# IEEE OES HOMELAND SECURITY TECHNOLOGY WORKSHOP
Ocean and Maritime Technologies for Infrastructure Protection
Co-Sponsored by the Naval Undersea Warfare Center Division, Newport
December 6, 7 & 8, 2004

## SCHEDULE

### MONDAY, 6 December 2004

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<tr>
<td>0900-1800</td>
<td>Exhibit Set-up</td>
<td>Chester Lehigh</td>
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<tr>
<td>1700-2100</td>
<td>Early Registration</td>
<td>Monroe</td>
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<tr>
<td>1900-2100</td>
<td>Opening Reception</td>
<td>Exhibitor Hall Center Area</td>
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<tr>
<td>1800-2100</td>
<td>Exhibits Open</td>
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### TUESDAY, 7 December 2004 0800-2100

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>0700-1900</td>
<td>Registration</td>
<td>Grand Foyer Radisson</td>
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<tr>
<td>0730-2200</td>
<td>Exhibits Open</td>
<td>Chester Lehigh</td>
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<tr>
<td>0700-0800</td>
<td>Continental Breakfast</td>
<td>Chester Lehigh</td>
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<tr>
<td>0800-0900</td>
<td>Plenary Session</td>
<td>Montgomery Lancaster</td>
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<tr>
<td>0800-0805</td>
<td>Opening Remarks</td>
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<tr>
<td>0805-0815</td>
<td>Pamela Hurst, Workshop Chair</td>
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<td>0815-0830</td>
<td>Congressman Curt Weldon (R-PA)</td>
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<td>0830-0900</td>
<td>RDML William G. Timme, USN Deputy Commander for Undersea Warfare, SEA 07</td>
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<td>0830-0900</td>
<td>Gene Gallaher, Homeland and Force Protection, Product Area Director NAVSEA Dahlgren Division</td>
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<tr>
<td>0900-1015</td>
<td>Break</td>
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<tr>
<td>1030-1115</td>
<td>Keynote Speaker</td>
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<tr>
<td>1115-1145</td>
<td>Panel: Industry Perspective</td>
<td>Montgomery Lancaster</td>
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<tr>
<td>1115-1130</td>
<td>Marianne Molchan, Molchan Marine Sciences</td>
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<tr>
<td>1130-1145</td>
<td>Shawn D. James, Lockheed Martin, VP Maritime System &amp; Sensors</td>
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<tr>
<td>1145-1200</td>
<td>Doug Burnett, Partner, Holland &amp; Knight LLP</td>
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Luncheon (1200 – 1330) **Bucks**

1200 – 1215 Welcome
   Pamela Hurst, Workshop Chair & Executive Committee Chair
   Robert Bannon, Workshop Co-Chair & Executive Committee
   Kenneth Ferrer, IEEE-OES Membership Chair

1300 – 1330 Jeffrey P. High, Director of Maritime Domain Awareness, USCG

**Session 1:** (1330 – 1500)

**Session Chair:** Hugh Murphy, PURVIS SYSTEMS, Inc.

**Track 1: Sensors Gettysburg**

- **Innovative Instrumentation To Track and Fight Illicit Trafficking of Radioactive Material**
  Dr. Chris Leveque, Marketing Manager, Canberra Industries, Inc.

- **Passive Acoustic Swimmer Detection Demonstration**
  Tim Barock, Naval Research Laboratory, Head, Fibre Optic Tech Program, Clay Kirkendall, Head, Acoustic Sensor Section, Washington, DC

- **Blue Rose – A Cost-Effective Perimeter Security System Using Fiber Optics**
  James S. Pollock, NAVSEA Naval Undersea Warfare Center Division Newport and Hugh A. Murphy, PURVIS SYSTEMS, Rhode Island

- **Fibre-optic seabed sonar arrays for coastal defence**
  P. Nash, Marine and Acoustics Center, QinetiQ, United Kingdom

**Session Chair:** Claude Brancart, IEEE-OES ADCOM, AUV Chair

**Track 2: Vehicles Technologies Valley Forge**

- **Homeland Force Protection Using an Unmanned Aerial Vehicle Network**
  Deborah Furey, Marine and Aviation Department, NSWCCD, Maryland

