BRANCART

Chapters

JAMES S. COLLINS

Journal Editor

CHRISTIAN DE MOUSTIER

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

JAMES S. COLLINS

**TAB Engineering Research and
Development Policy Committee**

JOSEPH R. VADUS

Student Activities Coordinator

NORMAN D. MILLER
2644 NW Esplanade Drive
Seattle, WA 98117-2527
206-784-7154, fax 206-784-0478
colmiller@comcast.net

ELECTED ADMINISTRATIVE COMMITTEE

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

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)

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)

MALCOM L. HERON
Professor of Physics
Director, Marine Geophysical Laboratory
James Cook University
TOWNSVILLE Q 4811
Telephone: 07 4781 5067
Facsimile: 07 4781 5880
mal.heron@jcu.edu.au

FREDERICK H. MALTZ
(see Newsletter Editor)

MILICA STOJANOVIC
MIT E38-376
Cambridge, Ma 02139
e-mail: millitsa@mit.edu

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@ieeee.org

DANIEL D. STERNLICHT
SAS Business Director
Dynamics Technology Inc.
21311 Hawthorne Blvd., Suite 300
Torrance, CA 90503-5602
Tele: (310)543-5433
Fax: (310)543-2117
dsternlicht@dynatec.com

ARCHIE TODD MORRISON III
(See Web Coordinator & Publicity)

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

JOSEPH R. VADUS
(see Vice President International Activities)

ROBERT L. WERNLI
11775 La Colina Road
San Diego, CA 92131-1413
Tel: (858) 553-1948
Fax: (858) 553-1915
rwernli@san.rr.com

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Table of Contents

<i>Oceans '07 Vancouver, being held Sep 29 thru Oct 4, 2007</i>	<i>Cover</i>
<i>President's Corner, Jim Barbera</i>	<i>3</i>
<i>Building Synergies Between the OES and it's Chapters, Jim Collins</i>	<i>4</i>
<i>Oceans '07 Conference Aberdeen - Report With Pictures, John Watson</i>	<i>5</i>
<i>Oceans '07 Conference Aberdeen - Student Poster Program, Norman Miller</i>	<i>12</i>
<i>Student Poster Program First Place Winning Paper</i>	<i>14</i>
<i>Secretary's Report on the Aberdeen 2007 AdCom Meeting, Steve Holt</i>	<i>20</i>
<i>Report on UT 2007, Tamaki Ura, Junzo Kasahara and Robert Wernli</i>	<i>21</i>
<i>Meet the New IEEE/OES AdCom Members for 2008 - 2010</i>	<i>22</i>
<i>Internal Waves (A new column introduced this issue), Diane Dimassa</i>	<i>27</i>
<i>CALL FOR VOLUNTEERS - Help Wanted</i>	<i>27</i>
<i>CALL FOR PAPERS, US/EU-Baltic 2008 International Symposium</i>	<i>30</i>

President's Corner

I would like to thank all of the candidates for their interest in becoming part of the society administration. The results of our Adcom election were not available as I write this column. The slate of candidates was populated with many well qualified people and the choice was not easy. Also thanks to all members who expressed their interest in the society by casting their ballot. I would like to congratulate the newly elected Adcom members — Bob, Jerry Pam, Todd, Joe and Christoph - and welcome them to the society management. Most of you are not strangers to the workings of the society so you can hit the ground running.

It is the time of the year where we present our Distinguished Service and Distinguished Technical Awards. As usual we again have two awardees that have outstanding qualifications. Congratulations to Mr. Steven Holt (Service) and Dr. Donald Barrick (Technical). Steve has been our secretary for the last seven years and has been the conscience for the Excom/Adcom keeping us on track with regard to action items, and scheduling of meeting venues, as well as producing timely minutes of our meetings. Don is the cofounder and President of CODAR Ocean Systems, a company that has used advanced HF radar technologies over the past 30 years to enable efficient and accurate measurements of oceanographic parameters, specifically current and sea state measurements. A more detailed list of their accomplishments can be found elsewhere in the newsletter.

Two of our members have been elevated to the Fellow level in the IEEE for their career input to advanced technologies to the ocean community. Captain Colin Jones (ret) was selected based on his contributions to deep ocean explo-



ration, search and recovery, and salvage. Professor Tamaki Ura was chosen based on his leading edge advances to Autonomous Underwater Vehicle (AUV) technologies. Congratulations to our newest Fellows. As an aside there are on the order of 350,000 IEEE members and approximately 8000 Fellows.

If you didn't get to the OCEANS 07 Aberdeen conference you missed a great event. John Watson and his committee assembled both an exciting technical program and an enjoyable social program. The EC also participated with their meeting on the Friday of the conference week. The banquet was held at Fyfie castle and it was only appropriate that the Excom/Adcom should wear kilts for this event that of course included pipers and the haggis. Our next European conference, OCEANS 09 Bremen, promises to be of the same ilk. Put it on your calendar now.

Our newsletter editor, Fred Maltz, is moving on to bigger and better things and we have an able replacement in John Irza. John has been involved with the society for a number of years. You have probably seen his smiling face in his column in the newsletter. John was the cochair for OCEANS '06 Boston so he has first hand knowledge of running a conference. If anyone is interested in assisting John as an associate editor or sometime contributor please contact him. If you have some area you feel could add interest please talk to John.

If you have a colleague that has an interest in ocean related technologies encourage him/her to become a member of OES. More hands make the work easier.

Jim Barbera, IEEE/OES President



Building Synergies Between the OES and its Chapters

Jim Collins, Chapters Coordinator and Vice President of Professional Activities
j.s.collins@ieee.org or +1 250 595 6928

The OES has eighteen Chapters. A Chapter is the smallest organizational unit in IEEE's thirty-nine technical Societies and is basically a formally constituted group of twelve or more members of a Society living in the same IEEE geographically defined Section or Council. A prime goal of a Chapter is to foster technical, professional and social networking between its members locally as well as outside the Chapter. Chapters working more closely with the parent Society can better develop these local and outside interests.

A Chapter Chair and Secretary-Treasurer can easily sustain a Chapter operating with minimum activity. The Chair must arrange at least two technical meetings or seminars annually and must represent the Chapter at host Section meetings. The Secretary Treasurer must file the necessary meeting reports and manage a small rebate account. Under these conditions the Chapter will continue indefinitely fulfilling its mandate. We can do better!

Chapters have a much greater potential than just described. In addition to seminar style meetings Chapters can organize focused workshops, symposia, small conferences and other professional and social meetings. Larger chapters can organize larger conferences with their own resources and the help of the Society when required. Although a Section often manages a Chapter's finances, it is entirely possible for a Chapter to manage its finances independently when the necessary banking and accounting requirements are met.

The organization chart on page 28 shows a Chapter that is able to organize many more functions than the two meetings per year cited above. It should be pointed out that not all positions have to be filled for a Chapter to be successful. Also the same person may occupy two or more blocks in the chart.

Chapter Chair and Secretary Treasurer

The functions of the Chapter Chair and the Secretary Treasurer remain the same in character and change mainly in the quantity of activity that they address. The Chair of course finds the quantity change much managerially different in the sense of working with several volunteer colleagues instead of one.

Vice Chair – Meetings and Publicity

The Meetings and Publicity Chair has a pivotal role working with a network of Site Contacts produce the ideas and speakers who form the meeting program. If a Site Contact cannot provide the meeting room and resources for a suggested speaker then the Vice Chair must find alternatives.

The Vice Chair is also responsible for publicity of upcoming events in the local section and OES eNewsletters. After events conclude, activity reports are to be published in the quarterly OES Newsletter and the OES website, <http://www.oceanicengineering.org>.

Site Contacts

Networking effectiveness will improve by recruiting an OES member as a contact person at each organization employing OES

members in the geographic area of a Chapter. The function of the site contact is to liaise with the Chapter Meeting Chair about visiting and potential speakers for seminars that may be cosponsored by the Chapter and the organization. When a site offers to cosponsor a speaker, the Chapter can offer to purchase refreshments, rent a room or what ever is affordable and appropriate. In turn the Chapter receives an opportunity to distribute membership literature and to briefly promote the IEEE and the OES at the cosponsoring organization. Eligible organizations for site contacts include universities, government laboratories and private companies. If it happens that there are two universities in the same Chapter then there will be two site contacts, one at each university

Student Activities

The OES can use Chapters to contribute to student activities. Mentoring, site visits and student projects and competitions are some of the ways that Chapters can network with local students. A student activity of increasing interest is competitive and race robotics where engineering and technology students form teams at their college or university. It is appropriate for the OES to support student activities with a focus such as AUV races or other oceanic topics. The OES has promoted the research and development of autonomous underwater, surface and amphibious vehicles since 1983 through many papers delivered in the Journal of Oceanic Engineering and at many OCEANS conferences and AUV symposia. In some cases it is possible for students to manage their activities in a stand-alone Student Chapter.

GOLD Chair

The IEEE Graduates of the Last Decade (GOLD) program is well suited for implementation at the Chapter level. GOLD members are graduates who are within ten years of their first degree. Recent graduates network to discuss problems and opportunities that arise in early careers. The GOLD Chair organizes meetings of local GOLD members. A Chapter with a GOLD Chair offers a focused networking environment to an oceanic engineering group with similar ages and very similar technical, professional and social interests.

Tech Committee and Editor Contacts

These contacts are Chapter members who also volunteer as OES Tech Committees members or Journal Associate Editors. Their role as a contact is to keep local members informed about any developments at the Tech Committees and the Journal that may be important to the Chapter members. Conversely they are able through the Site Contacts efforts to keep the Tech Committee and Journal teams better informed about what is happening in the Chapters. It is desirable to have at least one Tech Committee member and one Associate Editor resident in each Chapter.

Working Groups and Standards Chairs

When a Chapter is based on a Section or multiple Sections that coincide with a country's boundaries new possibilities arise. Working groups addressing national oceanic issues and standards may be formed. The Global Earth Observation System of Systems (GEOSS) project is an example of an activity in which the IEEE contributes to the improvement of global climate, oceans and earth data gathering. The object is to make the data more available as useful knowledge and information to ultimate users such as farmers, fishermen, aviators, oceanographers, climatologists and policy makers. The existing networking capabilities of nationally based Chapters will be able to supply a sup-

portive framework to the GEOSS Project.

The organization chart illustrates how these ideas work together. Clearly not all of the specialized blocks need to be implemented for a successful Chapter but the more ideas that are tried, the more likely a Chapter will succeed.

Please contact your local Chapter Chair for suggested ways you can join in with your society and the Chapter in your area. Chapter Chair contact information is located on the back cover of this issue. If there is no OES Chapter in your Section or Council and you would like to form one to promote oceanic engineering in your area, please contact me at j.s.collins@ieee.org or +1 250 595 6928.

Oceans07 Aberdeen



For the first time ever, in June of this year the IEEE/OES OCEANS conference came to Aberdeen, Scotland. Not only was this the first visit to Aberdeen it was the first to Scotland and the UK, making this a very important event in the marine science and technology calendar.

The conference was held in the prestigious and recently refurbished Aberdeen Exhibition and Conference Centre (AECC) Aberdeen from Tuesday 19th to Thursday 21st June 2007. In association with OCEANS, EurOCEAN 2007, the flagship marine event of the European Commission, was held also at AECC on Friday 22nd June 2007 to enable an interlink-



ing between these two major events.

There were a total of 485 paying registrants, with exhibitors, exhibit-only visitors, VIPs, sponsors and the press making up another 545 giving a grand total of 1030 attendees over the three days of the conference.

Visitors came from 43 countries around the world, from Brazil right around the globe to Venezuela. As expected, Scotland and the UK made up for about 25% of the total, with similar numbers from mainland Europe, and the same again from North America. The remainder came from the Far East, the Pacific Rim, Russia, Ukraine and the new member states of the European Community. This spread of delegates underlines the global reach of OCEANS.

When OCEANS visits countries outwith North America it is particularly important that the conference technical programme reflects local and geographical interests' specific to that region. With that in mind the overall theme for OCEANS'07 Aberdeen was chosen to be "Marine Challenges; coastline to deep sea". To reflect and underpin that theme, a set of local Aberdeen topics were chosen to be the centrepiece of the conference:

- Challenges in Conservation, Restoration and Sustainability
- Challenges for Marine Renewable Energy
- Challenges at the Biology/Technology Interface
- Challenges in Coastal and Deepwater Technology
- Challenges facing the Marine Defence Industry
- Challenges for Marine Policy, Strategy and Education
- Challenges for Light in the Sea – Marine Optics and Vision
- Challenges in Oceans and Climate Science

In addition the traditional OCEANS topics were also given due prominence in the programme.

