

Radha Poovendran

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<http://www.ee.washington.edu/people/faculty/radha/>

Citizenship: USA

Education:

1997-1999 **Ph.D.**, Department of ECE, University of Maryland, College Park
1990-1992 **MS EE.** Department of EECS, University of Michigan, Ann Arbor
1984-1988 **B.Tech EE.**, Department of EE, Indian Institute of Technology, Bombay, India

Research Interests: Applied Cryptography for Wired and Wireless Networks, Information and Game Theory, Discrete Algorithms and Optimization in Networks, Resource Allocation in Sensor Networks

Relevant Honors/Awards

1. 2006: Mentor Recognition Award, University of California, San Diego (UCSD)
2. 2005: Presidential Early Career Award for Scientists and Engineers (PECASE), White House
3. 2005: Advanced Concepts Coin, Office of the Secretary of Defense (OSD)
4. 2004: Office of Naval Research Young Investigator (ONR YIP)
5. 2002: Army Research Office Young Investigator (ARO YIP)
6. 2001: National Science Foundation Faculty Early Career (NSF CAREER)
7. 1999: National Security Agency Rising Star
8. 2002: Outstanding Teaching, electrical engineering department, University of Washington
9. 2002: Outstanding Research Advisor, electrical engineering department, University of Washington

Work Experience

Sept. 06— Current	Associate Professor of Electrical Engineering, University of Washington
Sept. 00 – Sept. 06	Assistant Professor of Electrical Engineering, University of Washington
June 2004 - Current	Advisory Board Member of the Educational Outreach Program on Information Assurance at the University of Washington
Dec. 03 – Aug. 2006	Associate Director for Research, NSA Center of Academic Excellence in Information Assurance and Cyber Security , University of Washington System, including Seattle and Tacoma Campuses
April 2001-Current	Founding Director of Network Security Laboratory (NSL), University of Washington
Feb. 00 – Sept. 00	Assistant Research Scientist University of Maryland, College Park
Aug. 99 – Feb. 00	Research Associate University of Maryland, College Park
June 97 – July 99	Faculty Research Assistant University of Maryland, College Park
Sept. 97 – Dec. 97	Graduate Teaching Fellow University of Maryland, College Park
Jan. 97 – May 97	Graduate Teaching Assistant University of Maryland, College Park
Nov. 94 – Jan. 97	Senior Research Scientist LNK Corporation, Maryland
Jan. 92 – Nov. 94	Senior Programmer Analyst Hughes STX Corporation, Maryland

PhD. Dissertation:

1. R. Poovendran, "[Key management for secure multicast communications](#)," University of Maryland, August 1999.

Internet Engineering Task Force (IETF) Contributions

1. JH Song, R. Poovendran, J. Lee, Informational RFC 4493: The AES-CMAC Algorithm.
2. JH Song, R. Poovendran, J. Lee, Standards Track RFC 4494: The AES-CMAC-96 Algorithm and Its Use with IPSEC.
3. JH Song, R. Poovendran, J. Lee, Standards Track RFC 4615: The AES-CMAC-PRF-128 Algorithm for Internet Key Exchange (IKE).

Position Papers

1. Scott Lintelman, Richard Robinson, Mingyan Li, David von Oheimb, Radha Poovendran and Krishna Sampigethaya, [Security Assurance for IT Infrastructure Supporting Airplane Production Maintenance and Operation](#) (position paper), National Workshop on Aviation Software Systems: Design for Certifiably Dependable Systems, October 2006.

Edited Books

1. R. Poovendran, C. Wang, S. Roy, Secure Localization and Time Synchronization in Wireless Ad Hoc and Sensor Networks, Springer Verlag, Jan 2007. (ISBN: 0-387-32721-5)
2. A. Perrig, R. Poovendran, K. Levitt, C. Wang, "Securing Sensor Networks," to be published by Springer Verlag, 2007.