- **Hull Inspection Using Autonomous Vehicles**
  Dr. Laurei Linette, Fortkey, Ltd., Scotland, presented by Dr. Gregory Jones, NUWC, Rhode Island

- **MCAUV – Multiple Cooperation AUV’s for Homeland Security of Ports and Harbor**
  Dick Blidberg (awaiting abstract detail)

- **Vector Hydrophone Arrays for Port and Platform Security**
  Bruce M. Abraham, Ph.D., Applied Physical Sciences Corp., Connecticut

**Session Chair:** Kenneth Prime, LM Maritime Systems & Sensors

**Track 3: Terrorist Threat Vulnerabilities Port and Harbor Security GS-1**

- **Ship and Port Security**
  Marianne Molchan, Molchan Marine Sciences, Connecticut

- **Characterization of Underwater Threats in an Urban Estuary**
  Michael S. Bruno, Center for Maritime Systems, Stevens Institute of Technology, New Jersey

- **Automated Change Detection and Classification (ACDC) System in Support of Homeland Security**
  Maura C. Lohrenz, Physical Scientists, Marlin L. Gendron, Computer Scientist, Geary J. Layne, Computer Scientist, Naval Research Laboratory, Stennis Space Center (NRLSSC), Mississippi
Session Chair: Norman Miller, IEEE-OES ADCOM, Past VP

**Track 4: Maritime Domain Awareness GS-2**
- *Above the Line – Maritime Domain Awareness*, Frank J. Koye, Principal Engineer for Network Centric Warfare, BAE SYSTEMS, Washington, DC
- Wet Mate Gateway Architecture - Port Floor Re-Configurable Distributed Sensing Systems (awaiting abstract detail)
- *Intelligence as an Enabler to Persistent Maritime Domain Awareness*, Jeff Rapp, Lockheed Martin IS&S Deepwater Program Manager, Valley Forge, Pennsylvania

Session Chair: Joseph Czika, IEEE-OES ADCOM, Past President

**Track 5: First Response GS-6/7**
- *Real-Time, Long-Distance Control of MicroROV through the Internet*, Scott Bentley, Marcus Kolb, VideoRay LLC
- *An Architecture for an Emergency Response Simulator*, Jeffery Nickerson, Walter Meissner, Stevens Institute of Technology
- *HLS Emergency Planning and Response*, John Clay, Director, Maritime Programs, Perot Systems Government Services, Inc.

**Afternoon Break** (Exhibit Area) (Exhibits Open) (1500 – 1530) **Exhibitor Hall Center Area**

**Session 2:** (1530 – 1700)

Session Chair: Dr. Clifford Carter, Branch Head, Naval Undersea Warfare Center, Division Newport, , Rhode Island

**Track 1: Sensors Gettysburg**
- *Detecting and Estimating Biochemical Diffusion of a Moving Source in a Two-layer Medium*, Ayre Nehorai, Professor, Dept. of Electrical and Computer Engineering (M/C 154) University of Illinois at Chicago, Illinois
- *Homeland Security Technologies – Challenges and Opportunities in Pomeranian Region*, Professor Andrezj Stepnowski, Dr. Kazimierz T. Kosmowski, Gdansk University of Technology, Poland
Session Chair: Keith Bruce, NUWC Anti-Terrorism/Force Protection

Track 2: **Vehicles Technologies Valley Forge**
- *Total Unmanned Integrated System for Surveillance*, Yutaka Masuda, Yamaha Motor Corporation, Japan
- *GAVIA – A Homeland Security AUV*, Chris Roper, Director of Sales, GAVIA AUV CORP
- *Integrated Route Survey and Object Classification with Real Time Synthetic Aperture Sonar*, QunetiQ