Like the registrants, there was a wide geographical representation in the papers presented. Over 300 papers (including 21 student posters) were given from places as far afield as Croatia, Slovenia, Malaysia, Fiji and New Zealand (to name but a few). As expected a large fraction (nearly 60%) of the papers presented were from UK and Europe indicating the expected European interest for the event. Of the 84 UK papers presented 60% were from Scotland indicating a good home support for the conference.

The Aberdeen topics made up about a quarter of the final presentations. Of the Aberdeen topics, Marine Optics was most heavily subscribed and presented, indicating the strong Scottish/UK presence in this area. The Sonar and Observing Platform sessions were the best subscribed from the traditional OCEANS tracks, making up about 40% of the final programme; evidence for the continuing and strong world-wide interest in these aspects of oceanic engineering.

The conference opened on Tuesday 19th June with a series of welcomes from local Aberdeen dignitaries Prof John Watson, the OCEANS Aberdeen Executive Chairman, lead the VIP guest into the Plenary Hall as they were piped in by two members of the Turiff Pipe Band. Prof Watson's welcome was followed by those from Mr John Stephens, The Lord Provost of Aberdeen; Prof. C Duncan Rice, the Principal and Vice-Chancellor of Aberdeen University; and Sir Ian Wood, Chairman of The Wood Group, before culminating in a short welcome from the OES President, Mr. James Barbera.

The opening session closed with a set of Plenary presentations covering the Challenges Theme. We were privileged in that the opening plenary on Marine Policy Drivers from a Scottish Perspective was given by Mr Richard Lochhead, the newly appointed Secretary for the Environment and Rural Development of the newly elected Scottish Government. Mr Lochhead reflected on Scotland's respected position in the world in marine affairs and outlined how the new government was going to enhance this position. He was followed by Rear Admiral Neil Latham RN, the Commandant, Defence College of Management and Technology at Cranfield, UK and described how he saw the scientific and technical challenges facing the defence industry. Finally Dr Manuela Soares, the new Director of Environment Directorate, Research Directorate-General of the European Commission gave the EC's perspective on how to address the research and technology challenges in the Europe.

Later in the week, keynote talks addressed issues such as marine technology (Prof Robin Cook, Director, FRS Marine Laboratory, Aberdeen); oceans and climate science (Dr John Gunn, Director, Wealth from Oceans Flagship, CSIRO, Australia); deep water technology (David Pridden, Director Subsea UK); ocean exploration (Capt Craig McLean, Deputy Science Director, Office of Oceanic and Atmospheric Research, NOAA, USA); operational oceanography (Dr Mike Bell, Head of UK National Centre for Ocean Forecasting, Exeter, UK) and ocean governance (Ms Kristina M Gjerde JD, High Seas Policy Advisor, Global Marine Program, IUCN – International Union for Conservation, Switzerland). This prestigious series of talks helped underline the accompanying technical programme.

In common with all OCEANS conferences there was a set of professional tutorials given by leaders in the field. Some of those unique

to Aberdeen included Wave and Tide Farming (Prof. Ian Bryden, Univ. of Edinburgh); Lander and Floater Design (Dr Phil Bagley, Univ. of Aberdeen); Marine Optics (Dr Alex Cunningham, Univ. of Strathclyde); Signal waveform design for underwater acoustic communications (Dr Charalampos Tsimenidis, Mr Jeff Neasham, Prof. Bayan Sharif, Newcastle University); Satellite communications and location for ocean platforms (Dr David Meldrum, SAMS, Oban) and Propagation of EM waves through sea water (Prof. Jim Lucas, Univ. of Liverpool).and Synthetic Aperture Sonar and target recognition (Prof Hugh Griffiths, DCMT Shrivvenham, Cranfield University). A total of 53 delegates attended the 11 tutorials on offer.

The opening plenary lunch was kindly hosted by the newly formed Scottish Government and Mr Lochhead formally opened the exhibition.

The student poster competition is now a well-established feature of OCEANS and OCEANS Aberdeen was no exception. Of 42 abstracts submitted, 22 were eventually selected for presentation and 21 were given. In Aberdeen the competition was supported by the Research Directorate-General of the European Commission (fees, accommodation and travel) and The College of Physical Sciences of The University of Aberdeen (the prizes). The judges were: Col. Norman Miller (IEEE/OES), John Dunn (FRS Marine Lab, Aberdeen), Miguel Nuevo-Alarcon (Research Directorate-General, EC). The eventual prize winners were:

First Prize: (£300)

Angela Andrea Piehl Harms – University of Bergen, Norway

Second Prize (£200 each)

Morgan Adams, RGU, Scotland

Ejria Saleh Sibadogil, Borneo Marine Research Institute

Third Prize (£100 each)

Pius WQ Lee, National University of Singapore, Singapore

Edward Pilbrow, University of Canterbury, New Zealand

Sergi Pons, Marine Technology Unit, Barcelona, Spain

85 Companies, Professional Societies and other organisations over 105 booths exhibited at OCEANS. This was an excellent response and many of the companies were local to Aberdeen and Scotland and first time exhibitors at OCEANS.

In any OCEANS meeting, the social programme is an essential aspect in enabling delegates to relax and interact in an informal atmosphere. The OCEANS Aberdeen team laid on a series of events which were reckoned to “have raised the bar” for all future conferences.

A Civic reception hosted by Aberdeen City Council was held in the concourse of AECC on the evening of Monday 19th June. The Lord Provost of Aberdeen was unable to attend this so the event was hosted by Baillie Muriel Jaffray of Aberdeen City Council. An exhibitors reception was held on Tuesday 20th in the exhibit hall, where exhibitors and delegates alike could discuss and exchange views.

An informal ceilidh (an evening of dancing, eating and drinking) was held on Tuesday 20th June in Elphinstone Hall at the University of Aberdeen. This was not an official part of the conference programme and was ticketed and charged separately from the conference registration. However, all those who attended (around 200) had a marvellous evening of Scottish country dancing. Every attendee was encouraged to dance.

Many of the delegates wore kilts (Englishmen, Americans, Japanese, Germans, French and Scotsmen of course) – it was a wonderful sight to behold. It is not recorded how many wore their kilts in the true manner of a Scotsman.

The flagship event at any OCEANS is the conference banquet and OCEANS Aberdeen was no exception. In fact it was universally agreed that the Aberdeen team had laid down a marker for all others to follow. The banquet, P, was held in a marquee tent (complete with chandeliers and a carpeted floor) in the grounds of the historic Fyvie Castle on the evening of Wednesday 21st June. On arrival in their coaches, delegates were welcomed by a lone piper playing on the battlements of the castle. This was followed by a tour around the castle (with a chance to see the resident ghost – easier to spot after a dram!) and a display of falconry. Before dinner commenced, a welcome address was given by Mr David Campbell, Director of BP North Sea who kindly supported the banquet; the “haggis” was then piped in and the traditional “address to the haggis” was performed by Robert Lovie, the curator of the castle. The 4-course dinner was an example of all that was excellent in Scot-

tish food and cooking, from the ubiquitous haggis to Aberdeen steak to “cranachan”. The evening culminated in a walk through the marquee by the entire the Turriff Pipe Band. The whole evening was showpiece of Scottish hospitality and catering and was thoroughly enjoyed by everyone.

In all OCEANS Aberdeen was a great success, the conference programme was deemed to be of high quality, the social programme was exceptional and a good number of exhibitors gave their support.

A conference like this needs the full support of the local community, industry and the global marine network. The Aberdeen team owes its deep thanks to all who contributed in various forms to make this work: SubseaUK, BP, the Scottish Executive, the European Commission, Fugro, Aberdeen City Council, AECC, Kongsberg, Shell, ONR and ONR Global, the University of Aberdeen, ITI Energy, Scottish Enterprise, and Oil and Gas UK.

Prof John Watson
University of Aberdeen
Chair of Oceans’07 Aberdeen



Bagpipes – Leading the Entrance.



OES President Jim Barbera.



The Lord Provost of Aberdeen John Stephens.



University of Aberdeen Principal and Vice Chancellor C Duncan Rice.



Sir Ian Wood - Chairman and CEO of the Wood Group.



Scottish Executive, Minister Environment and Rural Development - Richard Lohead.



RAdm Neil Latham



Manuela Soares



Richard Lohead



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Gennadi Lessin – Tallin U. of Technology,
Joseph Vadus OES Vice
President and Craig McLean –Asst.
Administrator, NOAA Office of Research.



CDR Eric Gottshall – ONR Global, Lon-
don, Brian Horsburg and
Joseph Vadus.



John Potter, Fred Maltz and Leslie
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Joseph Vadus, Tamakii Ura and
Bob Wernli.



Bill Carey, Sandy Williams and Tom
Wiener.



Jim Collins, Rene Garelo and Faith
Collins



Sandy Williams and Claude
Brancart



Brian Horsburg, Rene Garelo and
Ferial El Hawary



Diane DiMassa and Jerry Carroll – Ceilidh Dancing.



Tamaki Ura – Bagpiper Welcome.



Sandy and Izzie Williams – Ceilidh Dancing.



Jerry Carroll, Fred Maltz and Norman Miller.



Pam Hurst, Dave Weissman and Jim Candy.



Diane DiMassa and Bob Wernli – Ceilidh Dancing.



AdCom - Kilts



AdCom



AdCom



Todd, Diane and Bob



AdCom at work.



Stan and Sally Chamberlain



Craig McLean, Jim McFarlane, Ferial El Hawary and Tamaki Ura.



Bob, Ferial, Rene and Todd.



Ferial, Jim, Joyce Watson and Peg Barbera.



Conference Banquet.



Banquet



Peg



At the Banquet



Banquet



Banquet



Banquet



Banquet



Sally and Stan Chamberlain at Crathes Castle Gardens.



Jim and Faith Collins at Crathes Castle Gardens.



Kids – Poster Contest and Robotics Activity.



Poster Contest and Robotics Activity.



Tamaki Ura – Feature Speaker



Ken Foote – Session Chairman



RECON Committee.



Tamaki – Student Poster Area



Jim and Tamaki – Exhibitors Reception



Exhibitor's Reception



Ceremony



Ken Tagagi and part of his group



Exhibitor's Booth

OCEANS '07 ABERDEEN Student Poster Program

A very fine Student Poster Program was presented at OCEANS 07 Aberdeen. Forty two poster abstracts were received and twenty two students were invited. One student had to cancel, but twenty one posters were displayed on poster boards in the Exhibition Center. Financial support for the program was provided by the Research-Directorate General of the European Commission. Prizes were awarded by funds from the College of Physical Sciences of the University of Aberdeen. The poster program was organized by a committee lead by Dr. Martin Solan, The University of Aberdeen. He was assisted by Aland Edwards and Miguel Nuevo-Alarcon of RDG European Commission. Judging of the posters was led by Colonel Norman D. Miller, IEEE/OES who was assisted by Miguel Nuevo-Alarcon and Mr. John Dunn of the FRS Marine Lab Aberdeen. The posters were on display Tuesday through Thursday for the Conference attendees to view. The judges worked Tuesday and Wednesday and were able to select the winners in time for the awards presentation at Fyvie Castle on Wednesday evening. The awards were presented by Dr. Alan Edwards, RDG European Commission and Prof. William Deans, Head of the School of Engineering, University of Edinburgh. The roster of students, their respective university, and poster subject are:

Morgan Adams, The Robert Gordon University, Scotland
"Novel Tracers for Environmental Applications"

Nicholas Burns, The University of Aberdeen, Scotland
"Extraction from Underwater Holograms of Marine Organisms"

Tomasz Gorski, Instytut Radioelektroniki Wojskowa Akademi Techniczna, Poland
"Target Detection using HF Radar Data"

Yan Hou, University of Southampton, United Kingdom
"Behavior-based Rules with Fuzzy Logic Controlled Priority Weights in Multi-UUVs Team Cooperation"

Mathew Johnson-Robertson, Australian Centre for Field Robotics, Australia
"Three Dimensional Heterogenous Imaging Sensor Correspon-

dence and Registration Visualization"

Inigo Martinez, FRS Marine Laboratory, Scotland
"What Impact do North Sea Oil and Gas Platforms have on Demersal Fish Population Ecology"

Derrick Mirikitani, Goldsmith College, England
"Day Ahead Ocean Swell Forecasting with Recursively Regularized Recurrent Neural Networks"

Piehl Harms Angela, University of Bergen, Norway
"Physical Qualification and Quantification of the Water Masses in the Kongsfjorden System Cross Section"

Edward Pilbrow, University of Canterbury, New Zealand
"An Active Beacon for Measuring the Tow-Path of a Synthetic Aperture Sonar: Purau Bay Sea Trail Results"

