CWINS Overview

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Worcester Polytechnic Institute

http://www.cwins.wpi.edu

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CWINS is an internationally renowned compact wireless research laboratory with a successful history of research alliances with other groups in the industry and academia. Prominent features of CWINS include:

• Close ties with the world leading wireless industry of Finland, that includes Nokia
• Experience in technology and regulatory issues for commercial and military applications
• Experience in development of testbeds and tools for design and performance monitoring
• Experience as a corporate consultant in establishing wireless programs in several companies
• Experience in on-site training programs in several companies
• Being a center for information exchange among different sectors of the wireless industry by publishing an international journal and organizing several international conferences
## Current Personnel

**Center for Wireless Information Network Studies**

### Full-Time Staff

- Kaveh Pahlavan, Ph.D., Director of the Center
- A. Hatami, PhD Student
- B. Alavi, PhD student
- N. Alsindi, Ph.D. Student
- M. Heidari, PhD Student
- F. Ozan Akgul, PhD student
- Leon Teuo Metreaud, MS student

### Part-Time Affiliate Staff

- Allen Levesque, Ph.D., Research Professor
- Xinrong Li, Ph.D., U of N. Texas, Consultant on Signal Processing
- Craig Mathais, Farpoint Group, Consultant in Wireless LANs
- Robert Tingley, Draper’s Laboratories, Research Affiliate

### WPI Professors with CWINS Experience

**ECE Department:** Wenjing Li (Wireless Security), Richard Brown (Signal Processing for Wireless Networks), Sergey Makarov (Antenna and Propagation), Berk Sunar (Cryptography)

**CS Department:** Emmanuel Agu (Wireless Applications), Bob Kinicki (Networking)
Recent Projects

Center for Wireless Information Network Studies

- Wireless LAN Research Laboratory (an industrial alliance)
- Innovative Indoor Geolocation Using RF Multipath Diversity (with Draper’s Laboratories, sponsored by DARPA)
- Innovative Methods for Geolocation and Communication with UWB Mobile Radio Networks (with IWT, sponsored by DARPA)
- An Integrated Multi-Layer Wireless LAN Testbed (sponsored by NSF)
- Modeling of Radio Propagation Inside an Elevator (with United Technology Research Center, sponsored by OTIS)
- Indoor Geolocation Science for 4G Wireless Networks (sponsored by NSF)
- Real-Time Channel Simulation for Telecommunication and Geolocation Applications (sponsored by DoD)
- Home RF Networks with Geolocation (with U of Oulu, sponsored by Nokia, Finnish Airforce, and TEKES in Finland)
- Urban Geolocation System Analysis and Demonstrator (with Tasc/Litton, sponsored by DARPA)
- Wireless LAN for UMTS (with U of Oulu, sponsored by Nokia, Sonera, and TEKES in Finland)
### Past Project Sponsors

#### Center for Wireless Information Network Studies

**Government Agencies:** National Science Foundation, DARPA

**Local Industry**
- GTE Laboratories, TASC/Litton, Bell Atlantic Mobile, BBN, Sierra Comm, Raytheon Company, DEC, Alta Group of Cadence

**National Industry:**
- Savi Technologies (CA), Apple Computers (CA), Radio LAN (CA), Hewlett-Packard (CA), Motorola (IL), Texas Instruments (TX), United Technologies Research Center (CN)

**International:**
- Nokia (FI), Elektrobit (FI), Sonera (FI), TEKES (FI), Finnish Air Force (FI), NTT (JAPAN), Jolt (ISRAEL)

**WLRL Alliance:**
- Aironet, Cushcraft, Harris Semiconductors, Persoft, DEC

**Corporate Consulting:**
- Nokia, Mercury Computers, WINDATA, Jet Propulsion Laboratories, Honeywell, LK-Products, Finnish Academy, National Research Council

**Training:**
- DEC, Sierra Comm, WINDATA, Codex/Motorola, NTT, Nokia