Book Chapters

1. R. Poovendran and B. Matt, "Security Analysis and Extensions of PCB Algorithm for Distributed Key Generation," in Harmonic Analysis, Signal Processing, and Complexity, Progress in Mathematics series, Vol. 238, pp. 135-150, Birkhauser, Boston, MA, 2005. (ISBN: 0-8176-4358-3).
2. L. Lazos and R. Poovendran, "Secure Localization for Wireless Sensor Networks using Range-Independent Methods" "Secure Localization for Wireless Sensor Networks using Range-Independent Methods," in Secure Localization and Time Synchronization in Wireless Ad Hoc and Sensor Networks, to be published by Springer Verlag, 2006. (ISBN: 0-387-32721-5).
3. C. Meadows, R. Poovendran, D. Pavlovic, L. Chang, P. Syverson, "Distance Bounding Protocols: Authentication Logic Analysis and Collusion Attacks," in Secure Localization and Time Synchronization in Wireless Ad Hoc and Sensor Networks, to be published by Springer Verlag, 2006. (ISBN: 0-387-32721-5).

Edited Journals

1. Special issue on Security in wireless ad hoc networks, IEEE Journal of Selected Areas in Communications, Vol. 24, No. 2, February 2006.

Tutorials

1. R. Poovendran, "Security in wireless Sensor Networks," half-day tutorial, at IEEE SECON 2005, September 26th, 2005.

Journal Published/Accepted

1. P. Tague and R. Poovendran, "Modeling Adaptive Node Capture Attacks in Multihop Wireless Networks," Invited Paper in Special issue on Wireless Mesh Networks, Ad Hoc Networks, 2006.
2. R. Sampigethaya and R. Poovendran, "A survey on Mixnets and their applications," in *Proceedings of the IEEE*, December 2006.
3. L. Lazos, R. Poovendran, "Stochastic Coverage in Heterogeneous Sensor Networks," to appear in ACM Transactions on Sensor Networks (TOSN), August 2006.
4. M. Li and R. Poovendran, "Broadcast-enforced disenrollment in threshold schemes," in IEEE Transactions on Information Theory, April 2006.
5. R. Sampigethaya and R. Poovendran, "A framework and taxonomy for comparison of electronic voting schemes," In Journal of Computers and security, Feb. 2006.
6. L. Lazos and R. Poovendran, "Power proximity based key management for secure multicast in ad hoc networks," accepted for publication, to appear in Feb 2007 issue of *ACM/Kluwer Wireless Networks*.
7. R. Poovendran and L. Lazos, "A graph theoretic framework for preventing the wormhole attack in wireless ad hoc networks," to appear in Feb 2007 issue of *ACM/Kluwer Wireless Networks*.
8. L. Lazos and R. Poovendran, "HiRLoc: Hi-resolution robust localization for wireless sensor networks," *IEEE Journal on Selected Areas in Communications*, Vol. 24, No. 2, pp. 233-246, February 2006.
9. L. Lazos and R. Poovendran, "SeRLoc: robust localization for wireless sensor networks," *ACM Trans. Sensor Networks*, Vol. 1, No. 1, pp. 73-100, August 2005.
10. I. Kang and R. Poovendran, "Maximizing network lifetime of broadcasting over wireless stationary ad hoc networks," accepted, to appear, Special issue on energy constraints and lifetime performance in wireless sensor networks, *ACM Mobile Networks and Applications*, Vol. 10, No. 6, pp. 879-896, February 2006, Online publication October 2005.
11. M. Li, R. Poovendran, and S. Narayanan, "Protecting patient privacy against unauthorized release of medical images in a group communication environment," *Computerized Medical Imaging and Graphics*, Vol. 29, No. 5, pp. 367-383, July 2005.
12. M. Li, R. Poovendran, and David McGrew, "Minimizing center key storage in hybrid one-way function based group key management with communication constraints," *Information Processing Letters*, Vol. 93, No. 4, pp. 191-198, February 2005.
13. (10 citations) W. Trappe, J. Song, R. Poovendran, and K. J. R. Liu, "Key management and distribution for secure multimedia multicast," *IEEE Transactions on Multimedia*, Vol. 5, No. 4, pp. 544-557, December 2003.
14. (16 citations) M. Li and R. Poovendran, and Carlos Berenstein "Design of secure multicast key management schemes under communication budget constraints," *IEEE Communication Letters*, Vol. 6, No. 3, pp. 108-110, March 2002.
15. (25 citations) R. Poovendran and J. S. Baras, "An information theoretic analysis of rooted tree based multicast schemes," *IEEE Transactions on Information Theory*, Vol. 47, No. 7, pp. 2824-2834, November 2001.
16. R. Poovendran, J. E. Dorband and A. E. Yagle, "An algorithm for direct and inverse scattering problems in time domain," *Journal of the Acoustical Society of America*, Vol. 97, No. 4, pp. 2021-2027, April 1995.
17. R. Poovendran, A. E. Yagle, B. V. Rao, and J. E. Dorband, "On upper bounds of the number of equivalent oscillator-notch filter circuits: a non-commutative group theoretic approach," *IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications*, Vol. 39 No. 9, pp. 756-759, September 1992.
18. A. E. Yagle and R. Poovendran, "Numerical performance of layer stripping algorithms for two-dimensional inverse scattering problems," *Inverse Problems*, Vol. 8, No. 4, pp. 645-665, August 1992.