Lee Pius, University of Singapore, Singapore
"Comparison of data delivery schemes for Underwater Sensor Networks"

Sergi Pons, Marine Technology Unit (CMIMA-CSIC), Spain
"Monolithic Spectrometer for Environmental Monitoring Applications"

Ruben Quesada, EPSC-UPC, Spain
"Wavelet Denoising Technique to Minimize the Noise Effects on Oceanic Microstructure Data"

Jeffery Rogers, Duke University, USA
"A Study of Active Sonar Reverberation using Ultrasonic Experiments in a Shallow-water Tank"

Ejria Sibadogil, Borneo Marine Research Institute, Malaysia
"Water Circulation in Darvel Bay, Sabah, Malaysia"

Manuel Toscano-Jiminez, University of Seville, Spain
"Using Oceanography to Control and Forecast Nuclear Acci-



dents and Other Passive Particles Problems”

Naomi Turner, The Robert Gordon University, Scotland
“Development of a Tidal Turbine for Deployment in Areas of Slow Moving Tidal Flows”

Richard Veitch, University of Aberdeen, United Kingdom
“Reconfigurable Hardware Applied to Holographic Reconstruction”

Zhenhai Wang, University of Massachusetts, Dartmouth, USA
“Time Frequency Domain Blind Source Separation in Underwater Wireless Speech Communication”

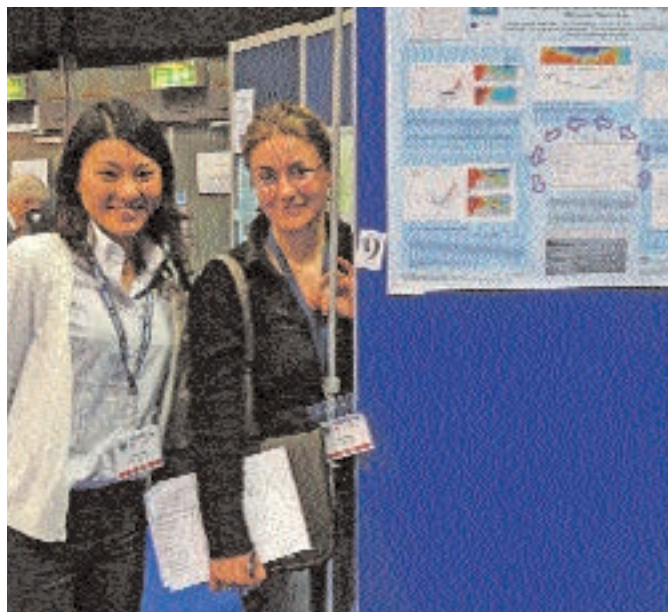
Fang Xu, Xiamen University, Fujian , China
“Space-time Signal Processing of ofdm Signals in Fast Varying Underwater Acoustic Channel”

Tomoko Yoshiki, Soka University, Japan
“The Pressurizing System for Observation of Marine Zooplankton”

Following a very fine banquet at Fyvie Castle the Poster Program was concluded with the award of prizes to the award winning posters:

First Place - Angela Piehl Harms – 300 Pounds

Second Place – Morgan Adams – 200 Pounds
- Ejria Sibadogil – 200 Pounds



Third Place – Edward Pilbrow - 100 Pounds

Third Place – Lee Pius – 100 Pounds

- Sergi Pons – 100 Pounds

All students were asked to stand and received a warm round of applause for their participation in the program. Appropriate photos were taken to commemorate the occasion.

Norman D. Miller , P.E.
Student Activities Coordinator

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Physical Qualification and Quantification of the Water Masses in the Kongsfjorden-Krossfjorden System Cross Section

A.A. Piehl Harms¹, V. Tverberg², H. Svendsen¹,

(1)Geophysical Institute, University of Bergen, (2) Norwegian Polar Institute, Polar Environmental Centre.

Abstract— The Kongsfjorden-Krossfjorden system, situated on the northwest coast of Spitsbergen, is connected to the continental shelf slope by a trough, Kongsfjordrenna, that crosses the 50km wide shelf. Kongsfjorden is the southern arm of this fjord system, and has a maximum depth of 400m. The fjord system has no typical fjord sill, but Kongsfjordrenna seems to function as a sill of around 270 meters. This means that most of the water column in Kongsfjorden is susceptible to exchange with warm and salty Atlantic Water (AW) from the West Spitsbergen Current (WSC) flowing along the shelf slope and with colder and fresher water from the shelf. The water masses found in Kongsfjorden can be viewed on as a mixture between the AW, Winter Cooled Water (WCW) and fresh water either as melt water or river runoff.

Winds at the west Spitsbergen coast cause Ekman drift to either pile up or remove surface water from the coast. The result is an altering of the stratification of the water outside the fjord system in the form of downwelling or upwelling. This builds up a horizontal pressure gradient between the coast and the fjord system, forcing water in or out of the fjord area. Conservation of volume demands that exchange takes place in both directions. The exchange with the adjacent shelf is shown to be related to irreversible exchange across the front between the AW along the shelf slope and the ArW on the shelf. Most of the exchanged water crosses the shelf and numerous intrusions to the fjord system take place every year. The marine ecosystem is dependent on such variations, especially on the lower trophic level, such as microbial and zooplankton production. The relative composition of zooplankton depends on water masses and sea ice concentration. Changes in the zooplankton composition will result in altered energy transfer within the pelagic food web with potential consequences for growth and survival of seabirds.

This work is based on CTD data from four cruises to Kongsfjorden: last week of April, first week of June, first week of July and third week of September. The volume of AW and freshwater in Kongsfjorden during each of these periods was estimated mainly to investigate the variability in the content of these water types. Estimation of fresh water content due to ice melting and river runoff and the estimation of the amount of

fresh water was carried out by subtracting all measured salinities from the maximum salinity measured in the standard shelf slope

This work was supported in part by the Norwegian Research Council through the project MariClim, and the European Master program Joint Erasmus Mundus Master in Water and Coastal Management.

Andrea Angela Piehl Harms is with the University of Bergen (phone: +34658032927; e-mail: andrea.piehl@uca.es).

Vigdis Tverberg is at the Norwegian Polar Institute, Polar Environmental Centre, N.9296 Tromsø, Norway(e-mail: vigdis@lnpolar.no).

Harald Svendsen is at the Geophysical Institute, University of Bergen, Norway (e-mail: Harald.Svendsen@gfi.uib.no).

station The areal network was used to estimate the volume of the mentioned water masses.

Variations in the amount of AW and fresh water have been observed between these periods. The comparison of TS profiles at one position in the fjord from all the four cruises, and two profiles from a station in the AW on the shelf slope show some of these characteristics.

Evidence that these variations are caused by AW entering the fjord by eddies escaping from the WSC due to instabilities along the front between the WSC and the shelf water has been encountered.

Index Terms— Arctic oceanography, Coastal circulation, Fjord-shelf exchange.

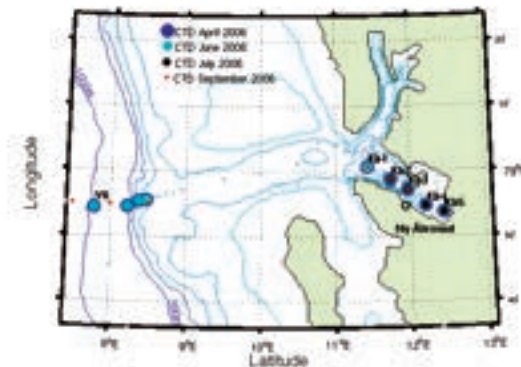


Fig. 1: Kongsfjorden-Krossfjorden system. The position of the CTD from the surveys in April, June, July and September 2006 are indicated through the colored solid points. The bathymetry of the shelf and the shelf slope can also be appreciated.

1. INTRODUCTION

The Kongsfjorden-Krossfjorden system, situated on the northwest coast of Spitsbergen, is connected to the continental shelf slope by a trough, Kongsfjordrenna, that crosses the 50km wide shelf. At its inner end, the fjord has five tidewater glaciers. Kongsfjorden is the southern arm of this fjord system, and has a maximum depth of 400m. The fjord system has no typical fjord sill, but Kongsfjordrenna seems to function as a sill of around 270 meters (Fig. 1).

Outside the fjord, the water mass contained in the West Spitsbergen Current (WSC) is the Atlantic Water (AW), which

is the northernmost extension of the Norwegian Atlantic Current.

Due to the fact that the WSC is constrained by geostrophy and topographic steering to flow along the shelf slope, the flux of AW water toward the fjord mouth must be a consequence of ageostrophic processes. This current flows northward following the shelf slope and is separated by a frontal region to the local Arctic-type water (ArW) on the shelf. The ageostrophic processes take place along this front as instabilities forming filaments of AW that escape the WSC on varying temporal and spatial scales [1]. AW is characteristically the warmest and most saline ($T > 3^{\circ}\text{C}$ and $S > 34.9$) while the ArW is cooler and fresher ($-1.5^{\circ}\text{C} < T < 1.0^{\circ}\text{C}$ and $34.30 < S < 34.80$). As a result of the instability processes on the front, part of the AW enters Kongsfjorden and mixes with ArW as it crosses the shelf. The water mass denominated Transformed Atlantic Water (TAW) is the result of this mixing.

Among the internal fjord water masses we will find the Surface Water (SW) formed from glacial melting (and in a minor quantity from snowmelt, precipitation, run-off and groundwater discharge) which is dominant during late spring and summer ($28.0 < S < 34.0$). SW salinity range is not restricted due to the fact that it is determined by the distance to the glacier. The mechanisms for forming Intermediate Water (IW) is through entrainment and mixing at the boundary of the SW with the underlying AW and TAW ($T < 1.0^{\circ}\text{C}$ and $34.0 < S < 34.65$).

During the winter and autumn Local Water (LW) and Winter Cooled Water (WCW) are formed. Both are formed in the fjord through surface cooling and convection. LW is generally of low temperature ($-0.5^{\circ}\text{C} < T < 1.0^{\circ}\text{C}$) (warmer than WCW) and with salinity range dependent on the water present in the fjord at the end of the summer. On the other hand, WCW is produced by sea ice formation and it is associated with convection during intense cooling, and therefore it has a higher density ($T < -0.5^{\circ}\text{C}$ and $34.30 < S < 34.80$). WCW has been reported found throughout Kongsfjorden at the end of the winter and is also detected throughout the year at the bottom of deep basins and depressions [2].

IW can also be formed, apart from the previously mention SW entrainment process into TAW, through two distinct processes; gradual warming and freshening of LW and WCW, depending on the time of the year.

This temperature and salinity domains will be represented in a T-S diagram in Fig. 2.

Kongsfjorden is strongly influenced by both Atlantic and Arctic physical factors at the same time, therefore biodiversity and animal populations are being strongly structured. Most likely Climate Change will influence the fjord water masses. With an increased intrusion of AW, the process would alter the species composition toward boreal species, whereas the glacial input and distance from the coast would tend to make the inner part of the fjord more Arctic [3].

The relative composition of zooplankton depends on water masses and sea ice concentration. Changes in the zooplankton composition will result in altered energy transfer within the pelagic food web with potential consequences for growth and survival of seabirds[1].

2. EXCHANGE PROCESSES

2.1 Local forcing

2.1.1. Local wind response

In previous studies (see e.g., [4]) the mean flows were considered to be driven by density differences in the water masses. There was little consideration of the wind driven circulation of a stratified estuary. By experimentally observing the isopleth assumed to represent the lower limit of the upper fresh water layer, Svendsen and Thomson [5] identified the relation between the wind and the freshwater thickness. When the flow direction is upfjord, the brackish layer thickens due to the stacking up of the freshwater. When the flow is downfjord, the brackish layer thickness along the fjord is small.

They concluded that the most important forcing for the circulation is the wind stress. The freshwater runoff does not derive an important circulation itself; however the freshwater by causing the strong stratification is important in trapping the wind-stress response to near-surface layers [5].

2.1.2 Rotational effect

When a fjord width exceeds the baroclinic Rossby radius of deformation, Coriolis effect inside the fjord is significant. The Rossby radius is the relation between the phase speed of internal Kelvin waves, that depends on the stratification, with the Coriolis parameter. In a summer situation in Kongsfjorden, this radius, in a rough estimation, is about 4 km, which is half the average width of the fjord [6].

Coriolis effect causes the interface between the upper fresh water and the saltwater below, to slope downward toward the right and the sea surface downward toward the left in the northern hemisphere. The tidal response is a Kelvin wave propagating with land to the right around the fjord [1].