Session Chair: Robert Bannon, IEEE-OES ADCOM

Track 3: **Undersea Telecommunications Threat Vulnerabilities GS-1**
- *Vulnerability of Subsea Telecommunications Cables: An Anglo American Perspective*, Wayne Nielsen, Managing Director, WFN Strategies, LLC, Virginia, Stephen Wells, Managing Director WFN Strategies Europe, United Kingdom
- *Vulnerability of Undersea Telecommunications System Part I*, James Coble, CPA, CMA, Doug Burnett Partner, Holland & Knight LLP
- *A Draft International Convention for Mutual Repair and Restoration of Multiple Faults in Submarine Cables*, James Coble, CPA, CMA, Doug Burnett Partner, Holland & Knight LLP

Session Chair: Jim Pollock, Director of Homeland Security Programs, Naval Undersea Warfare Center, Newport, RI

Track 4: **Maritime Domain Awareness GS-2**
- *Project ATHENA Maritime Domain Awareness Fusion Center Baseline #1 Demonstration Results*, Rebecca L. Ferris ATHENA Project Manager, Naval Surface Warfare Center, Florida
- *Modular Surveillance System for Harbor, Ship, and Bridge Environments*, Jerry Steinberg, Todd Lutton, NAVMAR Applied Sciences Corporation, Pennsylvania
- *Hybrid Framework for the Intelligent Fusion of Information (HI-FI)*, Benjamin, Perakath, KBSI

Session Chair: Normal Miller, IEEE Past VP

Track 5: **First Response GS-6/7**
- *How to Build an ROV Operations Team for Local Police*, Dave Phillips, Undersheriff, St. Louis County Sheriff’s Department, Minnesota
- *A Mobile Digital Video System for Patrol Watercraft*, Dr. Richard A. Messner, Coord., Synthetic Vision and Pattern Analysis Laboratory, Dept. of Electrical and Computer Engineering, College of Engineering and Physical Sciences, University of New Hampshire, New Hampshire
- *Underwater Maritime Domain Awareness for First Responders: An Affordable Approach*, Justin Manley, Lead Ocean Engineer, Mitretek Systems, Virginia
Exhibitors Cocktail Reception (1715 – 1830) Exhibitor Hall Center Area

Dinner (1830 – 2045) Grand Ballroom Radisson
1845 – 1930 Welcome
   Dinner Pamela Hurst, Workshop Chair and Executive Committee Co-Chair
1930 - 2000 Keynote Speakers Introductions: Robert T. Bannon, Workshop Co-Chair and Executive Committee
   Congressman Curt Weldon (R-PA)
2000 – 2045 Rear Admiral Samuel P. De Bow, Jr., National Oceanic & Atmospheric Administration (NOAA)
2045 – 2100 Closing Remarks – Jim Pollock, Director of Homeland Security Programs, Naval Undersea Warfare Center, Newport, RI

IEEE OES SCHEDULE
Technology…The Key Enabler for Homeland Security

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<td>Pamela Hurst, Workshop Chair, Jim Pollock, Naval Undersea Warfare Center</td>
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<td>Congressman Curt Weldon (R-PA)</td>
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<td>0830</td>
<td>CAPT George Vance Assistant Director of Office of Net Assessment in the office of the Secretary of Defense</td>
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<td>CAPT David M. Schubert, USN, Commanding Officer</td>
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<tr>
<td>0900</td>
<td>Lunch (Bucks)</td>
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<tr>
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<td>Panel: (Montgomery Lancaster)</td>
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<td>1030</td>
<td>Government Perspective</td>
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<td>1030</td>
<td>Virginia D. DeGiorgi, PhD., Swampworks, Office of Naval Research</td>
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<tr>
<td>1050</td>
<td>Gene Gallaher, Homeland and Force Protection, Product Area Director NWC</td>
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<tr>
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<td>Jeffrey P. High, Director of Maritime Domain Awareness, USCG</td>
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<tr>
<td>1130</td>
<td>CAPT Paul Cruz Program Manager, Anti-Terrorism Afloat (PMS 480)</td>
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Luncheon (1200 – 1330) Bucks
1200 – 1215 Welcome
   Pamela Hurst, Workshop Chair & Executive Committee Chair
1245 – 1330 Keynote Speaker Introduction: Robert Bannon, Workshop Co-Chair and Executive Committee
   Honorable Curt Weldon (R-PA)

