

# Heather (Haitao) Zheng, Ph.D.

---

## CONTACT

Department of Computer Science  
University of California, Santa Barbara  
Harold Frank Hall, 1121  
Santa Barbara, CA 93106, USA

Email: [htzheng@cs.ucsb.edu](mailto:htzheng@cs.ucsb.edu)  
Tel: 805-893-3560  
Fax: 805-893-8553  
Homepage: <http://www.cs.ucsb.edu/~htzheng>

## EDUCATION

**Ph.D.**, Electrical and Computer Engineering, University of Maryland, College Park 1999  
Advisor: Prof. K. J. Ray Liu  
**M.S.E.**, Electrical and Computer Engineering, University of Maryland, College Park 1998  
Advisor: Prof. K. J. Ray Liu  
**B.S.**, Electrical Engineering, Xi'an Jiaotong University, China 1995

## HONORS AND AWARDS

IEEE/ACM DySPAN Conference Best Student Paper Award 2007  
University of California Regents Junior Faculty Fellowship 2007  
Fellow of World Technology Network, Top 5 in Communications 2006  
MIT Technology Review's 10 Emerging Technologies 2006  
MIT Technology Review's Top 35 Technology Innovators under Age of 35 (TR35) 2005  
Bell Laboratories President's Gold Award, Lucent Technologies 2002  
George Harhalakis Outstanding Graduate Student Award, University of Maryland, College Park (1 per year among 6 departments) 1998  
Institute for Systems Research Fellowship, University of Maryland, College Park (3 per year among 6 departments) 1995 - 1998

## ACADEMIC AND INDUSTRY EXPERIENCES

Assistant Professor, Department of Computer Science 2005- Present  
**University of California, Santa Barbara**  
Project Lead/Researcher, Wireless and Networking Group 2004 - 2005  
**Microsoft Research Asia**  
Member of Technical Staff, Wireless Research Laboratory 1999 - 2004  
**Bell-Labs, Lucent Technologies**  
Research Assistant, Electrical and Computer Engineering Department 1998 - 1999  
**University of Maryland, College Park**  
Fellow, Electrical and Computer Engineering & Institute for System Research 1995 - 1998  
**University of Maryland, College Park**

## PROFESSIONAL ACTIVITIES

2008-	Associated Editor	IEEE Transaction on Mobile Computing
2008-	Editor	IEEE Transaction on Wireless Communications
2008	Technical Program Committee	IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN 2008)
2008	Technical Program Committee	IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2008)
2008	Technical Program Committee	IEEE Workshop on Networking Technologies for Software Defined Radio (SDR) Networks (WSDR 2008)
2008	Technical Program Committee	International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CrownCOM 2008)
2007	Technical Program Committee	IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN 2007)
2007	Technical Program Committee	ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc 2007)
2007	Technical Program Committee	IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2007)
2007	Technical Program Committee	IEEE Workshop on Networking Technologies for Software Defined Radio (SDR) Networks (WSDR 2007)
2007	Technical Program Committee	The Second ACM International Workshop on Wireless Network Testbeds, Experimental evaluation and CHaracterization (WiNTECH 2007) in conjunction with ACM MobiCom 2007
2007	Technical Program Committee	The First International Workshop on Cognitive Wireless Networks (CWNets 2007)
2007	Technical Program Committee	International Conference on Computer Communications and Networks (ICCCN 2007)
2007	Technical Program Committee	International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CrownCOM 2007)
2007	Technical Program Committee	IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2007)
2006	Technical Program Committee	IEEE Consumer Communications and Networking Conference, Workshop on Cognitive Radios (CCNC 2006)
2006	Technical Program Committee	International Workshop on Technology and Policy for Accessing Spectrum (TAPAS 2006)
2006	Technical Program Committee	IEEE Workshop on Networking Technologies for Software Defined Radio (SDR) Networks (WSDR 2006)
2006	Technical Program Committee	IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2006)