2.1.3. Topographic Steering

A supplementary effect to rotation is the principle of conservation of potential vorticity, which forces the current to follow isobaths; the so called topographic steering. This is likely to be an important factor for guiding AW into Kongsfjorden through the Kongsfjorden trough [7].

2.2 Coastal forcing

2.2.1 Up and Downwelling

Stratification of coastal water near the fjords was thought to be controlled by seasonal runoff variations or by variations in the water properties of the offshore currents. However, later on coastal studies showed that the major changes in coastal stratification are wind induced (e.g., [8]). Offshore winds blowing at the west of Spitsbergen cause Ekman drift that either pile up or remove surface water in the vicinity of the coast. As a result, up-welling or down-welling occur outside the fjord. Down-welling is the downward vertical movement of the water which is being piled up towards the coast by the Ekman-drift, and upwelling is the upward directed vertical movement of deeper water masses replacing the surface water

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3

which has been removed from the coast by Ekman-drift. The resulting change in density of the coastal water generates a horizontal pressure gradient between the coast and the fjord system forcing the water in or out the fjord area [9].

Svendsen and Thomson [5] noticed that onshore wind and wind from the south causes downwelling outside the fjord, which induces considerable interaction between circulation patterns in fjords and on the adjacent continental shelves. The response of the fjord was that heavier water in the fjord to run out at intermediate depth, down to sill depth, while the surface water in the fjord is replaced by lighter water from outside the fjord. If the wind field blows in the reverse direction, the process would be upwelling. The water inside is then lighter so the exchange would also reverse.

2.2.2. Geostrophic Control

An alternative mechanism of the classical hydraulic control by sills or constrictions was given by Kinck, O'Brien and Svendsen [10]. The wind forced coastal circulation in form of its geostrophic alongshore current, strongly affect the circulation by controlling the free surface and the pycnocline displacement, a dynamic response in the coastal current to the Ekman-drift forced upwelling and down-welling explained in the previous subsection. In addition to coastal influences, processes within the fjord can produce circulations. Variations in the vertical turbulent mass transport within a fjord cause pressure gradients which induce currents. However, this diffusively-driven circulation is usually quite weak and can be dominated by the coastal stronger circulation due to upwelling and downwelling.

There are differences in the response to alongshore and across-shore wind stress. When the fjord is forced by up and down-fjord winds, i.e. across-shore, there is an induced tilt in the free surface and the pycnocline but the total volume of water in the fjord remains constant. On the other hand, if the wind is strongly alongshore, a net transport into or out the fjord produces flooding or emptying of the fjord as a whole. Observations from the model results suggest that the free-surface is a reflection of the pycnocline slope, i.e. it is baroclinic, not barotropic. The velocity shear is large in some cases which can have a strong effect on vertical diffusion.

As conclusions, Klink, O'Brien and Svendsen [10] stated that the alongshore geostrophic coastal current strongly control the fjord circulation. This current produces the effect of elevating or depressing the free surface and the pycnocline and thereby controlling the displacement of these surfaces at the fjord mouth. The resulting pressure gradients within the fjord, together with the consideration of the topographic conditions at the mouth (non linear considerations) drive the circulation in the fjord.

3. RESULTS

This work is based on CTD data from five surveys to Kongsfjorden: last week of April, second week of May, first week of June, first week of July and third week of September. TS profiles from the different cruises were graphed in a TS

diagram in order to identify the distribution of the water masses.

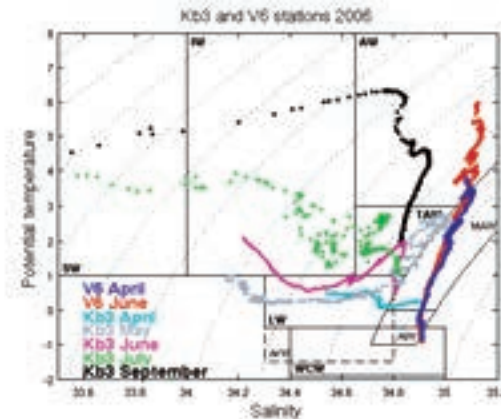


Figure 2: TS diagram with profiles representing data from April to September 2006. V6 is the sampling station in the shelf slope. Kb3 is the sampling station in Kongsfjorden. The positions are shown in Figure 1.

In April, Figure 2, we can clearly identify and separate the TS-profile taken inside Kongsfjorden (Kb3) from the profile taken on the shelf slope (V6). It is also represented in April section plot (Fig. 3). The front on the shelf edge between AW and ArW is very distinct. Moreover, inside the fjord (Kb1-Kb5 sampling stations, Fig. 1) the water column is homogeneous.

The May data has not been calibrated yet, so they will not be analysed any further in this work. But they are interesting because the presence of an AW intrusion is evident in this period. It can be seen in the profile shown in Fig. 2, as the mixture of AW and LW, classified as TAW.

In the June sampling profiles (Fig. 2), for the shelf slope we found a displacement of the distribution toward the AW. LW is still very much present in the fjord and TAW is being produced as mixing between inflowing AW and LW. IW is being formed in the Surface. This is also seen in the section plot Fig.4. In July the TS profile (Fig. 2) shows that LW on no longer present in Kongsfjorden. The distribution of IW is wider than before. Fresh surface water SW show up in the diagram, and can be also clearly seen in the section plot (Fig. 5) During July no water samples were taken from the shelf slope.

The water masses in September were exceptionally warm. In Kongsfjorden AW and TAW is very dominant, and SW and IW give evidence of strong stratification. The deepest part of the Kongsfjorden profiles is placed along a mixing line between AW and LW. The section plot, Fig.6, shows the thick layer of SW and IW, and the warm and high salinity AW and TAW below.

Depth ranges for each type of water mass has been identified from depth profiles of temperature and salinity from the stations Kb1-Kb4. This is summarized in Table 1 with some comments to the formation process.

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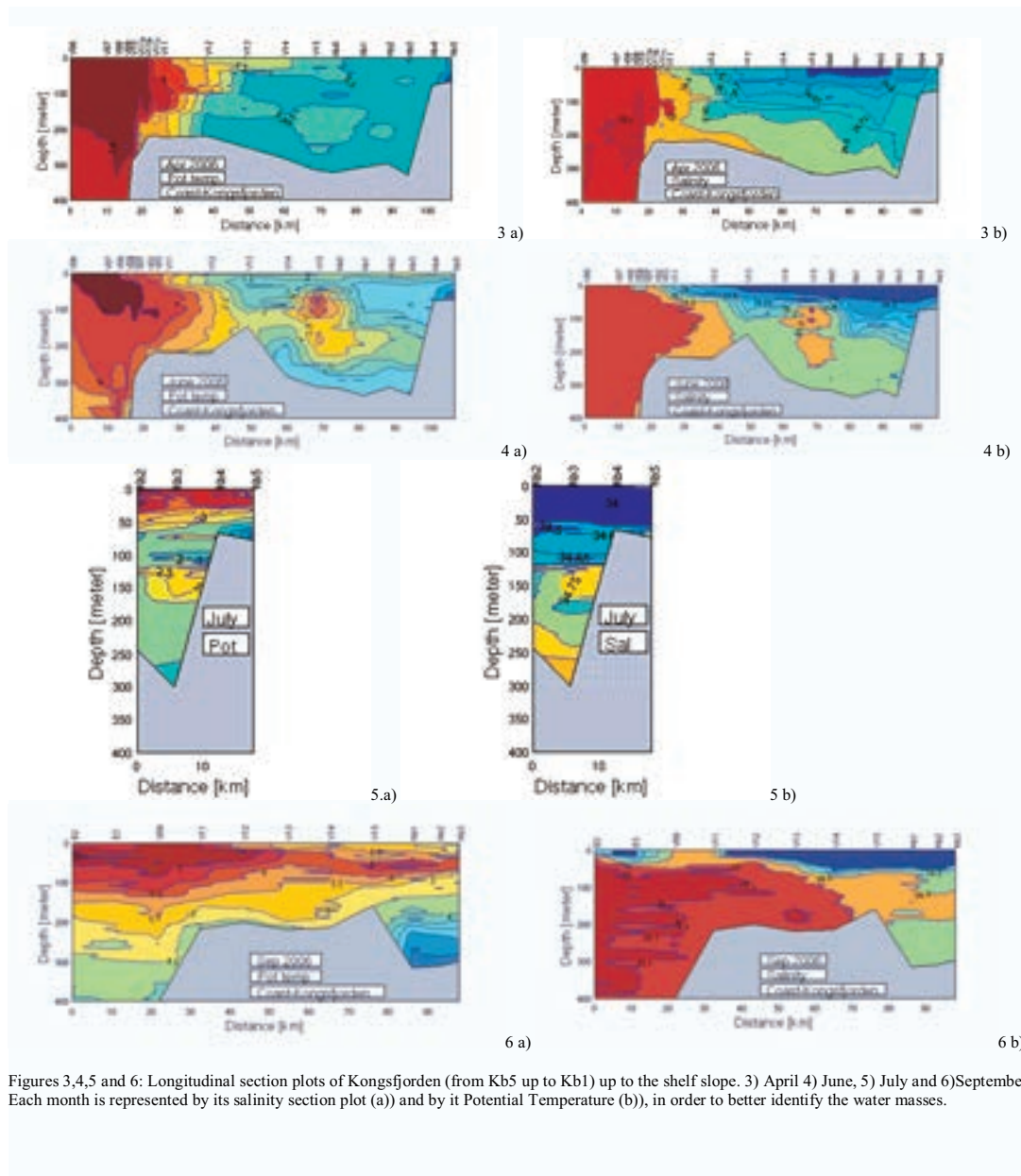
TABLE I
WATER MASSES LOCATION

	April	June	July	September
Internal				
Winter-cooled water WCW ($T < -0.5$; $34.40 < S < 35.00$)				
Local water LW ($-0.5 < T < 1.0$; $34.30 < S < 34.85$)	0-350 m Well mixed water column.	30-110 m and >270 m Remnants from spring		
Surface water SW ($T > 1.0$; $S < 34.00$)			0-20 m From Calving and Melting Glaciers.	0-25 m. Very low Salinity.
Mixed				
Transformed Atlantic water TAW ($1.0 < T < 3.0$; $S > 34.65$)		Strong mixing from LW and AW 110-270 m	>110 m Because intrusion of AW is still happening at high depths	> 200 m. Remaining from previous month
Intermediate water IW ($T > 1.0$; $34.00 < S < 34.65$)		0-30 m (Surface heating has warmed LW above 1°C)	Throughout the whole water column 20-110 m	25-50 m
External				
Atlantic Water AW ($T > 3^{\circ}\text{C}$; $S > 34.65$)				50-220 m The Temperature is very high.

Table 1: Configured through the identification of the different water masses in the salinity and potential temperature vertical profiles in the different mouths of 2006. The samples were taken from the stations Kb1, Kb2, Kb3 and Kb4 inside Kongsfjorden.

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5



Figures 3,4,5 and 6: Longitudinal section plots of Kongsfjorden (from Kb5 up to Kb1) up to the shelf slope. 3) April 4) June, 5) July and 6)September. Each month is represented by its salinity section plot (a) and by its Potential Temperature (b), in order to better identify the water masses.

4. DISCUSSION

In winter, as can be seen in April (Fig. 3), the water column in Kongsfjorden is very homogeneous.

In the specific TS profiles for April (Fig. 2), the shelf slope profile is concentrated mainly in the deep shelf water area classification, i.e. mainly MAW, AiW and some very close to in the AW. This is really an example of how the water mass classification is made for the summer situation, and does not quite fit a winter situation. During winter the surface AW is 4-5°C cooler than in summer. On the contrary, the Kongsfjorden water masses are mostly located in the area of LW, and the densest water has characteristics close to the deep Atlantic water (MAW). Only the innermost station has WCW produced from ice freezing, which can be seen in the section plot Fig.3. Cottier et.al. [7] explains how LW this spring was produced by cooling of AW both on the shelf and in the fjord, a process producing exceptionally dense LW. In February the fjord was filled with AW because of an exceptionally long lasting upwelling event on the coast. The warm AW also prevented ice freezing and then also the production of WCW.

LW is the water mass locally formed in the fjord, and identified in the whole water column in April. However, in posterior months AW from the shelf is again introduced into the fjord through wind originated processes on the coast, mainly filaments of AW escaping the WSC as a result of upwelling events, as explained in section 2.

The AW entering the fjord mixes with LW forming TAW. Inside the fjord it is also guided by topographic steering and the Coriolis rotational effect. But this is not possible to see in our section across the shelf. One would need a section across the fjord to be able to show this. The June water column is characterized by the TAW in the central part of the column and the upper 30m is contained of IW produced by gradual warming of LW, previously the dominant water mass in April. In July the effect of the calving and melting of glaciers is being obvious in the upper 20 m of fresh water. The deepest LW produced during spring has all been mixed with AW, and formed TAW, which is located in the deepest part (>110 m) Intermediate water (IW) is located in the middle. The whole water column is clearly stratified.