   Dave Phillips, Utilization of AUV for Location and Under Ice Recovery and Forensics, Undersheriff, St. Louise County Sheriff’s Department, Minnesota
Session 3: (1330 - 1500)

Session Chair: Stan Chamberlain, IEEE-OES, VP Technical Committee

Track 1: Sensors Gettysburg
- Using Passive Sonar for Swimmer Localization: A Feasibility Study
  Dr. Brian F. Harrison, Dr. G. Clifford Carter, Naval Undersea Warfare Center, Newport, Rhode Island
- Fishline
  Dr. Marilyn Berliner, Naval Undersea Warfare Center, Newport, Rhode Island
- Harbor Fence & Acoustic Fence for Port Security Applications
  Larry R. McDonald, Sr. Scientist, Maritime Surveillance and Security Observation, Science Applications International Corporation (SAIC)
- Advanced Demonstration Model (ADM) Sensor-Node Hardware Design for the Deployable Autonomous Distributed System-Demonstration (DADS-D)
  Joe Peters, Dir. of New Business Development, Ultra-Electronics – Undersea Sensors Systems, Inc. (USSI)

Session Chair: Dr. Ferial El-Hawary, P.E., IEEE-OES ADCOM

Track 2: Vehicles Technologies Valley Forge
- A Vision System for Automated Inspection of Underwater Structures
  Shahriar Neghadaripour, Professor, Dept. Electrical and Computer Engineering, University of Miami, Florida
- Scalable, Non-lethal Deterrent to An Underwater Terrorist Threat To High Value Maritime Threats (Sensors & Vehicle Tech for Protecting Our Ports, Waterways & Coastlines)
  Robert De LaCroix, HAI, New York
- CetusII Harbor Security Configuration Hull Search Demonstration Results
  Gary M. Trimble Lockheed Martin MS2 - Perry Technologies
- Benthos Singray ROV combined with Coda Octopus Echoscope Forms an Efficient Partnership for Swimmer Detection and Pier and Hull Inspection
  Richard Tidd, Staff Engineer, BENTHOS, INC.

Session Chair: Marianne Molchan, Molchan Marine Sciences

Track 3: Terrorist Threat Vulnerabilities GS-1
- GELMAN – Physical Module for Measuring Blast Effects on the Human Throat in Urban Structures and Environments
  Dr. Virginia DeGiorgi, K. Simmonds, P. Matic, A. Leung, Naval Research Laboratory, Washington, DC
- GPS Interference Detection and Location: Protecting a Critical Infrastructure
- ForcePRO: Terrorism Risk Analysis and Decision Support Software
  Kenneth Knox, Ph.D., P.E. Research Engineer, Contr., Airforce Research Laboratory, Rebecca L. Ferris, Computer Scientist, Naval Surface Warfare Center, FL
Session Chair: Jim Collins, IEEE OES ADCOM, Vice President

Track 4: **Maritime Domain Awareness GS-2**
- *Wireless Sensor Network Based Mobile Surveillance System*, Edmund Doray, Naval Surface Warfare Center, Florida

Session Chair: Dr. Diane DiMassa, IEEE-OES ADCOM, Massachusetts Maritime Academy, Professor

Track 5: **Testbeds, Communication, Recovery GS-6/7**
- *Body Recoveries Under Ice* Dave Phillips, Undersheriff, St. Louise County Sheriff’s Department, Minnesota
- *NAS-HAIL Acoustic Modem as an Enabling Tool for the Command, Control, Telemetry, and Ranging of Remotely Deployed Sensors* Peter Yinger, Nautronix MariPro, Inc., Director, Business Development, California

Break (Exhibit Area) (Exhibits Open) (1500 – 1530)

**Session 4:** (1530-1700)

Session Chair: Dr. Marilyn Berliner, NUWC

Track 1: **Sensors Gettysburg**
- *The Applications of 3D Realtime Sonar to Port, Harbor and Vessel Security* Angus Lugsdin, VP, Sales, CodaOctupus Group, Inc. New York
- *C3D: A Novel Acoustic Technology for Port and Harbor Surveillance* Richard Tidd, Staff Engineer, Benthos, Inc., Massachusetts
- *Gulf FiberNetTM Secure Fiber Encircles the Gulf of Mexico* Jim Byous, VP, Projects, Ocean Fibre LLC

Session Chair: Pam Lisiewicz, Deputy Director for Undersea Warfare Command and Control Systems.NUWC.