2006	Technical Program Committee	International Conference on Communications and Networking in China (CHINACOM 2006)
2006	Technical Program Committee	ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc 2006)
2006	Technical Program Committee	International Wireless Internet Conference (WICON 2006)
2006	Technical Program Committee	IEEE Vehicular Technology Conference Fall (VTC Fall 2006)
2006	Technical Program Committee	IEEE Wireless Communications and Networking Conference (WCNC 2006)
2006	Technical Program Committee	IEEE Radio and Wireless Symposium (RWS 2006)
2005	Publication Chair	International Workshop on Multimedia Signal Processing (MMSP 2006)
2006	Track Chair, Technical Program Committee	IEEE International Conference on Multimedia & Expo (ICME 2006)
2005	Technical Program Committee	International Symposium on Multimedia over Wireless (WirelessCom 2005)
2005	Technical Program Committee	ACM International Workshop on Wireless Security (WiSe 2005)
2004	Lead Guest Editor	Special Issue on Advanced Mobility Management and QoS Protocols for Mobile Internet, IEEE Journal on Selected Area on Communications (JSAC)
2005	Lead Guest Editor	Special Issue on Cross Layer Interaction for Communications, EURASIP Journal on Applied Signal Processing
2005	Advisor	Multimedia Signal Processing Technical Committee
2004	Technical Program Area Chair, Technical Program Committee	IEEE International Conference on Multimedia & Expo (ICME 2004)
2003	Technical Program Committee	IEEE International Conference on Communications (ICC 2003)
2003	Technical Program Committee	IEEE International Conference on Multimedia & Expo (ICME 2003)
2002	Technical Program Committee	IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2002)
2002	Technical Program Committee	IEEE International Conference on Multimedia & Expo (ICME 2002)
2001	Technical Program Committee	IEEE International Conference on Multimedia & Expo (ICME 2001)
2001	Special Session Organier	“Mobile Multimedia Communications,” International Workshop on Multimedia Signal Processing (MMSP 2001)

1. H. Zheng and L. Cao, "Decentralized Spectrum Management through User Coordination," In *Cognitive Wireless Communications Networks*, Vijay Bhargava and Ekram Hossain, ed., Springer, 2007.
2. S. Das, T. Klein, H. Viswanathan, K. Leung, S. Mukherjee, G. Rittenhouse, L. Samuel, H. Zheng, "A Distributed Architecture for Future WiMAX-like Wireless IP Networks," in *WiMAX/MobileFi: Advanced Research and Technology*, Yang Xiao, ed., 2007.
3. H. Zheng and J. Boyce, "Streaming Video over Wireless Networks," in *Wireless Internet Handbook, Technologies, Standards, and Applications*, B. Furht, M. Ilyas, ed., CRC press, pp. 105-126, 2003.
4. H. Zheng and K. J. R. Liu, "Multimedia Services over Digital Subscriber Line," in *Encyclopedia of Telecommunications*, J. Proakis, ed., John Wiley & Sons, Inc., 2002.

#### EDITED SPECIAL ISSUES IN JOURNALS

1. Special Issue on Advanced Mobility Management and QoS Protocols for Mobile Internet, *IEEE Journal on Selected Area on Communications (JSAC)*, (Lead Editor, with A. H. Aghvami, A. Ganz, R. Sivakumar and W. Zhu), Vol. 22, No. 5, June 2004.
2. Special Issue on Cross Layer Design for Communications and Signal Processing Systems, *EURASIP Journal on Applied Signal Processing*, (Lead Editor, with A. Ortega, L. Tong and M. Zorzi), February 2005.

#### PUBLICATIONS IN REFERRED JOURNALS

1. H. Zheng and K.J.R Liu, "Robust Image and Video Transmission over Spectrally Shaped Channel Using Multicarrier Modulation," *IEEE Trans. On Multimedia*, Vol. 1, No. 1, pp. 88-103, March 1999.
2. H. Zheng and K.J.R. Liu, "The Subband Modulation: A Joint Power and Rate Allocation Framework for Subband Image and Video Transmission," *IEEE Trans. on Circuits and Systems for Video Technology*, Vol. 9, No. 5, pp.823-838, August 1999.
3. H. Zheng and K.J.R. Liu, "Power Minimization for Delivering Integrated Multimedia Services Over Digital Subscriber Line," *IEEE Journal of Selected Areas in Communications*, Vol. 18, No. 6, pp. 841-849, Special Issue on Error-Resilient Image and Video Transmission, June 2000.
4. H. Zheng and K.J.R Liu, "Optimization Approaches for Delivering Multimedia Services over Digital Subscriber Lines," *IEEE Signal Processing Magazine*, Vol. 17, No. 4, pp. 44-60, July 2000.
5. H. Zheng and J. Boyce, "An Improved UDP Protocol for Video Transmission over Internet-to-Wireless Networks," *IEEE Trans. on Multimedia*, Vol. 3, No. 3, pp. 356-365, September 2001.
6. H. Zheng, A. Lozano and M. Haleem, "Multiple ARQ Processes for MIMO Systems," *EURASIP Journal on Applied Signal Processing*, Special Issue on MIMO Systems and Signal Processing, Vol. 2004, No. 5, pp.772-782, May 2004.