19. R. Poovendran and B. V. Rao, "Upper bound on the number of equivalent oscillator-notch filter circuits," *International Journal of Circuit Theory and Applications*, Vol. 18, No. 5, pp. 521-533, September-October 1990.

Conference Papers

1. Loukas Lazos, Radha Poovendran, and Jim Ritcey, *On the Deployment of Heterogeneous Sensor Networks for Detection of Mobile Targets*, to appear in the International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), 2007.
2. M. Li, I. Koutsopoulos, and R. Poovendran, *Optimal Jamming Attacks and Network Defense Policies in Wireless Sensor Networks*, to appear in IEEE INFOCOM, 2007.
3. M. Li, R. Sampigethaya, L. Huang and R. Poovendran, "Swing & Swap: User-Centric Approaches towards Maximizing Location Privacy," to appear in ACM Workshop on Privacy in Electronic Society, November 2006.
4. P. Tague, R. Poovendran, "A General Probabilistic Model for Improving Key Assignment in Wireless Networks," in Proceedings of the WiOpt'06.
5. L. Lazos, R. Poovendran, "Coverage in Heterogeneous Sensor Networks," in Proceedings of the WiOpt'06.
6. P. Tague, J. Lee, R. Poovendran, "A Set-covering approach for modeling attacks on key predistribution in wireless sensor networks," in Proceedings of IEEE ICISIP 2005, Bangalore, India.
7. R. Sampigethaya, L. Huang, M. Li, R. Poovendran, K. Matsuura, and K. Sezaki, "CARAVAN: providing location privacy for VANET," to appear, *Proceedings of the workshop on Embedded Security in Cars (ESCAR)*, Cologne, Germany, November 2005.
8. S.-P. Chan, R. Poovendran, and M.-T. Sun, "A key management scheme in distributed sensor networks using attack probabilities," accepted, to appear, *Proceedings of the IEEE Global Telecommunications Conference (Globecom)*, St. Louis, MO, December 2005.
9. M. Li and R. Poovendran, "Enabling Distributed Addition of Secure Access to Patient's Records in A Tele-Referring Group," to appear in *Proceedings of the 27th IEEE EMBS Annual International Conference*, Shanghai, China, September 2005.
10. L. Lazos, S. Capkun, and R. Poovendran, "ROPE: robust positioning in wireless sensor networks," in *Proceedings of the 4th International Symposium on Information Processing in Sensor Networks*, pp. 324-331, Los Angeles, CA, April 2005.
11. I. Kang and R. Poovendran, "Iterated local optimization for minimum energy broadcast," *Proceedings of the 3rd International Symposium on Modeling and Optimization in Mobile, Ad-hoc and Wireless Networks*, pp. 332-341, Trentino, Italy, April 2005.
12. L. Lazos, R. Poovendran, C. Meadows, P. Syverson, and L. W. Chang, "Preventing wormhole attacks on wireless networks: a graph theoretic approach," *Proceedings of the IEEE Wireless Communications and Networking Conference*, Vol. 2, pp. 1193-1199, New Orleans, LA, March 2005.
