

A. Bruce McDonald, Ph.D.

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Formal Education

Ph.D.	2000	University of Pittsburgh <i>Pittsburgh, PA</i> Telecommunications
MS	1994	University of Pittsburgh <i>Pittsburgh, PA</i> Telecommunications
BS	1986	Northwestern University <i>Evanston, IL</i> Electrical Engineering

Relevant Professional Experience and Honors

2004-Present	<ul style="list-style-type: none">Assistant Professor of Electrical and Computer Engineering <i>Northeastern University, College of Engineering, Boston, MA</i>
2004-2009	<ul style="list-style-type: none">Awarded National Science Foundation (NSF) CAREER Grant
2001-2004	<ul style="list-style-type: none">Zraket Assistant Professor of Electrical and Computer Engineering <i>Northeastern University, College of Engineering, Boston, MA</i>
1996-2000	<ul style="list-style-type: none">Sr. Computer Network Engineer, Center for Clinical Neurophysiology <i>Children's Hospital of Pittsburgh, Pittsburgh, PA</i>
1996-2000	<ul style="list-style-type: none">Research Assistant, Bell Communications Research <i>University of Pittsburgh, School of Information Sciences, Pittsburgh, PA</i>Adjunct Professor, Graduate Program in Telecommunications <i>University of Pittsburgh, School of Information Sciences, Pittsburgh, PA</i>Research Assistant, Dept. of Computer Science <i>University of Pittsburgh, College of Arts and Science, Pittsburgh, PA</i>
1994	<ul style="list-style-type: none">Honored with Fritz Froelich Award: for outstanding contributions to the graduate program in <i>Telecommunications, University of Pittsburgh.</i>
1992-1996	<ul style="list-style-type: none">Network Engineer Intern, Center for Computer Technology <i>Duquesne University, Pittsburgh, PA</i>Teaching Assistant, Graduate Program in Telecommunications <i>University of Pittsburgh, School of Information Sciences, Pittsburgh, PA</i>Research Assistant, Dept. of Computer Science <i>University of Pittsburgh, School College of Arts and Science, Pittsburgh, PA</i>Visiting Researcher, Applied Networks Research Group <i>Bell Communications Research, Redbank, NJ</i>
1989-1992	<ul style="list-style-type: none">Network Administrator, Management Information Systems <i>City of Newton, Newton, MA</i>
1988-1989	<ul style="list-style-type: none">Applications Engineer, TDM, X.25, Voice Compression <i>Timplex, Shelton, CT</i>
1987-1988	<ul style="list-style-type: none">Systems Engineer, Asynch Data PBX, Multiplexors, Ethernet, TCP/IP <i>Micom Systems, Newton, MA</i>

Current, Past and Pending Sponsored Research [Total Support \$485,000]

- McDonald, A.B. (PI), **Bridgeport Networks—Wireless Systems Quality Assurance Group; Project Title:** *Empirical Performance Analysis of SIP/WiFi Handset to Voice Server Connection*. Amount: \$13,092; Status: Contract declined due to lack of supporting funds.
Project Description: The objective of the sponsor of this project is to provide equivalent voice and data services using SIP/WiFi handsets connected to a voice server through a wireless access point and the Internet as is now achievable within GSM and GPRS cellular systems. The objective is to consider multiple device types and network configuration scenarios to build a toolkit for analyzing network behavior and its impact at the application level through voice quality evaluation mechanisms.
- McDonald, A.B. (PI), **National Science Foundation CAREER Grant FY 2004 Competition (NSF Award ID: 0347698. Project Title:** *"CAREER: Cross-Layer Optimization for Robust Admission Control in Wireless Ad Hoc Networks: A Theoretical Framework"*. Effective June 1, 2004 through May 31, 2009. Amount: \$423,000; Status: Second year completed.
Project Description: Focusing largely on establishing a robust theoretical foundation, this research seeks to provide an analytical framework for establishing and maintaining statistically bounded quality-of-service guaranteed in re-configurable, multiple hop wireless networks. The basic tenet is rooted in the concept of cross-layer interaction; through characterization of these dynamic processes it is hypothesized that statistical service guarantees will become feasible. During the first two years of the project results have already challenged embedded beliefs regarding capacity bounds, which are necessary to support required levels of service to applications and to enable practical admission control and scheduling services. Moreover, investigation of admission control scenarios for wireless LANs lead to promising queuing theoretic results, which have evaded researchers until now.
- McDonald, A.B. (PI), **BBN Technologies Internetworking Research Dept.; Project Title:** *"XG Wireless Architecture and Performance Evaluation"*. Amount: \$24,206; FY 2004; Status: Accepted as Extension to Previous Contract and Complete.
Project Description: See initial project description below.
- McDonald, A.B. (PI), **BBN Technologies Internetworking Research Dept.; Project Title:** *"Asynchronous Reservation-Oriented Multiple Access Control (AROMA)"*. Amount: \$12,123; FY 2003; Status: Accepted as Contract and Completed.
Project Description: The objective of AROMA is to support real-time applications within the context of an asynchronous wireless MAC protocol and to interoperate with existing standard wireless LANs. The fundamental tenet is that robust service requires admission control and scheduling to protect admitted sessions. The focus of the project is the design and implementation of a flexible protocol simulation and performance analysis of AROMA.
- McDonald, A.B. (PI), **BBN Technologies Internetworking Research Dept.; Project Title:** *"XG Wireless Architecture and Performance Evaluation"*. Amount: \$12,123; FY 2003; Status: Accepted as Contract and Completed.
Project Description: One of the objectives of the XG Protocol is to utilize Dynamic Spectrum Access (DSA) to increase the available capacity of multiple hop wireless networks, thus enabling the support of applications requiring greater resources than available in legacy systems. The basic tenet is that licensed spectrum is substantially underutilized in practice. Nodes that are able to detect spectrum "holes" and coordinate this knowledge with peers are able to provide more consistent service levels. The focus of the project is the design and implementation of a flexible protocol simulation and performance analysis of an XG network in the presence of legacy systems