7. H. Aghvami, A. Ganz, R. Sivakumar, H. Zheng, W. Zhu, "Guest editorial - Advanced mobility management and QoS protocols for next-generation wireless internet," *IEEE Journal on Selected Areas in Communications*, vol. 22, no. 5, pp. 797-801, June 2004.
8. H. Zheng and H. Viswanathan, "Optimizing ARQ Performance in High Speed Downlink Systems with Scheduling," *IEEE Trans. on Wireless Communications*, vol. 4, iss. 2, March 2005, pp.495-506.
9. J. Chen, T. Lv and H. Zheng, "Joint Cross-layer Design for Wireless QoS Content Delivery," accepted by Special Issue on Cross Layer Interaction for Communications, *EURASIP Journal on Applied Signal Processing*, February 2005.
10. S. Das, T. Klein, K. Leung, S. Mukherjee, G. Rittenhouse, L. Samuel, H. Viswanathan and H. Zheng, "Distributed paging and registration in wireless networks," *IEEE Network Magazine*, Vol. 19, No. 5, p. 19-25, October 2005.
11. C. Peng, H. Zheng, B. Y. Zhao, "Utilization and Fairness in Spectrum Assignment for Opportunistic Spectrum Access," *ACM Mobile Networks and Applications (MONET)*, May 2006.
12. J. Zhao, H. Zheng and G. Yang, "Spectrum Sharing through Distributed Coordination in Dynamic Spectrum Access Networks," *Wireless Communications and Mobile Computing*, Special issue on Cognitive and software defined radio, and adaptive wireless communication systems, 2007.
13. L. Cao and H. Zheng, "Distributed Rule-Regulated Spectrum Sharing," *IEEE Journal on Selected Areas in Communications*, Special Issue on Cognitive Radio: Theory and Applications, 2008, to appear.
14. S. Gandhi, C. Buragohain, L. Cao, H. Zheng and S. Suri, "Towards Real-Time Dynamic Spectrum Auctions," *Computer Networks (Elsevier)*, Special Issue on Cognitive Wireless Networks, 2008, to appear.
15. L. Cao and H. Zheng, "Understanding the Power of Distributed Coordination in Spectrum Management," *ACM/Springer Mobile Networks and Applications (MONET)*, Special Issue on Cognitive Radio Oriented Wireless Networks and Communications, 2008, to appear.
16. Y. Zhu and H. Zheng, "Understanding the Impact of Interference on Collaborative Relays," *IEEE Transaction on Mobile Computing*, 2008, to appear.
17. V. Kone, S. Das, B. Y. Zhao and H. Zheng, "QUORUM-QUality Of service RoUting in wireless Mesh networks," *ACM/Springer Mobile Networks and Applications (MONET)*, Special Issue on Advances in Heterogeneous Networking, 2008, to appear.

#### PUBLICATIONS IN REFERRED CONFERENCES

1. H. Zheng and K. J. R. Liu, "The Subband Modulation: A Combined Source Coding and Channel Modulation Scheme for Image and Video Transmission," *Proceedings of IEEE Int'l Conf. on Image Processing (ICIP)*, pp. II-132-136, Chicago, October 1998.