13. I. Kang and R. Poovendran, "Scalable power-efficient broadcast over densely deployed ad hoc networks," *Proceedings of the IEEE Wireless Communications and Networking Conference*, Vol. 4, pp. 2063-2068, New Orleans, LA, March 2005.
14. M. Li, S. Narayanan, and R. Poovendran, "Privacy enhanced group communication in clinical environment," *Proceedings of SPIE Medical Imaging 2005: PACS and Imaging Informatics*, Vol. 5748, pp. 348-356, February 2005.
15. I. Kang and R. Poovendran, "Broadcast with heterogeneous node capability," *Proceedings of the 47th IEEE Global Telecommunications Conference*, Vol. 6, pp. 4114-4119, Dallas, TX, December 2004.
16. L. Lazos and R. Poovendran, "SeRLoc: secure range-independent localization for wireless sensor networks," *Proceedings of the ACM workshop on Wireless Security*, pp. 21-30, Philadelphia, PA, October 2004.
17. M. Li, S. Narayanan, and R. Poovendran, "Tracing medical images using multiband watermarks," *Proceedings of the 26th International Conference of the IEEE Engineering in Medicine and Biology Society*, Vol. 2, pp. 3233-3236, San Francisco, CA, September 2004.
18. L. Lazos, J. Salido, and R. Poovendran, "VP3: using vertex path and power proximity for energy efficient key distribution," (invited), *Proceedings of the IEEE 60th Vehicular Technology Conference*, Vol. 2, pp. 1228-1232, Los Angeles, CA, September 2004.
19. L. Lazos and R. Poovendran, "Cross-layer design for energy-efficient secure multicast communications in ad hoc networks," *Proceedings of the IEEE International Conference on Communications*, Vol. 6, pp. 3633- 3639, Paris, France, June 2004.
20. I. Kang and R. Poovendran, "Design issues on broadcast routing algorithms using realistic cost-effective smart antenna models," *Proceedings of the IEEE 59th Vehicular Technology Conference*, Vol. 4, pp. 2121-2125, Milan, Italy, May 2004.
21. I. Kang and R. Poovendran, "COBRA: center-oriented broadcast routing algorithms for wireless adhoc networks," *Proceedings of the IEEE Wireless Communications and Networking Conference*, Vol. 2, pp. 813-818, Atlanta, GA, March 2004.
22. I. Kang and R. Poovendran, "A comparison of power efficient broadcast routing algorithms," *Proceedings of the 46th IEEE Global Telecommunications Conference*, Vol. 1, pp. 387-392, San Francisco, CA, December 2003.
23. I. Kang and R. Poovendran, "A novel power-efficient broadcast routing algorithm exploiting broadcast efficiency," *Proceedings of the IEEE 58th Vehicular Technology Conference*, Vol. 5, pp. 2926-2930, Orlando, FL, October 2003.
24. M. Li and R. Poovendran, "Broadcast enforced threshold schemes with disenrollment," *Proceedings of the 10th workshop on Selected Areas in Cryptography*, Lecture Notes in Computer Science, Vol. 3006, pp. 101-116, Ottawa, Canada, August 2003.