September sampling period coincided after strong period of upwelling that introduced AW into the fjord (50-220m). In the deepest part of the column TAW was found. Above this AW, IW was being located, separating the SW to the upper 25 m.

Summarized our data indicates that the characteristics of the water masses inside Kongsfjorden are very much dependent on processes on the coast, in the frontal zone between AW in the WSC and the shelf water (ArW). These processes are producing filaments of AW entering Kongsfjorden, and this seem to happen at any time of the year. The lack of formation of WCW this winter is then not only an effect of warm air temperatures, but also on intrusion of AW. Moreover, the water mass definitions do not quite fit our data. This may indicate that we are indeed seeing a change in the environmental conditions in the region. And there is a need for a better understanding of the processes leading to intrusion of AW onto the shelf and into the fjords in Spitsbergen.

ACKNOWLEDGMENT

Thanks to Edmond Hansen, Norwegian Polar Institute, for providing the September CTD data, which was part from a MariClim project campaigns. Thanks also to the participants in the April and June cruises, and to Ragnhild Lundmark Daae for helping in the collect the July-data.

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Report to the IEEE OES on the Aberdeen 2007 Administrative Committee (AdCom) Meeting

The IEEE OES AdCom Meeting was held in Aberdeen Exhibition and Convention Center (AECC) in Aberdeen, Scotland. The high points from this meeting were:

- Jim Barbera discussed the agenda and several important issues for the OES. Jim stated that:
 - o GEOSS had received \$450K from IEEE spread over the next three years, and there are ongoing outreach meetings being held all over world. Jim, Sandy Williams, and Tom Wiener are involved, with Steve Holt working on the development of the IEEE GEOSS Standards Registry with the IEEE Group on Earth Observations (GEO).
 - o The 1st Systems Engineering Conference in Honolulu, HI was held in April, 2007. The Technical Program was good, with 50% more registrations than papers.
 - o Anchorage has expressed interest in hosting a future OCEANS conference.
 - o UT '07 was held in April, and it presented a good technical program and was well attended with over 200 plus present.
 - o GEOSS is now a Standing TAB Committee Member. GEOSS has instituted its own journal.
- Jerry Carroll gave his Treasure's Report. He stated that:
 - o UT'09 will be in Wuxi or Shanghai, China. A new OES chapter will be organized in Wuxi/Shanghai.
 - o It will soon be more expensive to hold events in Canada starting in 2009. The IEEE has established non-profit entity in the EU.
 - o The IEEE is trying to reduce Membership fees.
 - o Much of the rest of the information of his presentation is sensitive, so please contact Jerry for details.
- Steve Holt gave his Secretary's Report. Steve stated that:
 - o He wrote four ExCom and two AdCom Meeting Reports in 2006/2007; maintained the list of outstanding action items and motions; wrote summary articles for OES Newsletter, and worked on the GEOSS Standards Registry.
 - o He also proposed to start digitizing past OES Secretary Meeting Reports. There was a motion to for digitizing all ExCom and AdCom reports from Steve's initial ExCom report in 2001 (Albuquerque, NM) until Houston, TX ExCom in 2007. This motion was voted upon and agreed upon unanimously.
 - o Steve and Rene Garello proposed using a standardized template for all OES PowerPoint presentations. Steve Holt reviewed all outstanding action items.
- Jim Collins gave his Membership and Chapters Report. Jim stated that:
 - o The final page of an attachment he provided is a proposed new structure for the relationship between the Chapters and the Society. The proposed new structure includes the addition of a "Gold" Chair.
 - o Liz Creed and Ken Ferer will now work together on Membership activities.
- Norm Miller gave his Scholarship Committee Report: Norm stated that:
 - o Subsequent to the approval of the Scholarship Committee program, Glen Williams developed a Scholarship Application form. He downloaded the IEEE Student Section listing from the IEEE website and sent an announcement to each IEEE Student Section in Regions 1-6, 7, and selected schools in region 8.
- Claude Brancart discussed the AUV '06 Workshop being delayed and then held in 2007 in Brest, France.
- Tom Wiener stated that the annual nominations for Elected AdCom Members are coming up and ballots will soon be mailed out. The award for Technical Achievement and Technical Service will be done by email.
- David Weismann stated the in 2006, there were two Fellows elected from the OES, Collin Jones and Tamaki Ura. For 2007, two nominees will be put forth.
- Liz Creed stated that this spring Milica Stojanovich and Jim Freitag agreed to convert the tutorial they present at OCEANS into an ExpertNow module.
- Chris DeMoustier discussed several matters relate to his work as the Editor of the IEEE Journal of Oceanic Engineering (JOE).
- Fred Maltz gave his report on the Newsletter. Fred stated that:
 - o Putting newsletters on Xplore are currently being debated by IEEE.
 - o We are continuing to seek ways to improve news gathering process.
 - o He recommended that it be augmented with more technical articles, as well as having an increased focus on getting more input from the Chapters.
 - o Joe Vadus gave his report on Conference Development. He has included a comprehensive report and a conference flyer. The report was entitled: Report on Future OES Symposia, and includes: the Chile-US Workshop on Marine Science and Technology Research, to be held in Vina del Mar, Chile, December 3-4-5, 2007; the poster flyer (prepared by the Chile side) announced this workshop.
 - o Milica Stojanovic discussed the upcoming "International Workshop on Underwater Wireless Networks".
- Bob Wernli reported on Future Conferences. Bob stated that:
 - o Rene, Bob Wernli and Bob Bannon made a site visit to Barcelona and Santander, Spain.
 - o Hawaii: Site visit is to be performed before Vancouver by Bob Wernli and Glen Williams.
 - o Asia/Pacific: Tamaki Ura has set up a Korean proposal for the OCEANS 2012 conference. UT'07 had 220 papers.

- o There was a motion (with a friendly amendment): Planning and selection of future OCEANS conference sites shall be the responsibility of the VP of Conference Development and VP of Conference Operations, working in conjunction with the JOAB and RECON committees. Selected OCEANS conference sites shall be submitted to ADCOM for final approval. Conferences underway and approved shall be reported by JOAB; Conferences under review and consideration shall be reported by RECON.
- Rene Garello reported on Near Term Conferences. He stated that:
 - o Rewrote conference guidelines and submitted them to MTS counterpart. Received some responses and will present them in Vancouver.
 - o Brest request, Oct 9-12, 2007 SafeSeas Conference – safety, pollution & security topics; Brest would like OES to be a participating society and let them use our logo.
 - o Acoustics '08 will be held in Paris, France.
- Ken Takagi gave his report on MTS/IEEE OCEANS'08 – TECHNO-OCEAN'08 in Kobe, Japan.
- Tamaki Ura gave his report on UT'07 and SSC'07, along with information on Shanghai Jiao Tong University.
- Christoph Waldman gave his report on Oceans '09 Bremen.
- Ferial El-Hawary gave her report on Oceans '08 Quebec City.
- Pam Hurst gave her report on the proposed Homeland Security conference in Falls Church, VA.
- Todd Morrison reported on the Society's website and also on the ongoing development of web tools for the OCEANS Conferences, Workshops, and Symposia. He also presented two motions. The first motion was entitled “Funding the Web Tools for OCEANS Conferences”, and the second motion was entitled “Funding the Web Tools for Workshops and Symposia”.
- Diane DiMassa gave her presentation on tutorials and the OES Newsletter and stated that:
 - o Tutorials in Boston offered Continuing Education Units for the first time.
 - o All Tutorials in Aberdeen have been approved to offer CEUs.
 - o The Electronic Newsletter is alive and well, but could be used more.
- Stan Chamberlain gave reports concerning his Technical Activities and the OES History Project. The first report was entitled “OES Technical Activities”, and the second was entitled “The OES History Project.”
- Claude Brancart gave his report on the Human Powered Submarine Races: Claude Brancart is now the Chair of the foundation sponsoring the races.
- Bill Carey was to have made a presentation at the AdCom Meeting related to establishing a clear policy on the publication of papers in the proceedings. Time ran out to adequately address this issue, thus it was deferred to the AdCom Meeting to be held during the Oceans '07 Conference in Vancouver, BC.
- It was decided that there were seven motions and no action items generated at this meeting. The meeting was then adjourned at 5:00 PM on 18 June 2007.

REPORT ON THE UNDERWATER TECHNOLOGY 2007 SYMPOSIUM AND FOLLOW-ON WORKSHOP

The fifth Underwater Technology 2007 international symposium, held in Tokyo on 17-20 April, was an unqualified success. For the first time in memory, everyone who registered, 220 delegates, picked up their badges and filled the dual session rooms. This year's conference had an expanded technical program that included the fifth Workshop on Scientific Use of Submarine Cables & Related Technologies, which resulted in an excellent mix of delegates and complimentary technical presentations. The UT '07 symposium moved to a new location in Tokyo, the recently constructed “Harocot” conference hall at the Komaba Research Campus, Institute of Industrial Science (IIS), the University of Tokyo, which proved to be an excellent facility.

The only slight imperfection related to the symposium, which was held in April, usually one of the most pleasant months in Japan, was the absence of sunshine. Regardless, the organizers—the IEEE Oceanic Engineering Society (OES), its Japan Chapter, the University of Tokyo's Institute of Industrial Science (IIS), the US Office of Naval Research Global-Asia (ONR) and Japan Agency for Marine-Earth Science and Technology (JAMSTEC), along with host organizations from several countries—agreed that the technical interaction at the conference gave the delegates little time to worry about the lack of cherry blossoms.

The symposium theme—Advanced Underwater Technology for the Ocean—provided a thematic umbrella under which

discussions relating to problems and potential long-term solutions that concern not only the Pacific Rim countries, but the world in general, were held. The UT '07 committee, who donated so much of their valuable time in bringing the symposium to a successful conclusion, must be given a tremendous amount of thanks.

The symposium opened with two excellent keynote presentations. The first speaker, Professor John R. Delaney, University of Washington, dazzled the audience with the potential of Project Neptune, an aggressive installation of a cabled network of underwater sensors. The second speaker, conference co-Chairman, Professor Tamaki Ura, University of Tokyo, provided a convincing presentation on the utility of autonomous vehicles (AUVs) while discussing the success of the university's “r2D4” AUV on its dive on “The Great Dodo Lava Plain” in the Rift Valley of the Central Indian Mid-Oceanic Ridge. The first day of the symposium then broke into the parallel sessions and an inaugural mini-exhibition that provided the delegates with some excellent hands-on interaction with the equipment vendors. The evening concluded with the delegates socializing at the conference banquet held at the nearby Komaba Eminence Hotel.

The second day opened with conference co-chair Robert Wernli, First Centurion Enterprises, introducing three additional keynote speakers. The first, Dr. Andy Bowen, Woods Hole

Oceanographic Institution (WHOI), covered the status of their new hybrid 11,000 meter ROV, which will soon conduct an assault on the Mariana Trench. The second keynote speaker was Dr. Kiyoshi Suyehiro, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), addressed the ability to capture processes in the ocean with an underwater cable network. The third keynote was given by Professor Teruo Fujii, University of Tokyo, who discussed the attributes of microfluidics-based in situ biological and chemical sensing to provide real-time deep sea measurements. The symposium then broke into parallel sessions for the remainder of the day.

The arrangement of the technical sessions changed on the third day when a third parallel session was added to the underwater cable and technology tracks. The new session addressed the areas of bio-minetic vehicles, bio-sonars, and the behavior of fish and marine mammals. The day concluded for the adventuresome with a tour of the Institute of Industrial Science's laboratory. The tour included a demonstration of the "Tri-Dog1" AUV in the Ura Laboratory, an anechoic chamber demonstration at the Sakamoto Laboratory in applied acoustic engineering, the Oki-Kanae Laboratory for a discussion on the global hydrological prediction and database system and for those with a strong stomach, a ride in a universal driving simulator in the Suda Laboratory.

The final count for the symposium showed 220 delegates, from 16 countries enjoying 118 technical presentations over the three day period. And for the busload of those who arrived a day early, the week also included a trip to the Tsurugaoka Hachimangu Shrine, Kamakura's Great Buddha statue and the amazing Enoshima Aquarium.