Track 2: **Vehicles Technologies Valley Forge**
- *RCT for Unmanned Maritime Vehicles* Larry Howard, MMPC Software Product Leader, Naval Surface Warfare Center, Indiana
- *Hydrodynamic Improvement for ROV’s* Mathew Weldon, David Stinebring, Applied Research Laboratory, Marcus Kolb, VideoRay, LLC, Pennsylvania
Session Chair: John A. Schiltz, Sr. Business Development Manager, Maritime Surveillance & Security Operations, SAIC

Track 3: Anti-Swimmer Detection Technologies GS-1
- Non-Lethal Weapons Modules for Unmanned Surface Vehicles Keith Bruce, Naval Undersea Warfare Center, NUWC, Rhode Island
- Automated Harbor and Ship Defense Against Surface and Subsurface Intrusion Dale Green, Principal Engineer, Benthos, Inc., Massachusetts

Session Chair: Brian O'Connell, President, IEEE SSIT

Track 4: Maritime Domain Awareness GS-2
- Swampworks – Enhancing Naval and Homeland Security Dr. Virginia DeGiorgi, Ph. D. Office of Naval Research (ONR)
- Automating Institutional Memory System (AIMS) for Homeland Security David Frost, Lockheed Martin Corporation
- Joint Action: Connecting the Dots with Regional Information Sharing and Analysis Brook Doty, Roger Hawkes TETRA TECH EM Inc.

Session Chair: Walter Lincoln, Lincoln Maritime LLC

Track 5: Breakthrough Technologies GS-6/7
- Enhanced Secure IDs using Secret Share Visual Encryption Subramania Sudharsanan, Associate Professor, Department of Electrical and Computer Engineering, Queen’s University, Canada
- tbd

Closing Remarks (1700 - 1730) Lancaster Montgomery
Pamela Hurst, Workshop Chair
Jim Pollock, Director of Homeland Security Programs, Naval Undersea Warfare Center, Newport, RI,

2005 Homeland Security Technology Workshop:

Location Crowne Plaza Hotel, Warwick, Rhode Island

Date December 6-8, 2005

Have a safe and wonderful holiday – see you next year!
Exhibitors 2004:

- Advanced Ceramics Research, INC (ACR)
- Benthos, Inc.
- Caldwell Marine
- Dynamics Technology, Inc. (DTI)
- Electronic Sales of New England
- Falmouth Scientific
- Holland & Knight LLP
- IEEE – OES (Oceanic Engineering Society)
- IEEE – Sensor Council
- Kongsberg
- L-3 Klein Associates
- Lockheed Martin Marine Systems & Sensors
- Lincoln Maritime LLC
- Molchan Marine Sciences
- MOTN (Marine & Oceanographic Technology Network)
- NUWC Division, Newport, RI
- Ocean Design Inc.
- QinetiQ
- Roper Resources
- SEACON Phoenix
- TETRA TECH EM, Inc.
- SAIC
- Video Ray, LLC
- NOBSKA

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- WFN Strategies: Sub Telecom Forum
- The Law Firm of Holland & Knight LLP Maritime Items Web Newsletter: Dennis Bryant, Senior Partner

Corporate Dinner Tables:
Lockheed Martin
Brush Wellman Inc

Sponsorships Available:
Financial contributions can be made to recognize sponsors:
1.) Continental Breakfast, December 7 & 8, 2004
2.) Breaks, December 7 & 8, 2004
3.) Exhibitor’s Reception, December 7, 2004
4.) Corporate Dinner Table(s), December 7, 2004
   - 10 Seats/table for $750.00