25. I. Kang and R. Poovendran, "S-GPBE: a power-efficient broadcast routing algorithm using sectorized antenna," *Proceedings of the 3rd IASTED International Conference on Wireless and Optical Communications*, Alberta, Canada, July 2003.
26. I. Kang and R. Poovendran, "Maximizing static network lifetime of wireless broadcast adhoc networks," *Proceedings of the IEEE International Conference on Communications*, Vol. 3, pp. 2256-2261, Anchorage, Alaska, May 2003.
27. L. Lazos and R. Poovendran, "Energy-aware secure multicast communications in ad-hoc networking using geographic location information," *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing*, Vol. 4, pp. 201-204, Hong Kong, China, April 2003.
28. M. Li and R. Poovendran, "A note on threshold schemes with disenrollment," *Proceedings of the 37th Annual Conference on Information Sciences and Systems*, John Hopkins University, Baltimore, MD, March 2003.
29. L. Lazos and R. Poovendran, "Secure broadcast in energy-aware wireless sensor networks," (invited), *Proceedings of the IEEE International Symposium on Advances in Wireless Communications*, Victoria, BC, Canada, September 2002.
30. I. Kang and R. Poovendran, "On the lifetime extension and route stabilization of energy-efficient broadcast routing over MANET," *Proceedings of the International Network Conference*, University of Plymouth, UK, June 2002.
31. I. Kang and R. Poovendran, "On the lifetime extension of energy-efficient multihop broadcast networks," (invited), *Proceedings of the International Joint Conference on Neural Networks*, Vol. 1, pp. 365-370, Honolulu, Hawaii, May 2002.
32. W. Trappe, J. Song, R. Poovendran, and K. J. R. Liu, "Key distribution for secure multimedia multicasts via data embedding," *Proceedings of the IEEE International Conference on Acoustics Speech and Signal Processing*, Vol. 3, pp. 1449-1452, Salt Lake City, UT, May 2001.
33. M. Li, R. Poovendran, and C. Berenstein, "Optimization of key storage for secure multicast," *Proceedings of the 35th Annual Conference on Information Sciences and Systems*, pp. 771-774, John Hopkins University, Baltimore, MD, March 2001.
34. J. Song, R. Poovendran, W. Trappe, and K. J. R. Liu, "Dynamic key distribution using embedded source coding for secure multimedia multicast," *Proceedings of SPIE Security and Watermarking of Multimedia Contents III*, Vol. 4314, pp. 618-628, San Diego, CA, January 2001.
35. R. Poovendran, P. Keleher, and J. S. Baras, "A decision-process analysis of implicit coscheduling," *Proceedings of the 14th International Parallel & Distributed Processing Symposium*, pp. 115-120, Cancun, Mexico, May 2000.
36. R. Poovendran and J. S. Baras, "Analysis and design of robust key schemes for multicast communications," *Proceedings of the 4th Annual Conference on Advanced Telecommunications and Information Distribution Research Program*, College Park, MD, March 2000.
37. R. Poovendran and J. S. Baras, "An information theoretic approach for design and analysis of rooted-tree based multicast key management schemes," *CRYPTO '99: Proceedings of the 19th Annual International Cryptology Conference on Advances in Cryptology*, Lecture Notes in Computer Science, Vol. 1666, pp. 624-638, Santa Barbara, CA, August 1999.