Following the three-day symposium, it was on to Shanghai,

China, for many of the delegates. An overarching goal of the UT symposium series has been to take it to other international venues, such as Taipei, Taiwan in 2004. Accordingly, a follow-on workshop was held on 23-24 April at the Underwater Lab, Shanghai Jiao Tong University (SJTU), Shanghai, China. The workshop, with a specific interest in ultra-deep sea exploration, was jointly organized by SJTU and the China Ship Science Research Center (CSSRC). It provided an opportunity for underwater technologists from the Pacific Rim Countries to discuss problems and their potential solutions involved in ultra-deep sea explorations.

The workshop was aptly chaired by Jimao Zhu, SJTU, and Weicheng Cui, CSSRC. The delegates were given VIP treatment thanks to the outstanding efforts of the co-chairs and Zhengping Feng, SJTU, the conference Secretariat. The one-day workshop included 12 invited papers that included speakers from China, Japan, the USA and the United Kingdom with nearly 50 delegates in attendance.

An excellent banquet was held at the Shaoxing Hotel the first evening. The following day, the delegates traveled to Wuxi and the China Ship Science Research Center. A tour was provided of CSSRC's massive test facilities and highlighted by a presentation and tour of their nearly completed 7,000 meter manned submersible.

Based on the success of the UT '07 workshop in Shanghai, the UT Executive Committee is considering holding the next conference, UT '09, in China. We hope that you will join us again in two years at the next UT conference.

Tamaki Ura, Junzo Kasahara, Robert Wernli
Symposium General Co-Chairs

Meet the New IEEE/OES AdCom Members for 2008-2010

CANDIDATE BIOGRAPHY and STATEMENT ADMINISTRATIVE COMMITTEE 2008

Name: Robert T. Bannon

IEEE Member Number: 41331030

IEEE Grades: M 1982, SM 2001, F 2003

Biographical Sketch



Bob Bannon is an IEEE Fellow, and holds a BSEE, MSEE, and multiple MBA's from Pennsylvania State University, Wharton School - University of Pennsylvania, and George Washington University. Bob was previously a Director at AT&T (Submarine Systems) and Bell Labs and after 31 years of service retired to establish Bannon International Consulting LLC in 1998. Bob has been instrumental in development of special underwater installation, protection, maintenance and repair techniques for AT&T and other Underwater Telecommunications Companies. He served as the Chairman - SCARAB Committee and the Committee for International System Maintenance. He was responsible for designing 18 special application ROVs, and various Autonomous Under-

water 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 serves as an advisor on risk assessment and mitigation, underwater infrastructure protection, and homeland security. Bob is the President of the IEEE Sensor Council, serving on the TAB Committee, Chair-Oceanic Engineering Society (OES) Submarine Cable Technologies Committee, and the Technical Advisor for Scientific Submarine Cable Applications. He is also the Co-Chair of Homeland Security and serves as Co-Chair for the IEEE-OES Homeland Security Technology Workshop for Ocean/Maritime Infrastructure Protection. Bob also serves on the IEEE Critical Infrastructure Committee and the TAB Publications Committee.

Bob has lectured at the Armed Forces Industrial College on Future Computer Directions / Advanced Sensor Technologies 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).

Statement

I have been involved with the IEEE since the early 80's and have been attending the OCEANS Conferences since 1985 and have frequently served as an author and session chair. Because of my involvement in various technical review committees for the conferences, I was asked to become a candidate for the AdCom in 2000, and I was elected and served two terms. I have served on the technical review committee for the Offshore Technology Conference for seven years. I have chaired two Submarine Cable Technologies Workshops, two Scientific Cable Technologies Symposia, two Homeland Security Workshops for Maritime Infrastructure Protection and helped organize two TEHOSS Symposia in Europe. I was appointed the U.S. technical lead for the USA-Russian Homeland Security Conference held in Moscow by Congressman Curt Weldon. If re-elected to the AdCom, I will continue to champion the oceans and maritime communities with the US Congress and Senate and foreign governmental agencies. Through the OES I will continue to encourage the professional development of ocean related engineering and applied science careers, and I will continue to represent the OES at international venues promoting oceans awareness and fostering responsible use of this precious resource.

**CANDIDATE BIOGRAPHY and STATEMENT
Administrative Committee 2008****Name: Jerry C. Carroll****IEEE Member Number: 40294965****IEEE Grades: M 1997; SM****Biographical Sketch**

He is a Member of the Executive Committee and presently Treasurer of OES responsible for financial matters. Presently he is a Research Scientist with the University of Mississippi and a member of the Gulf Coast Gas Hydrate Consortium. He serves as Special Advisor to the Commander, Naval Meteorology and Oceanography Command. He received numerous awards including the Navy's Meritorious Civilian Service Award and the Secretary of the Navy's Hispanic Five Point Award.

In addition to being a member of the IEEE/OES since 1997, he is a member of the American Geophysical Union and the Marine Technology Society. He presently is one of the Technical Co-chairs/Treasurer for the US/EU-Baltic Symposium 2008 and was Technical Co-chair for the 2006 Symposium. In addition:

Member Technical Committee for OCEANS 06

Member of the Advisory Board for UT98, UT2000 and UT2002—Technical Co-chair UT2004 in Taipei, Taiwan

Financial Co-chair for OCEANS 02 BILOXI, MS

Organizing Committee for the Homeland Security 2005 Symposium and Treasurer

Member of the United States Japanese Marine Facilities Panel for their 22nd, 23rd, and 24th session

Member of the IEEE RECON and JOAB Committees

OES Liaison for OCEANS 08 and OCEANS 09

Co-Chair for the Chile-US Workshop December 2007

IEEE/OES Representative for UT 07 and Shanghai, China Workshop 2007

Statement

Mr. Carroll would like to continue to serve as a member of the ADCOM for the IEEE/OES. Since serving as Treasurer from 2005 through 2007 he has learned the basic principles of the position and established good working relations with the IEEE staff. He would like to continue the progress that is being made in improving the financial status of OES. He would like to continue the present effort to make the Society more international.

It is a pleasure to serve with the group of professionals that comprise the ADCOM and OES.

**CANDIDATE BIOGRAPHY and STATEMENT
ADMINISTRATIVE COMMITTEE 2008****Name: Pamela J. Hurst****IEEE Member Number: 41332424****IEEE Grades: M 2000, SM 2007****Biographical Sketch**

Pamela J. Hurst is currently a consultant for Maritime Systems, Unmanned Underwater Vehicles (UUVs) and Homeland Security Technologies and is assisting in the establishment of several companies pursuing government special projects.

Pam holds a Master of Business Administration, Program Management from National University, San Diego, a Bachelor of Engineering Science (Electrical and math majors) from University of Rhode Island, and a Certificate for Program Management - PMI (Government and Commercial) from George Washington University. Pam has over 30 years supporting USN, NOAA, DOE, government agencies and the ocean community. She has been involved in all portions of UUV concept, design and build of over 25 systems. Before pursuing her current career path, she retired as the Manager – Business Development and Manager Business Continuity at Lockheed Martin Marine Systems and Surveillance (Perry Technologies). She was responsible for development of business continuity concepts and survivability plans that allows LMCO to withstand maritime and natural disasters and terrorist threats and attacks against the LMCO financial, physical plant and personnel resources. Pam was also responsible for advanced & special programs and unmanned maritime systems, UUVs, USVs and AUVs for EOD. She was previously the Director, Program Integration and Business Development/ Program Manager - Advanced Projects Sector /Government Programs at General Dynamics Advanced Technology Systems and AT&T Bell Labs, Acting Director/Manager, Systems Technology for Classified Programs at Honeywell - Marine Systems Division. Previous to that and Engineer on UUVs, buoys, sonar systems at Westinghouse Electric Corporation, Oceanic Division.

Ms. Hurst has served two terms as an IEEE OES Administrative Committee member and is currently the OES appointed member of the IEEE Sensors Council. Pam is the Founder and

Chair of the IEEE-OES Homeland Security Technology Workshop for Maritime Infrastructure Protection 2003-2005 adding over 40 members and 2007. Pam is also a member of : Navy League, National Defense Industry Association (NDIA), navy Submarine League, AUVSI, Life Member of the Marine Technology Society (MTS), RI Shoreline Coalition.

Statement

I have been involved with IEEE since 1968 student competition. I have participated in OCEANS since 1978 as session chair, speaker and committee member. I was appointed to the JOAB for future conference planning 2001-2002. I led a Strategic Planning event for OES to determine near and long term objectives. I have served as Vice- chair Submarine Cable Technology committee. Reviewer of abstracts and papers for OCEAN and OTC conferences. I participated in the OES By-Laws and Charter Review 2005-2006. Currently I am leading the OCEANS 2012 bid for Providence. I was appointed to the IEEE Women in Engineering as the OES representative. Finally, I will represent the OES at the 2007 National Ocean Science Bowl. I will continue to recruit new members, mentor members for conference participation, and interact with college students to form new chapters, and join new councils related to the stewardship of protecting the planets vital ocean and ocean/air interface and living underwater environment.

CANDIDATE BIOGRAPHY and STATEMENT Administrative Committee 2008

Name: Archie Todd Morrison III

IEEE Member Number: 40129397

IEEE Grades: Member (1995), Senior Member (2005)

Biographical Sketch



Archie Todd Morrison III earned his Bachelor of Arts degree in Electrical Engineering from Harvard University in 1981. He was awarded Master of Science and Oceanographic Engineer degrees by the Massachusetts Institute of Technology / Woods Hole Oceanographic Institution Joint Program in Oceanographic Engineering in 1994 for work on system identification and state reconstruction of underwater vehicles for control and navigation in an acoustic net. His Doctor of Philosophy degree was conferred in 1997 by the MIT / WHOI Joint Program for work developing acoustic differential travel time instrumentation to study the velocity structure of the continental shelf wave bottom boundary layer. He has also studied mathematics at Yale University (1986/87) and underwater archaeology at Cornell University (1987).

Todd worked as a Senior Field Engineer for Raytheon (1981-86), ran a soup kitchen and mail room for the homeless in Atlanta (1987-89), was a lecturer in mathematics at MIT (1992), and continues a series of appointments as a Visiting and Guest Investigator at WHOI (1997-present). From 1998 to 2003, he was the Senior Engineer for Electronic Systems at McLane Research Laboratories. Long term consulting work for Nobska led to the position of Senior Engineer in 2000 and a partnership in 2003. Todd is currently Nobska's Vice Presi-

dent of Engineering. He is concurrently a Senior Engineer at Webb Research Corporation. Todd continues to work as a consultant, developing oceanographic, fisheries, and medical software and instrumentation.

Outside of work, Todd takes an active role in educating the public about ocean science, giving frequent public talks and demonstrations and working with students. He was named the Massachusetts Informal Teacher of the Year for 2000 by the Massachusetts Marine Educators. He, his wife, Hilary, and their children, Abigail and Daniel, live in Falmouth, Massachusetts, where they are active advocates for peace and have, to date, taken in some 400 foster children on an emergency basis.

Todd has participated in the annual OES OCEANS Conference since 1992, contributing fourteen papers to the OCEANS Proceedings in that period. He has been a Member of IEEE/OES since 1995, and was elected a Senior Member of IEEE in 2005. He was first elected to the OES AdCom in 2000 and has served as the OES Webmaster since 2001. He has been involved in the OES Current Measurement Technology Conference since 1995 (5 papers and member of the organizing committee) and was the CMTC Financial Chair from 2001 to 2005. During 2004 and 2005, he was a member of the OES Constitution and Bylaws Committee, which produced the current governing documents of the Society. Todd became a member of JOAB, the Joint OCEANS Advisory Board, in 2003 and is the first, and so far only, Webmaster of the Permanent OCEANS Website. In this role, he coordinates and oversees the ongoing development of the web-based tools used by local organizing committees in running the OCEANS Conferences.

Statement

I have thoroughly enjoyed my work on the OES Administrative Committee. It has been and continues to be a group of dynamic, talented, and interesting individuals who are dedicated to the oceanic engineering community. I am particularly pleased by the fact that we have markedly increased the gender, age, and international diversity of this body since I was first elected in 2000, and that as a body we have embraced and supported this change.

Since 2000, I have participated in, and in some cases led, several of the Society's initiatives. Of these the largest has been as the OCEANS Webmaster for both the Oceanic Engineering Society and the Marine Technology Society. In this role I have coordinated the development of the web-based tools used to manage and build the technical program, develop the public web presence, and manage registration for the OCEANS Conferences. This is an ongoing task that I would like to see through to the point where it is a turn-key package for each of the local OCEANS organizing committees to use. In my webmaster role I have also had the pleasure of working closely with the local organizing committees of all of the recent OCEANS conferences, another interesting and diverse group.

I look forward to continuing my service to the oceanic engineering community as a member of the OES Administrative Committee. I ask for your vote and I encourage you to participate as well.