2. H. Zheng, A. Raghupathy, and K. J. R. Liu, "A New Loading Algorithm for Image Transmitting over Noisy Channel: Combined Source Coding and Multicarrier Modulation Approach," Proceedings of the 32st Asilomar Conference on Signals, Systems, and Computers, pp. 1611-1615, vol. 2, Pacific Grove, November 1998 (invited paper).
3. H. Zheng and K. J. R. Liu, "Robust H.263 Video Transmission Over Spectrally Shaped Channels using Multicarrier Modulation," Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSP), pp. 585-590, Redondo Beach, December 7-9, 1998.
4. H. Zheng and K.J.R. Liu, "Loading Algorithms for Subband Coded Image Transmission Using Multicarrier Modulation," Proceedings of SPIE Visual Communications and Image Processing, Vol.3653, pp. 218-229, San Jose, January 1999 (invited paper).
5. H. Zheng and K.J.R. Liu, "A New Loading Algorithm Multimedia Data Transmission Over Spectrally Shaped Channels Using Multicarrier Modulation," Proceedings of IEEE Int'l Conference on Communications (ICC), Vol. 3, pp. 1678-1682, Vancouver, May 1999.
6. W. Trappe, H. Zheng, and K.J.R. Liu, "Adaptive Lifting Coding Scheme for Video Scene Changes," Proceedings of IEEE Multimedia Signal Processing Workshop (MMSP), pp.321-326, Copenhagen, Denmark, September 1999.
7. H. Zheng and K.J.R. Liu, "Transmitted Power Minimization for Subband Image Transmission over Spectrally Shaped Channels," Proceedings of IEEE Multimedia Workshop on Multimedia Signal Processing (MMSP), pp. 9-14, Copenhagen, Denmark, September 1999.
8. H. Zheng and K.J.R. Liu, "Power Optimized Space-Time Coding for Image and Video Transmission over Wireless Channels," Proceedings of IEEE Int'l Conf. on Image Processing (ICIP), Kobe, Japan, October 1999.
9. H. Zheng and K.J.R. Liu, "Space-Time Diversity for Image over Wireless Channels," Proceedings of IEEE International Symposium on Circuit and Systems (ISCAS), Geneva, Switzerland, May 2000 (invited paper).
10. H. Zheng and J. Boyce, "Packetization Scheme for MPEG Video over Wireless," Proceedings of IEEE Wireless and Communications and Networking Conference (WCNC), Chicago, IL. September 2000, no.1, pp. 191-195 (invited paper).
11. H. Zheng and D. Samardzija, "On the Performance of H.263 Video over Multiple Antenna Systems," Proceedings of IEEE International Conf. on Vehicle Technology (VTC), Atlantic City, NJ. October 2001.
12. H. Zheng, "Impact of Hybrid ARQ on BLAST Performance," Proceedings of IEEE International Vehicle Technology Conference (VTC), Atlantic City, NJ. October 2001.
13. H. Zheng, A. Lozano and M. Haleem, "Multiple ARQ Processes for MIMO Systems," Proceedings of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC2002), Lisbon, Portugal, September 2002.
14. H. Zheng and H. Vishvanathan, "High speed downlink packet data systems with scheduling, hybrid ARQ and VoIP," Proceedings of Wireless and Optical Communications Conference, April 2003, Newark, NJ, (invited paper).