38. R. Poovendran, S. Corson, J. S. Baras, "A private scheme for distributed shared key generation," (invited), *Proceedings of the IEEE Information Theory and Communications Workshop*, pp. 8, Kruger National Park, South Africa, June 1999.
39. R. Poovendran and J. S. Baras, "Optimal scalable security architectures in the presence of colluding mobile traitors," *Proceedings of the IEEE Emerging Technologies Symposium on Wireless Communications Systems*, pp. 18.1-18.5, Richardson, TX, April 1999.
40. R. Poovendran, S. Corson, and J. S. Baras, "Dynamic Elgamal group key generation with tight binding," *Proceedings of the 3rd Annual Conference on Advanced Telecommunications and Information Distribution Research Program*, College Park, MD, February 1999.
41. R. Poovendran, S. Corson, and J. S. Baras, "A distributed shared key generation procedure using fractional keys," *Proceedings of the IEEE Military Communications Conference*, Vol. 3, pp. 1038-1043, Boston, MA, October 1998.
42. R. Poovendran, S. Ahmed, S. Corson, and J. S. Baras, "A scalable extension to the group key management protocol," *Proceedings of the 2nd Annual Conference on Advanced Telecommunications and Information Distribution Research Program*, pp. 187-191, College Park, MD, February 1998.
43. R. Poovendran, S. Srinivasan, S. Speigle, and R. Chellappa "Qualitative landmark recognition using visual cues," *Proceedings of SPIE Navigation and Control Technologies for Unmanned Systems II*, Vol. 3087, pp. 74-83, Orlando, FL, April 1997.
44. S. Raghavan, R. Crompt, S. Srinivasan, R. Poovendran, W. Campbell, and L. Kanal, "Extracting an image similarity index using meta data content for image mining applications," *Proceedings of the SPIE-25th AIPR Workshop: Emerging Applications of Computer Vision*, Vol. 2962, pp. 78-91, Washington, D.C., October 1996.
45. R. Poovendran, "Evaluation of ATR algorithms for SAR search and rescue," *Proceedings of the NASA SAR Workshop*, 1996.
46. R. Poovendran and S. Srinivasan, "Data mapping on high performance parallel architecture for 2-D wavelet transforms," *Proceedings of the IEEE International Conference on High Performance Computing*, Delhi, India, December 1995.
47. R. Poovendran, J. E. Dorband, and J. M. Hollis, "FOC image restoration using calculated PSFs on parallel architectures," *Proceedings of the 2nd Workshop on the Restoration of Images and Spectra*, pp. 173-180, Space Telescope Science Institute, Baltimore, MD, November 1993.
48. R. Poovendran and J. E. Dorband, "An algorithm for a class of direct and inverse scattering problems," *Proceedings of the Fourth Symposium on the Frontiers of Massively Parallel Computation*, pp. 237-243, McLean, VA, October 1992.
49. R. Poovendran and S. S. Rao, "A new Toeplitz algorithm for a class of positive definite matrices," *Proceedings of the Second SIAM Conference on Linear Algebra in Signals, Systems and Control*, San Francisco, CA, November 1990.