CANDIDATE BIOGRAPHY and STATEMENT Administrative Committee 2008

Name: Joseph R. Vadus

IEEE Member Number:

IEEE Grades S, M, SM, LF 2001)

Biographical Sketch



IEEE Life-Fellow (2001); Serving as Vice President for Conference Development (2006-2007), responsible for organizing future OCEANS MTS/IEEE conferences and OES symposia. Vice President, International Activities (2002- 2005); Vice President, Technical Activities (1997-2002);

IEEE Engineering R&D Policy Committee (1992-2006); IEEE Centennial Medal (1984) & IEEE Millennium Medal (2000); IEEE/OES Distinguished Service Award (1985); General Chairman, OCEANS 1976 in Washington during the Bicentennial Year; Program Chairman, OCEANS 1991 in Hawaii; Liaison and Advisor to OCEANS 2001 & 2002; Major role in organizing the first OCEANS/TECHNO-OCEAN MTS/IEEE 2004 Conference in Kobe, Japan, and received the First Techno-Ocean Award by the Consortium of Japanese Organizations---for leadership in ocean science and technology and for US-Japan collaboration. Chaired three Underwater Technology Symposia ('98-'00-'02) in Tokyo followed by a Workshop in Taiwan (2002); US Chairman, US/EU-Baltic International Symposium 2004 for Marine Research, Monitoring and Technologies; and in 2006 for Integrated Ocean Observation Systems (IOOS). Both held in Klaipeda, Lithuania. US Chairman for the next Baltic Symposium to be held in Tallinn, Estonia, in 2008; Executive Committee, Homeland Security Technology Workshop, 2004 & 2005. Selected as one of the contributing authors to IEEE's book celebrating the new millennium, "Engineering Tomorrow: Opportunities and Challenges in the 21st Century".

Marine Technology Society: Fellow, Member Emeritus and member for 38 years; Vice President for Technical Activities for nine years (1979-1988), responsible for 32 Professional Committees and organizing OCEANS Conferences; received the Compass Distinguished Technical Achievement Award (1990) & Special Commendation signed by nine MTS Presidents (1989) for leadership as VP Technical Activities. Received the 2006 Lockheed Martin Award for Achievement in Ocean Science & Engineering.

B.S. Electrical Engineering, Penn State University; M.S. in Ocean Engineering from Long Island University (1967); then served in the Graduate Division as Adjunct Professor for a two semester course in Ocean Engineering (1967-72).

Retired from Government service from NOAA in 1996 as Senior Technology Advisor; and held R & D management positions in the Office of Manned Undersea Science and Technology, Office of Coastal Environment, Office of Ocean Engineering, and Ocean Energy R & D Program Office. Senior Staff Associate at the National Science Foundation (1988-91) and Program Director for Ocean Engineering Research.

Sperry Rand Corporation: engineering management positions in major ocean R & D programs; headed the R & D Pro-

gram Office (1968-71) for the U.S. Navy's NR-1 (launched in 1969), and other deep submergence R& D projects (1969-72).

Has 11 patents (6 awarded, 5 pending)

He has over 90 technical publications and also major keynote and plenary addresses at International Conferences

U.S. Chairman (15 yrs.) for Marine Technology with the U.S.-Japan Bilateral (1980-1995). Reviewed 200 R&D facilities in US & Japan and exchanged over 500 technical papers of mutual interest; Japan Awards received for Leadership in 1986 and 1992. State Dept. Distinguished Service Award in 1992 for sustained performance as U.S. Chairman.

U.S. Chairman (15yrs.) for Marine Technology R & D for the U.S.-France Cooperation in Oceanography (1980-1995), which involved managing an average of 6 cooperative U.S.-France R&D projects each year. One of his projects in 1985 resulted in finding the RMS "TITANIC", during the U.S.-France evaluation of deep ocean survey systems. For his service of over 20 years, in 1999, the President of France selected him for the award of "Chevalier de l'Ordre National du Merite" the French Order of Merit. He is a Member, American Society of the French Legion of Merit

In 1991, the Mexican Academy of Science presented him their Distinguished Technical Achievement Award in Coastal and Ocean Engineering, and designated him as Corresponding Member. Fellow in the UK Society for Underwater Technology, (1996).

Served in the US Marine Corps; Member of the First Marine Division Association

While at Sperry Rand he received letters of commendation for his role in development of Marine Corps Radar, used extensively in Vietnam.

Statement

I would like to serve in the AdCom and Continue my role as Vice-President for Conference Development (VPCD), where I, and associated members, seek opportunities and challenges world-wide for finding IEEE and IEEE/OES members that have leadership and organizing potential for proposing a new conference venue; development of a new chapter: and all leading to another successful conference. This involves working with designated MTS Leadership in organizing, evaluating and jointly selecting venues of mutual interest that will be designated OCEANS MTS/IEEE Conferences.

Major emphasis is in seeking new venues and developing supporting chapters. I have established a Reconnaissance (RECON) Committee which I oversee as VPCD and include designated MTS Leadership to participate in the evaluation and selection process.

At present Oceans Conferences are scheduled out to 2013. A RECON Charter describes the tasks and steps involved. Most new conference venues typically begin 5 years in advance to develop a cadre of members that can provide the potential leadership to meet the criteria for a successful proposal, leading to selection of the new venue. Most of the new venues are outside of North America, but I am constantly seeking new venues in North America and returning to successful venues on e.g. a 10 year cycle.

My previous role, as VP International, gave me considerable

insight for pursuing International opportunities and venues. My extensive experience in International Activities outside of IEEE/OES, has also provided valuable experience and good contacts in establishing new International venues.

In addition to OCEANS Conferences, we are pursuing symposia and workshops that can later be upgraded to an OCEANS Conference in the Region involved.

I initiated the US-EU-Baltic International Symposia in 2002, with the intent of conducting biennial symposia and rotating among the 9 Baltic Nations and nearby EU Nations. Starting at a symposia or workshop level can lead to good visibility for OES and a means for later advancing to an OCEANS Conference level. So far, we had 2 successful symposia in Lithuania in 2004 & 2006 and now we moved to Estonia for 2008, as proposed by regional attendees. I've initiated a new symposium/workshop on the continent of South America, in Valparaiso, Chile, with expectations of a biennial cycle, leading to a Regional OCEANS Conference. This is now in its formative stages

On a personal note, this may be my last term on the OES AdCom. In that regard, I plan to help groom OES Members to be able to carry on conference development activities in North America, but in particular the more challenging International domain to extend OES visibility and membership development through conference development and associated RECON Activity. If you are interested in this area, there is plenty to get you started. We need a few good men and women. Semper Fi.

FORMAT FOR CANDIDATE BIOGRAPHY and STATEMENT

Name: Christoph Waldmann

IEEE Member Number: 08089955

IEEE Grades (M 1986)

Biographical Sketch



Born in Bremen, Germany, in 1956 I started my career in ocean engineering as a student at Kiel University, Germany, in 1980. After my graduation in physics in 1981 I got the chance to do my PhD at the Institute of Applied Physics with the topic of developing an optical method for determining the density of seawater in situ. My first encounter with the IEEE OCEANS conference goes back to 1982 where I gave a presentation on first results with the new developed optical method. After finishing my PhD in 1985 I received a research grant from the German Science Association which included the chance of a one year stay at the Woods Hole Oceanographic Institution, USA. There I was introduced to the development and construction of deep sea underwater vehicle systems. Additional to activities in ocean engineering I also worked for the University Hospital in Kiel, contributing to the development of an acoustical method to determine the density of bones. Working for three years for the Alfred- Wegener-

Institute for Polar- and Marine Research in Bremerhaven, Germany, I was involved in the development of high precision instrumentation for arctic applications. Since 1996 I am working as a senior scientist at the University of Bremen, MARUM, Department of Geosciences, with an emphasis on instrument and platform development for long-term deployments in the deep sea. I am strongly engaged in national and international research programs funded by EC. One of my central tasks is to set up close links to international partners, industry and academia, in the EU, North America and Asia.

When I started my career I realized the importance of getting in personal contact to people who either are experts in their field or pursue similar developments which gives an opportunity to generate synergies or overcome technical deadlocks. The IEEE OCEANS conference since its inception has always been an excellent forum to stimulate those types of discussions. Therefore I decided at a very early stage of my professional career to become a member of IEEE Oceanic Society which lasts now for 20 years.

I am married to Sabine Waldmann and we have two children.

Statement

A major part of my professional activities is devoted to forge close links to institutions in Europe and overseas. This can be accomplished by personal meetings or participation and organization of workshop and conferences. The later proved to be very efficient as conferences often lead to unexpected encounters and fruitful discussions in larger groups. As a frequent attendee of the IEEE OCEANS conference I appreciate the opportunity to meet the main experts in the field of oceanic engineering. This long standing series of conferences proved to be the central event in this field and I am convinced that it will stay like this in the future. As the investigation of the world oceans is an international endeavor I believe it is important that people from different countries are prepared to invest part of their time to shape events like the OCEANS and assist in developing new ideas and concepts to be able to address the needs of our societies in the future. The IEEE Oceanic Engineering Society has long standing experience in organizing conferences and dedicated workshops and has proven to be prepared for future challenges. I would appreciate if I could contribute to the activities of the Oceanic Engineering Society and serve the needs of the people working in this field. Currently people in Europe start to understand their dependency on the well being of the oceans and are willing to devote part of their resources to better understanding and protecting the oceans, in particular the coastal regions. Due to my involvement in different EC supported projects and my strong links to research institutions and companies in Europe I hope that I am able to contribute successfully to the goals of the Oceanic Engineering Society and convey the spirit of being part of active group of experts in ocean research and engineering. My aim will be to attract young people to this field and to convince people to become member of the IEEE OES as well.



Internal Waves

By Diane DiMassa

Internal Waves is a new column in the OES newsletter that recognizes OES members for activities outside the field of Oceanic Engineering.

Todd Morrison and his wife Hilary were chosen as the 2006 Hotline Foster Care Parents of the Year for the Southeastern Massachusetts Region. Over the past six years, the Morrisons and their children, Abby and Dan, have participated in the Department of Social Services (DSS) emergency foster care program and opened their home to over 400 complete strangers. When unfortunate circumstances arise for children, emergency foster care families are needed to care for them for a night or two, or sometimes even a whole week, while DSS either resolves the situation or finds a more permanent solution. This can mean an urgent phone call to Todd or Hilary at the office in the middle of the afternoon, or a call to the Morrison home literally in the middle of the night. Why do they do it? "Simple," says Todd, "the job needs doing, and when we explained the idea to our kids, they were all for it." That's impressive since six years ago the Morrison children were in grade school and would have to share a room with the houseguests. Now, Abby is in high school, Dan is approaching middle school, and the addition on the home means everyone gets his or her own room.

"I expected the foster kids would be more threatening," Hilary said, "but with only a few exceptions, they are delightful, nice, and bright." Most of them will do their homework, help clear the table after dinner, and one even entertained the Mor-

risons by playing the trumpet. What's the hardest thing about it? "Realizing that you can't change the world," Todd said. "But we can treat these kids with care and affection." The kids come from a variety of difficult situations, never good, but some worse than others. In many cases it's the parents who have gotten themselves in too much trouble and as a result aren't capable of caring for the kids. In some cases the kids are victims of abuse or even rape. The Morrisons have given hugs, listened to the stories, cried, made birthday cakes, given presents, and even hunted Easter eggs with the foster kids. Occasionally there are issues, like the shaving cream all over the bathroom walls, or the 15-year-old who "borrowed" the car at 1 AM, but those are rare. With a shake of the head and the smile of tolerant parents, the Morrisons find a way to laugh it off.

What does the award mean to them? Something and Nothing. While it is nice to be recognized, Todd said that's not why they do it. "A lot of people are doing a lot more than we are. We are just a temporary stop for these children on their journey through life. But if stopping here helps them get to a better place, then we can't quit now!" The Morrisons plan to continue being foster parents for many years to come.

Todd Morrison is a member of the OES AdCom and oversees the OES and OCEANS websites, among many other OES activities.

HELP WANTED

Technical Committee Members

Technology Committees of the Oceanic Engineering Society (OES) need volunteer members. Members serve as reviewers of abstracts for Oceans conferences and as stimulators for submission of abstracts. They also may run workshops or symposia on a narrower set of topics than Oceans. For more information contact: Sandy Williams, Technology Committee Coordinator at awilliams@whoi.edu.