15. H. Zheng, "Optimizing Wireless Multimedia via Cross Layer Design," Proceedings of IEEE International Conference on Multimedia and Expo (ICME), Baltimore, Maryland, July 6-10, 2003, (invited paper).
16. H. Zheng and H. Vishvanathan, "Optimizing TCP Performance with HARQ and Scheduler," Proceedings of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC2003), September 7-10, 2003, Beijing, P.R. China.
17. H. Zheng and H. Vishvanathan, "Optimizing the ARQ performance in downlink packet data systems with scheduling," Proceedings of IEEE International Vehicle. Technology Conference (VTC fall), Orlando, FL. October 2003.
18. H. Zheng, G. Rittenhouse and M. Recchione, "The Performance of Voice over IP over UMTS Downlink Shared Packet Channel under Different Delay Budgets," Proceedings of IEEE Vehicle Technology Conference (VTC fall), Orlando, FL. October 2003.
19. G. Song, Y. Li, L. J. Cimini, Jr. and H. Zheng, "A Joint Channel-Aware and Queue-Aware Data Scheduling in Multiple Shared Wireless Channels," Proceedings IEEE Wireless and Communications and Networking Conference(WCNC) 2004, Atlanta, GA. vol. 5, no. 1, March 2004, pp. 1922-1927.
20. J. Chen, T. Lv and H. Zheng, "Cross Layer Design for QoS Aware Wireless Communications," Proceedings of IEEE International Symposium on Circuit and Systems (ISCAS), Vancouver, Canada. May 2004.
21. J. Chen, T. Lv and H. Zheng, "Joint cross-layer design for wireless QoS content delivery", Proceedings of IEEE International Conference on Communications(ICC), vol. 27, no. 1, June 2004 pp. 4243-4247.
22. T. E. Klein, K. K. Leung and H. Zheng, "Enhanced Scheduling Algorithms for Improved TCP Performance in Wireless IP Networks," Proceedings of IEEE Global Telecommunications Conference (Globecom), Dallas, TX, November 2004.
23. H. Zheng and C. Peng, "Collaboration and Fairness in Opportunistic Spectrum Access," Proceedings of IEEE International Conference on Communications (ICC), September 2005.
24. H. Zheng, Y. Zhu, C. Shen and X. Wang, "On the Effectiveness of Cooperative Diversity in Ad Hoc Networks: A System Level Study," Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'05), Philadelphia, PA, March 2005.
25. H. Zheng and G. Rittenhouse, "Providing VoIP Service in UMTS-HSDPA with Frame Aggregation," Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'05), Philadelphia, PA, March 2005.
26. S. Das, T. Klein, K. Leung, S. Mukherjee, G. Rittenhouse, L. Samuel, H. Viswanathan and H. Zheng, "Distributed Radio Link Control Protocol in an All-IP Cellular Network," Proceedings of IEEE Vehicular Technology Conference( VTC) Fall, September 2005.
27. L. Cao and H. Zheng, "Distributed Spectrum Allocation via Local Bargaining," IEEE Communications Society Conference on Sensor and Ad Hoc Communications and Networks (SECON'05), Santa Clara, CA, September, 2005.

28. H. Zheng and L. Cao, "Device-centric Spectrum Management," Proceedings of IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN'05), Baltimore, MD, November 2005. **Plenary Session.**
29. J. Zhao, H. Zheng and G. Yang, "Distributed Coordination in Dynamic Spectrum Allocation Networks," Proceedings of IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN'05), Baltimore, MD, November 2005.
30. Q. Wang and H. Zheng, "Route and Spectrum Selection in Dynamic Spectrum Networks," Proceedings of IEEE Consumer Communications and Networking Conference (CCNC'06), Las Vegas, NV, January 2006.
31. Q. Yang, H. Zheng, J. Zhao and V. Li, "Adaptive Channel Selection through Collaborative Sensing," Proceedings of IEEE International Conference on Communications (ICC'06), Istanbul, Turkey, June 2006.
32. P. A. Kumar Acharya, S. Singh and H. Zheng, "Reliable Open Spectrum Communications Through Proactive Spectrum Access," Proceedings of International Workshop on Technology and Policy for Accessing Spectrum (TAPAS 2006), August 2006.
33. R. Raghavendra, A. P. Jardosh, E. M. Belding-Royer and H. Zheng, "IPAC: IP-based Adaptive Packet Concatenation for Multihop Wireless Networks," Proceedings of Fortieth Annual Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, October-November, 2006.
34. H. Zheng, J. Shi and L. Cao, "Group-Mobility-Aware Spectrum Management for Future Digital Battlefields," Proceedings of Military Communications Conference (MILCOM), October, 2006.
35. A. Sharma, M. Tiwari and H. Zheng, "MadMAC: Building a Reconfigurable Radio Testbed Using Commodity 802.11 Hardware," Proceedings of IEEE Communications Society Conference on Sensor and Ad Hoc Communications and Networks (SECON) WSDR Workshop, Reston, VA, September, 2006.
36. R. Gilbert, K. Johnson, S. Wu, B. Y. Zhao, H. Zheng, "Location Independent Compact Routing for Wireless Networks," Proceedings of ACM International Workshop on Decentralized Resource Sharing in Mobile Networks (Mobishare), September 2006.
37. S. Gandhi, C. Buragohain, L. Cao, H. Zheng and S. Suri, "A General Framework for Wireless Spectrum Auctions," Proceedings of IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks(DySPAN), Plenary Session, Dublin, Ireland, April, 2007. **Best Student Paper.**
38. A. Sampath, H. Dai, H. Zheng and B. Y. Zhao, "Multi-channel Jamming Attacks using Cognitive Radios," Proceedings of International Conference on Computer Communications and Networks (ICCCN), Honolulu, HI, August 2007.
39. L. Yang, L. Cao, H. Zheng, "Proactive Channel Access in Dynamic Spectrum Networks," Proceedings of Second International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM), Orlando, FL, August 2007.