50. R. Poovendran and M. R. Bhatt, "Fast slice discrete Hartley transform algorithm," *Proceedings of the IEEE International Conference on Communication Systems*, Singapore, November 1988.
51. R. Poovendran and M. R. Bhatt, "Fast prime length discrete cosine transform algorithms," *Proceedings of the International Conference on Data Communication Technology*, Ireland, September 1988.
52. S. D. Agashe and R. Poovendran, "A true linear prediction of speech," *Proceedings of the International Conference on Data Communications Technology*, Ireland, September 1988.

Invited Talks

1. 2006: Securing Location Estimation in Wireless Sensor Networks, Intel Corporation, August 2nd 2006.
2. 2006: IEEE IST, Mykonos, June 5th 2006.
3. 2006: A Canonical framework for Assignment Processes, ARO workshop on security of sensor networks, Carnegie Mellon University, May 8th -- 9th 2006.
4. 2005: Information Assurance for wireless sensor networks and challenges, University of Tokyo, as part of the US-Japan joint workshop on sensors, robotics and mechatronics, Nov 11th.
5. 2005: Information Assurance for Manets and sensor networks and challenges, invited talk, ACM SASN, November 7th, DC.
6. 2005: Secure Range-Independent Localization in Wireless Sensor Networks, invited talk, Netted Sensors meeting, MITRE, Oct. 25th.
7. 2005: A graph theoretic framework for modeling wormhole attacks, CS Colloquium, University of Texas, San Antonio, Oct. 18th.
8. 2005: Information Assurance for Manets and sensor networks and challenges, Key Note, Pervasive trust workshop, IEEE Secure comm., Greece, September 6th.
9. 2005: Secure Range-Independent Localization for Wireless Sensor Networks, CACR seminar, Waterloo, July 26 2005.
10. 2005: Secure Range-Independent Localization for Wireless Sensor Networks, UC Irvine, May 8.
11. 2005: Challenges in Securing Future Wireless and Sensor Networks: A Case for joint consideration of physical models, robust estimation and Crypto, invited speaker at the ONR Communication Gathering, May 3.
12. 2005: Security of Wireless Sensor Environments, SENIT Training Workshop, (ENST), University of Paris, April 28.
13. 2005: Secure Range-Independent Localization for Wireless Sensor Networks, UIUC, Champagne, April 20.
14. 2005: Secure Range-Independent Localization for Wireless Sensor Networks, Washington University, St. Louis, April 21.
15. 2005: Secure Range-Independent Localization for Wireless Sensor Networks, Protocol Exchange Meeting of the National Security Agency, at Naval Postgraduate School, Feb 1-2, 2005.
16. 2004: SeRLoc: Secure Range-Independent Localization for Wireless Sensor Networks, Invited Colloquium Talk, November 22, Northeastern University, Boston, MA.
17. 2004: SeRLoc: Secure Range-Independent Localization for Wireless Sensor Networks, Invited Colloquium Talk, October 22, UCLA.
18. 2004: Research Challenges in Security and Privacy, invited Research Agenda Setting Talk, NSF Network of Sensor Systems (NOSS), October 19, Colorado Mines.
19. 2004: Towards Secure Localization in Wireless Sensor Networks, Ecole Nationale Supérieure des Telecommunications, (ENST), Paris, France.
20. 2004: On the Interplay between Routing and Security in Energy-Efficient Networks, Math Department, Carlos Berenstein 60th Birthday Conference, George Mason University, May 19, 2004.
21. 2004: Secure-Mobility forum of the Joint Wireless Working Group, Organized by NSA, March 25, San Jose, California
22. 2003: Naval Research Laboratory, High Assurance Group, September 3, 2003.
23. 2002: IEEE International Symposium on Advances in Wireless Communications, September 2002, Vancouver, Canada
24. 2002: Control and Dynamical Systems Colloquium, Department of Mechanical Engineering, University of Washington
25. 2000: Key Management for Secure Multicast Communications, University of Texas Austin.
26. 2000: Key Management for Secure Multicast Communications, Ohio State University.
27. 2000: Key Management for Secure Multicast Communications, University of Washington.
28. 1999: Key Management for Secure Multicast Communications, Boeing Corporation Headquarters, LA.
29. 1999: Key Management for Secure Multicast Communications, IEEE Information Theory and Networking Workshop, Special Session on Networks, Metsovo, Greece.
30. 1999: Key Management for Secure Multicast Communications, U.S. Army Research Laboratory, Adelphi, Maryland.

Professional Service Information

1. Program committee ESAS 2007
2. Program committee, Networking 2007
3. Chinacom, TCP Co-Chair 2007
4. Securecomm, 2007
5. Editorial Board, Journal on vehicular Technology, Hindwai Publications. 2006-2008.
6. Technical Program Co-chair, ACM Wireless Security (WiSe) 2008.
7. Publicity Chair, ACM CCS 2007.
8. Program committee Member IEEE Infocom 2007.

