



Netted Sensors Community 2005 Workshop

Environmental Monitoring

Dr. Brian P. Flanagan

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Environmental Monitoring

- **Long term sensing of the environment**
 - Agriculture
 - Weather patterns
 - Habitat monitoring
- **Topics**
 - Package and platform design
 - Efficient communications
 - Distributed control



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Challenges & Issues

● Issues

- Challenging environments
- Long term deployments
- Applications may change over the life time of the network

● Technical challenges in the particular topic area

- Very efficient communications needed to reduce power requirements
- Rugged platforms to protect sensors without reducing functionality
- Adapting the application to the environment
- Integrating sensing and control



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Agenda

- 0850 – 0905** Session Introduction – Brian Flanagan (MITRE)
- 0905 – 0925** Sergio Servetto (Cornell University)
“On the Structure of Data Sets Observed by Physically Embedded Networks“
- 0925 – 0945** David Fries (University of South Florida)
“Sea Microsystems Technology (MST) Advances for Sensor Networks for Environmental and Security Monitoring“
- 0945 – 1005** Break
- 1005 – 1025** Yannis Paschalidis (Boston University)
“The Role of Optimization in Sensor Networks: Localization and Energy-Aware Routing“
- 1025 – 1045** Ron Strich (Tendril Networks)
“Active Network Issues“
- 1045 – 1105** Speaker Questions and Answers





Prof. Sergio Servetto

- **Sergio D. Servetto was born in Argentina, on January 18, 1968. He received a *Licenciatura en Informática* from Universidad Nacional de La Plata (UNLP, Argentina) in 1992, and the M.Sc. degree in Electrical Engineering and the Ph.D. degree in Computer Science from the University of Illinois at Urbana-Champaign (UIUC), in 1996 and 1999. From 1991 to 1994 Sergio worked as a programmer for IBM (Buenos Aires, Argentina). From 1994 to 1999 he was a Graduate Research Assistant at UIUC. From 1999 to 2001 he worked at the Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland. Since Fall 2001, he has been an Assistant Professor in the School of Electrical and Computer Engineering, Cornell University. He is also a member of the field of Applied Mathematics at Cornell. His research interests are centered around information theoretic aspects of networked systems, with a current emphasis on problems that arise in the context of large-scale sensor networks.**



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Prof. David Fries

David Fries is the Director of Organic Microsystems at the University of South Florida. His primary research interest is in microsystems for inner space and mobile robotic systems. Original author of USF MEMS Program and National Forensic Science and Tech Center. Principal Scientist for Army, Navy, NSF and NOAA projects, Founder of Intelligent MicroPatterning - MEMS corp. Has eight Patents issued and licensed three technologies. Co-Chair NSF Sensors for Environmental Observatories Workshop, BSc Chemistry from the U-Pittsburgh, MSc Chemistry at USF. He was previously a Staff Scientist in Sandia National Labs/Lockheed Martin Corp.



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Prof. Yannis Paschalidis

● Yannis Paschalidis is an Associate Professor in the College of Engineering at Boston University and the Co-Director of the Center for Information and Systems Engineering (CISE). CISE is a Boston University research center with 22 affiliated faculty and more than \$11 million in externally funded research projects. Prof. Paschalidis also serves as the Academic Director of the Sensor Network Consortium (SNC) -- an industry consortium he spearheaded which currently consists of 13 companies focusing in sensor networks.

● Prof. Paschalidis completed his graduate education at the Massachusetts Institute of Technology (MIT) receiving an M.S. (1993) and a Ph.D. (1996) degree, both in Electrical Engineering and Computer Science. In September 1996 he joined Boston University where he has been ever since. He has held visiting appointments with MIT, and the Columbia University Business School. His current research interests lie in the fields of systems and control, optimization, networking, operations research, and computational biology. The main application areas he is targeting include communication and sensor networks, manufacturing systems, and supply chains.



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Mr. Ron Strich

- **Senior Vice President of Business Development for Tendril Networks.**
- **Tendril supplies the tools and expertise to shorten the trip from idea to implementation making sensor network development faster, easier, and much more efficient.**
- **Tendril offers a wireless sensor network middleware platform for Java and .NET**



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