Chapter Chairs

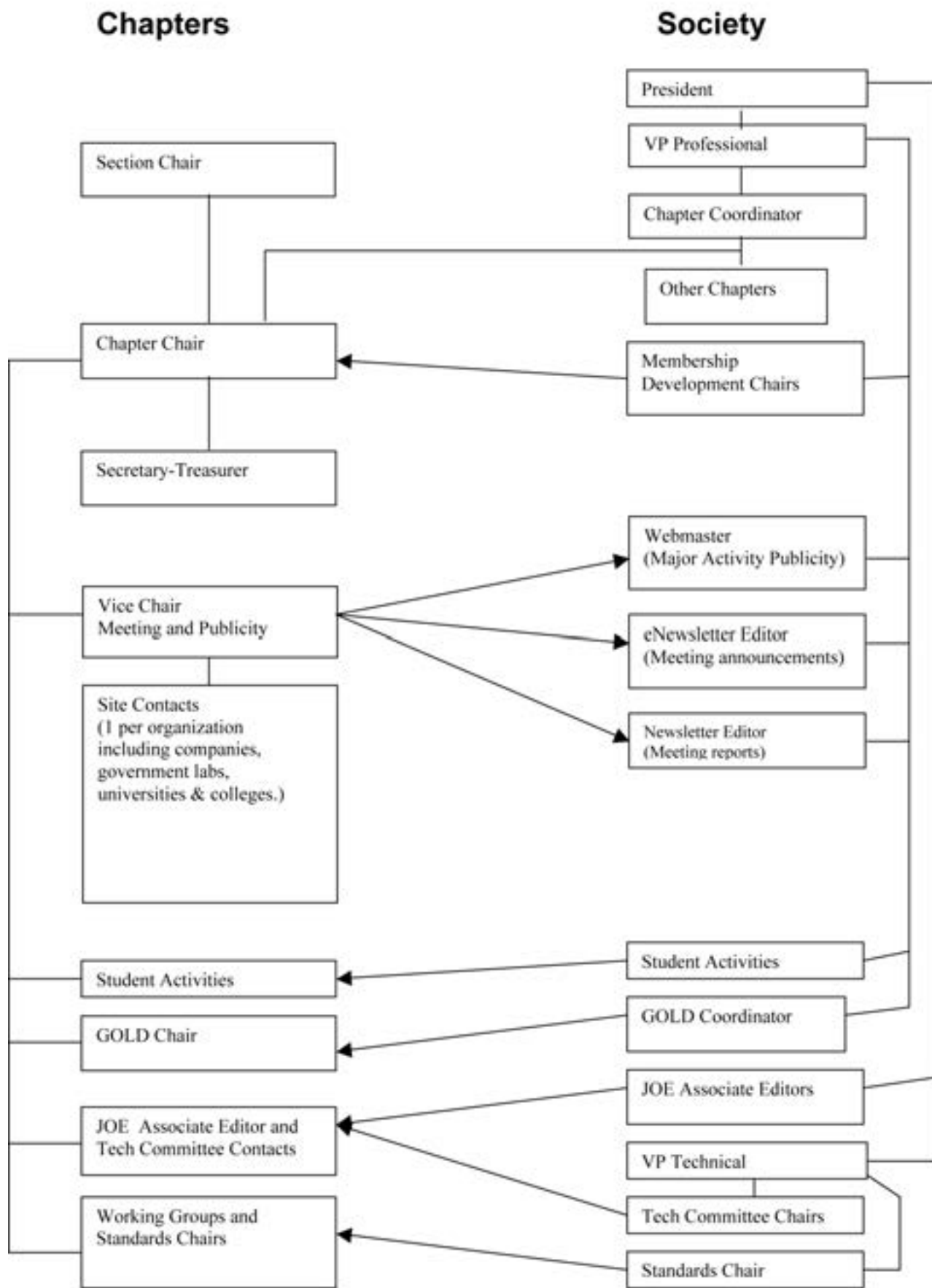
The OES is expanding its worldwide network of Chapters. Chapters and their potential contribution are discussed in the article on pages 4 and 5 of this issue. For more information of

for members who wish to volunteer to form and operate an OES Chapter, please contact: Jim Collins, Chapter Coordinator at j.s.collins@ieee.org or +1 250 595 6928

AUV Race Committee Members

The new OES AUV Racing League needs a volunteer committee of AUV researchers, developers and operators to participate in the design and operation of the League. These races will be based on a standardized set of rules that can be easily implemented in swimming pools. Initial race criteria will be speed and endurance. For more information, please contact: Jim Collins, Chapter Coordinator at j.s.collins@ieee.org or +1 250 595 6928.

Building Synergies Between the OES and its Chapters

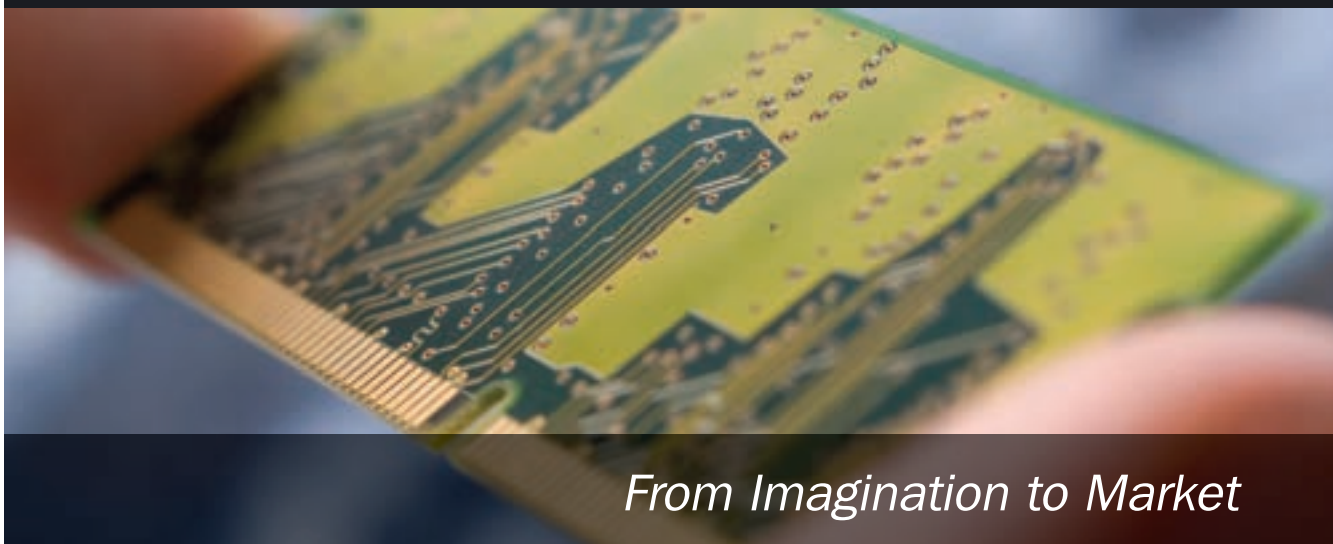


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Symposium Chairs

Joseph R. Vadus

Vice President, IEEE Oceanic Engineering Society

j.vadus@ieee.org

Jüri Elken

Marine Systems Institute, Tallinn University of Technology

elken@phys.sea.ee

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Technical Programme Co-Chairs

Albert J. Williams 3rd Woods Hole Oceanographic Institution awilliams@whoi.edu
Urmas Raudsepp Marine Systems Institute, Tallinn University of Technology raudsepp@phys.sea.ee

International Technical Programme Committee

Victor Klemas University of Delaware klemas@udel.edu
Gennadi Lessin Marine Systems Institute, Tallinn University of Technology gennadi.lessin@phys.sea.ee
Hans Dahlin EuroGOOS hans.dahlin@smhi.se
Erik Buch Danish Meteorological Institute ebu@dmi.dk
Vadim Paka Shirshov Institute of Oceanology, Kaliningrad paka@ioran.baltnet.ru
Tim Fristedt FOI – Applied Marine Research, Stockholm tim.fristedt@foi.se
Tapani Stipa Finnish Institute of Marine Research tapani.stipa@fimr.fi
Hans Burchard Baltic Sea Research Institute, Warnemünde hans.burchard@io-warnemuende.de
Kenneth Ferer IEEE Ocean Engineering Society kferer@earthlink.net

Finance Chairs

Jerry C. Carroll US Naval Center for Meteorology and Oceanography jerrycortez@ieee.org
Jaan Laanemets Marine Systems Institute, Tallinn University of Technology jaan@phys.sea.ee

Program Tracks and Suggested Topics:

- **Ocean Observation Systems:** Integrated Ocean Observation Systems; Global Ocean Observation Systems; Baltic Ocean Observation Systems; Euro GOOS; NOOS; GEOSS; Operational Oceanography; Remote Sensing; Real-Time Measurements; Seafloor-Based Monitoring Networks; Drifting Buoy Networks
- **Ecosystem-Based Management:** Fate of Pollutants; Modeling; Run-Off Pollution; Sediment Transport and Analyses; Protection and Restoration; Remediation; Geographic Information Systems; Combating Eutrophication; Marine Biology; Fisheries; Marine Biodiversity; Water Quality; Physical, Biological, and Geological Oceanography
- **Coastal Zone Management:** Oil Spills and Hazardous Materials; Modeling; Ocean Dumping; Dredging; Beach Protection and Restoration; Pollution Control; Marine Recreation; Natural Hazards; Marine Resources and Sustainable Development; Mapping Wetlands; Charting Coasts; Public-Private Partnerships; Marine Policy and Education
- **Forecasting:** Meteorological, Oceanographic, and Climate; Data Collection, Analysis, Forecasting, and Distribution; Data Standards and Calibration; Modeling; Operational Monitoring of Physical, Chemical, and Biological Parameters; Real-Time Measurements; Remote Sensing; Fate of Pollutants; Satellite Measurements; Global and Regional Monitoring Programs and Systems; Natural Hazards
- **Environmental Technologies:** Oceanographic Measurements (Current, Wave, CTD, Tidal); Sampling Techniques (Water, Chemistry, Sediment); Acoustic Techniques; Oil Spill Measurements and Modeling; Instrument Platforms; Satellite Systems; ROVs and AUVs; Gliders; Profiling Floats; Drifting Buoys; Bio-Sensors
- **Special Program Track: Sessions on Comparison of Environmental-Based Research and Issues of the Baltic Sea and the Chesapeake Bay.** Organized by the Estonian-American Panel: Chair, William S. Busch, University of Maryland. buschw@essic.umd.edu

Background for Authors

This is the third US-EU-Baltic International Symposium. The first and second symposia, in 2004 and 2006, were held in Klaipeda, Lithuania, with 140 papers from over 20 nations each. Other information will be available on the website: www.US-EU-Baltic2008.org

Call for Papers

You are invited to submit an one-page abstract addressing one of the suggested topics. Early submittal is suggested because of program size limitations. Abstracts may only be submitted on-line thru the website. The submission gateway will be opened in September of 2007.

The Abstract due date is January 10, 2008

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)
f.el-hawary@ieeee.org

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)
rene.garello@enst-bretagne.fr

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)
markr@soest.hawaii.edu

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

Ottawa

SKAWOMIR B. WESOLOWSKI
+1 613 761 9782
s.wesolowski@ieeee.org

San Diego

ARTHUR M. TERANISHI
858 455 5530
art.t@cox.net

Seattle

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

Singapore

ARJUNA T. BALASURIYA
+65 679 06863
Fax: +65 67910 341
earjuna@ntu.edu.sg

Spain

DR. ROQUE J. SALTAREN PAZMINO
Universidad Politecnica de Madrid
ETSII-DISAM
Calle Jose Gutierrez Abascal, 2
Madrid, 28006, Spain
rsaltaren@etsii.upm.es

Taipei, Taiwan

DR. SHENG-WEN CHENG
Professor
Dept. of Engineering Science &
Ocean Engineering
National Taiwan University
No. 1, Section 4, Roosevelt Road
Taipei, 106 TAIWAN
886-2-33665772 (office)
886-937-049982 (mobile)
886-2-23929885 (office fax)
niccheng@ntu.edu.tw (office)

Toronto

SRIDHAR KRISHNAN
+416 979 5000
Fax: +416 979 5280
krishnan@ee.ryerson.ca

United Kingdom & Republic of Ireland

DR. YONG XUE
The Retreat
125B Cambridge Road
Great Sherford
Cambridge, England, CB2 5JJ
United Kingdom
y.xue@unl.ac.uk

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@ieeee.org

Washington D.C./No. Virginia

MICHAEL GOLDBERG
Mitretek Systems
3150 Fairview Park Drive
Falls Church, VA 22042
703 610-1717
703 610-1767 (Fax)

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 Whipoorwill 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@ieeee.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@ieeee.org

DAVID M. FARMER

Institute of Ocean Sciences
P. O. Box 6000, 9860 West Saanich Rd.
Sidney, BC V8L 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.curtin.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@arlab.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

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