9. Program committee member, ACM Mobicom 2006.
10. Program committee member of IEEE Pervasive Security (Persec) 2006.
11. Program committee member of ICICS 2006
12. Member of the editorial review board, Communications of the ACM Special Issue on Security, 2006.
13. Advisory board member, *Research Directions for Security and Networking in Critical Real-Time and Embedded System* 2006.
14. Technical Program Co-Chair, ACM Wireless Security, (WiSe), **2006**, September Los Angeles, USA.
15. Technical Program committee of 2nd IEEE International Workshop on Trust, Security and Privacy in Ubiquitous Computing (TSPUC2006), June 2006, NY.
16. Local Chair of IEEE International Symposium on Information Theory 2006, Seattle, Washington.
17. Guest Editor of *IEEE Journal of Selected Areas in Communications*, Special issue on “Wireless Security,” 2006.
18. Program Committee Member, International Symposium on Information Processing in Sensor Networks (IPSN), 2006.
19. Program committee member IEEE International Conference on Communications (ICC) 2006
20. Delegate to the US-Japan joint workshop on sensors, robotics and mechatronics, University of Tokyo, Nov 11-12-13, 2005.
21. Technical Program Co-Chair, ACM Wireless Security (WiSe), **2005**, September 2, Cologne, Germany.
22. Program Committee Member, ACM Workshop on Security of Ad Hoc and Sensor Networks (SASN), 2005.
23. Co-Organizer of ARO workshop on Localization, University of Washington, Seattle, June 2005.
24. Organizer of Special Session on Wireless Security, IEEE WCNC, 2005.
25. Program Committee Member, IEEE SECURECOMM, 2005.
26. Program Committee Member, ACM MobiHoc, 2005.
27. Publications Chair, IEEE Network Security Conference, 2005.
28. Program Committee Member, 2005 International Symposium on Information Processing in Sensor Networks (IPSN).
29. International Advisory Committee, Journal of Advanced Electronic Communications: Research & Education, 2004—.
30. Panel Co-chair, Sensor Security, ACM Sensor and Ad Hoc Network Security (SASN), October 25, 2004 Washington DC.
31. Technical Point of Contact ARO workshop on Information Assurance in Mobile Wireless Networks, March 3-4, 2004.
32. Program Committee Member, ACM Workshop on Wireless Security (WiSe) 2003, 2004.
33. Program Committee Member, ACM Workshop on Security of Ad Hoc and Sensor Networks (SASN) 2003, 2004.
34. Program Committee Member, Networks and Distributed Systems Security (NDSS) 2003 and 2002.
35. Program Committee Member, Information Security Conference ISC 2002.
36. Session Chair of CISS 2001, JHU, March 2001.
37. Program Committee Member, *INDOCRYPT* 2000.
38. Reviewer for NSF, ARO, IEEE Infocom, IEEE (S&P), Academic Press, JASA, IEEE TMC, IEEE JSAC etc.

Departmental Service

39. Member of the Strategic planning committee of the EE department, 2006.
40. Member of the Executive Committee of the Dept. 2006-2007
41. Member of the Departmental Research Committee, 2004-2005
42. Undergraduate Admission Committee, 2005
43. Advisor to the Graduate Student Association of the EE department, 2003
44. Member of the Faculty Search Committee, 2002
45. Chair of the Graduate Recruiting Committee 2001-2002, Member 2000-2001, University of Washington, 2001-2002
46. Member of the Undergraduate Curriculum Revision Committee, University of Washington, 2000-2001

Graduated PhD. Students:

- 2004: Dr. Intae Kang, “Topology Control for Broadcasting over Energy Constrained Wireless Ad Hoc Networks.”
- 2006: Dr. Mingyan Li, “Providing Confidentiality and Privacy in Group Communications.”
- 2006: Dr. Loukas Lazos, “Securing Network Services for Wireless Ad Hoc and Sensor Networks.”

Post Doctoral Supervision:

- April 2005—December 2005: Dr. Tianwei Chen, PhD. EE, Berlin University December 2004.
- September 2006—Current: Dr. Ying Lin, PhD. EE, Syracuse University, Dec 2006.

Current PhD. Students

1. R. Sampigethaya, expected graduation date: Summer 2007
2. Patrick Tague, expected graduation date: 2008
3. Basel, Aloimar, expected graduation date: 2009
4. Nandini Bhatt, expected graduation date: 2010
5. Dingding Liu, expected graduation date: 2010
6. Jun Song, expected graduation date: 2010

Former MS Students: Javier Salido, MS Spring 2005, Loukas Lazos Winter 2003, R. Sampigethaya Spring 2002.

Former Undergraduate Students: Samuel Ting, Paul Liu, Shalaka Buskute, and Lisa Hansen

Society Memberships: Member ASEE, Associate Life Member of SIGMA XI, Senior Member IEEE