Workshop Program:

07:00-08:30 Registration/Breakfast

08:30-08:40 Welcome Address

08:40-09:40 Invited Talks (Session Chair: Milica Stojanovic, MIT/WHOI)

- Acoustic Propagation Considerations for Underwater Acoustic Communications Network Development
  James Preisig (WHOI)

- Modulation and Demodulation Techniques for Underwater Acoustic Communications
  John Proakis (UCSD)

- State-of-the-Art in Protocol Research for Underwater Sensor Networks
  Ian Akyildiz (Georgia Institute of Technology)

09:40-10:40 Session 1: Systems (Session Chair: Jun-Hong Cui, UCONN)

- A Survey of Practical Issues in Underwater Networks
  Jim Partan (UMass-Amherst/WHOI), Jim Kurose (UMass-Amherst), Brian Levine (UMass-Amherst)

- Wide Area Ocean Networks: Architecture and System Design Considerations
  Sumit Roy, Payman Arabshahi, Dan Rouseff, Warren Fox (University of Washington)

- Localization in Underwater Sensor Networks -- Survey and Challenges
  Vijay Chandrasekhar, Winston KG Seah (Institute for Infocomm Research, Singapore), Yoo Sang Choo, How Voon Ee (National University of Singapore)

10:40-11:00 Coffee Break

11:00-12:00 Session 2: Analysis and Algorithms (Session Chair: Urbashi Mitra, USC)

- On the relationship between capacity and distance in an underwater acoustic communication channel
  Milica Stojanovic (MIT/WHOI)

- Deployment Analysis in Underwater Acoustic Wireless Sensor Networks
  Dario Pompili, Tommaso Melodia, Ian F. Akyildiz (Georgia Institute of Technology)

  Leonardo Badia (IMT Lucca Institute for Advanced Studies, Italy), Michele Mastrogiavanni, Chiara Petrioli, Stamatis Stefanakos (University of Rome, Italy), Michele Zorzi (University of Padova, Italy)

12:00-14:20 Poster/Demo Session (including short papers, work-in-progress posters, and demos) and Lunch
Short Papers (presented as posters)

- Sensor Networks of Freely Drifting Autonomous Underwater Explorers
  Jules S. Jaffe (Scripps Institution of Oceanography/UCSD), Curt Schurgers (UCSD)

- Cooperative Multihop Communication for Underwater Acoustic Networks
  Cecilia Carbonell (Qualcomm), Urbashi Mitra (USC)

- Reconfigurable Acoustic Modem for Underwater Sensor Networks
  Ethem M. Sozer, Milica Stojanovic (MIT)

- Why Underwater Acoustic Nodes Should Sleep With One Eye Open: Idle-time Power Management
  In Underwater Sensor Networks
  Albert F. Harris III (University of Padova, Italy), Milica Stojanovic (MIT, USA), Michele Zorzi
  (University of Padova, Italy)

- On Applying Network Coding to Underwater Sensor Networks
  Zheng Guo, Peng Xie, Jun-Hong Cui, Bing Wang (UCONN)

- A MAC Protocol for Ad-Hoc Underwater Acoustic Sensor Networks
  Borja Peleato, Milica Stojanovic (MIT)

Work-in-Progress Posters

- Medium Access for Underwater Acoustic Sensor Networks
  Affan A. Syed, Wei Ye, John Heidemann (USC)
  <Extended Abstract>

- Underwater Sensor Network Deployment for Water Quality Monitoring
  Nadjib Achir, Khaled Boussetta (University Paris 13, France), Nadjib Aitsaadi, Guy Pujolle
  (University Paris 6, France)
  <Extended Abstract>

- Analyzing the Effect of 3D Geometric Parameters on Localization Accuracy for Underwater Sensor Networks
  Diba Mirza and Curt Schurgers (UCSD)
  <Extended Abstract>

- Non-geographical Underwater Routing with No Proactiveness and Negligible On-demand Floods
  Uichin Lee, Jiejun Kong, Eugenio Magistretti, Luiz Filipe M. Vieira, Mario Gerla (UCLA)
  <Extended Abstract>

- Analysis of Aloha Protocols for Underwater Acoustic Sensor Networks
  Luiz Filipe M. Vieira, Jiejun Kong, Uichin Lee, Mario Gerla (UCLA)
  <Extended Abstract>

- Localization for Large-Scale Underwater Sensor Networks
  Zhong Zhou, Jun-Hong Cui, Shengli Zhou (UCONN)
  <Extended Abstract>

- R-MAC: A Reservation-Based MAC Protocol for Underwater Sensor Networks
  Peng Xie, Zhong Zhou, Jun-Hong Cui (UCONN)
  <Extended Abstract>
• A Lab Underwater Sensor Network (UWSN) Testbed Using Micro-Modem
  Zheng Peng, Jun-Hong Cui (UCONN), Lee Freitag (WHOI)
<Presentation Slides>

Demos (Click Here for Detailed Information)

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<th>Institution</th>
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<td>Ethem Sozer, Milica Stojanovic</td>
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<td>WHOI</td>
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<td>Jim Partan</td>
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14:20-15:50 Panel Discussion: Underwater Networks: Methods, Systems, and Applications

• Chris Clark (Bioacoustics Research Program, Cornell Lab of Ornithology)
• Scott Gallagher (Biology, WHOI)
• John Heidemann (ISI/USC)
• Daniel Nagle (NUWC Newport)
• Richard Nielsen (Boeing)
• Jason Redi (Mobile Networking Systems, BBN Technologies)
• Thomas Torgersen (Marine Sciences, UCONN)

15:50-16:10 Coffee Break

16:10-17:30 Session 3: System Design (Session Chair: Kevin Fall, Intel Research)

• Electromagnetic Communications within Swarms of Autonomous Underwater Vehicles
  Michael R. Frater, Michael J. Ryan, Robin M. Dunbar (The University of New South Wales, Australia)

• Design of a Low-cost Acoustic Modem for Moored Oceanographic Applications
  Bridget Benson, Grace Chang, Derek Manov, Brian Graham, Ryan Kastner (UCSB)

• Low-Power Acoustic Modem for Dense Underwater Sensor Networks
  Jack Wills, Wei Ye, John Heidemann (ISI/USC)

• Status Packet Deprecation and Store-Forward Routing in AUSNet
  Matthew Haag, Emmanuel Agu (Worcester Polytechnic Institute), Rick Komerska, Steven G. Chappell (Autonomous Undersea Systems Institute), Radim Bartos (University of New Hampshire)

17:30-17:40 Wrap-Up and End of Workshop