40. L. Cao and H. Zheng, "On the Efficiency and Complexity of Distributed Spectrum Allocation," Proceedings of Second International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM), Orlando, FL, August 2007.
41. V. Kone, S. Das, B. Y. Zhao and H. Zheng, "QUORUM - QQuality Of service RoUting in wireless Mesh networks," Proceedings of International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine), Vancouver, Canada, August 2007.
42. L. Cao and H. Zheng, "Stable and Efficient Spectrum Access in Next Generation Dynamic Spectrum Networks," Proceedings of The 27th Conference on Computer Communications (INFOCOM), Phoenix, AZ, April 2008, to appear.
43. B. Stone-Gross, C. Wilson, K. Almeroth, E. Belding, H. Zheng and K. Papagiannaki, "Malware in IEEE 802.11 Wireless Networks," Proceedings of the Passive and Active Measurement Conference (PAM 2008), to appear.
44. A. Sampath, L. Yang, L. Cao, H. Zheng and B. Y. Zhao, "Invited Paper: High Throughput Spectrum-aware Routing for Cognitive Radio Based Ad-hoc Networks," Proceedings of the third International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM), Singapore, May 2008, to appear.

#### INVITED TALKS (2005 – PRESENT)

December 2007	"Next Generation Dynamic Spectrum Systems"	University of Southern California
December 2007	"Next Generation Dynamic Spectrum Systems"	University of California, Davis
October 2007	"Next Generation Dynamic Spectrum Systems"	Sprint Research Lab
September 2007	"Collaborative vs. Non-Collaborative Behaviors – A Cognitive Radio Perspective"	<b>Panel:</b> ACM Mobicom 2007
September 2007	"Next Generation Dynamic Spectrum Systems"	Shanghai Jiaotong University, China
September 2007	"Next Generation Dynamic Spectrum Systems"	Tsinghua University, China
July 2007	"Next Generation Dynamic Spectrum Systems"	Microsoft Research Cambridge, UK
July 2007	"Next Generation Dynamic Spectrum Systems"	University of Cambridge, UK
April 2007	"Managing the Complexities of Open-Spectrum Systems"	Trinity College, Dublin, Ireland
November 2006	"Managing the Complexities of Open-Spectrum Systems"	Ecole Polytechnique Federale de Lausanne (EPFL)
October 2006	"Managing the Complexities of Open-Spectrum Systems"	Sprint Research Labs

August 2006	“Managing the Complexities of Open-Spectrum Systems”	Tsinghua University, China
August 2006	“Managing the Complexities of Open-Spectrum Systems”	Intel Broadband Wireless Workshop, Beijing, China
July 2006	“Managing the Complexities of Open-Spectrum Systems”	Microsoft Research Asia Lab, China
June 2006	“Managing the Complexities of Open-Spectrum Systems”	Microsoft Research Lab
June 2006	“Managing the Complexities of Open-Spectrum Systems”	Intel Research Lab
May 2006	“Managing the Complexities of Open-Spectrum Systems”	<b>Tutorial:</b> Spectrum Management for Defense Conference
March 2006	“Managing the Complexities of Open-Spectrum Systems”	HP Labs
February 2006	“Managing Open-Spectrum Systems”	Northrup Grumman
November 2005	“Managing Open-Spectrum Systems”	University of Maryland, College Park
October 2005	“Managing Open-Spectrum Systems”	U.C. Berkeley Networking Seminar
September 2005	“Managing Open-Spectrum Systems”	Bell Labs, Lucent Technologies