Articles Published in Scholarly Journals

- Ozdemir, M. and McDonald, A.B., “*On the Performance of Ad Hoc Wireless LANs: A Practical Queueing Theoretic Model*,” **Performance Evaluation: An International Journal**, Special Issue on Performance Modeling and Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks. Vol. 63, No. 11, November 2006, pp. 1127-1156. [Premium]
- Gopalan, A., Dawived, S., Znati, T.F. and McDonald, A.B., “*On the Implementation and Performance of the (α, t) -Protocol on Linux*,” **Simulation: Transactions of the Society for Computer Simulation and Modeling International**, Special Issue on Modeling and Simulation of Wireless and Sensor Network Technologies and Applications. June 2005, Vol. 81, pp 413-424.
- McDonald, A.B., and Znati, T.F., “*Statistical Estimation of Link Availability and Its Impact on Routing in Wireless Ad Hoc Networks*,” **Wiley Journal of Wireless Communications and Mobile Computing (WMC)**, Vol. 4, No. 4, 2004, pp. 331-349.
- Goldstein, B., McNames, J., McDonald, A.B., Ellenby, M.S., Lai, S., Sun, Z., Krieger, D. and Sclabassi, R.J. “*A Physiological Data Acquisition System and Database for the Study of Disease Dynamics in the Intensive Care Unit*,” **Critical Care Medicine: The Journal of the Society of Critical Care Medicine**, Vol. 31, No. 2, 2003, pp. 433-441. [Premium] [5 Citations]
- McDonald, A.B., and Znati, T.F., “*Design and Performance of a Distributed Dynamic Clustering Algorithm for Multimode Routing in Wireless Ad Hoc Networks*,” **Simulation: Transactions of the Society for Computer Simulation and Modeling International**, Special Issue on Simulation and Modeling of Computer Systems and Networks, Vol. 78, No. 7, July 2002, pp. 408-422.
- Ellenby, M.S., McNames, J., Lai, S., McDonald, A.B., Krieger, D., Sclabassi, R.J. and Goldstein B., “*Uncoupling and Recoupling of Autonomic Regulation of the Heart Beat in Pediatric Septic Shock*,” **SHOCK: Journal of the Shock Society**, Vol. 16, No. 4, October 2002, pp 274-277.
- Ellenby, M.S., McNames, J., Lai, S., McDonald, A.B., Krieger, D., Sclabassi, R.J. and Goldstein, B. “*Dynamic Assessment of Intracranial Hypertention*,” **Journal of Investigative Medicine**, Traumatic Brain Issue, 2001, Vol. 49 (80A).
- McDonald, A.B. and Znati, T., “*A Mobility-Based Framework for Adaptive Clustering in Wireless Ad Hoc Networks*,” **IEEE Journal on Selected Areas in Communication (J-Sac)**, Special Issue on Wireless Ad Hoc Networks, Vol. 17, No. 8, August 1999, pp. 1466-1487. [Premium–Ranked No. 2 in Networking and No. 13 in all EE] [74 Citations]
- McDonald, A.B. and Znati, T., “*ARP Versus ES-IS: Performance Evaluation of Neighbor-Greeting Protocols*,” **The Computer Journal**, Vol. 39, No. 10, November 1996, pp. 856-867.

Articles Published in Referred Conference Proceedings

- Ugarte, D. and McDonald, A.B., “*A Non-Cooperative Game Theoretic Framework for Dynamic Spectrum Allocation*,” Submitted for peer review to **The 2nd IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN)**.
- Ozdemir, M., Gu D., McDonald, A.B. and Zhang, J., “*Enhancing MAC Performance with a Reverse Direction Protocol for High-Capacity Wireless LANs*.” To Appear in **Proceeding of 2006 IEEE Vehicular Technology Conference (VTC)**.
- Ugarte, D. and McDonald, A.B., “*On the Capacity of Dynamic Spectrum Access Enable Wireless Networks*,” Proceedings of **The 1st IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN’05)**, Baltimore Harbor, MD, November 8-11, 2005, pp 630-633.
- Fang, Y., Gu, D., McDonald, A.B. and Zhang, J., “*On the Performance Enhancement of Wireless LANs — a Multipolling Mechanism with Hidden Terminal Solution*,” Proceedings of **IEEE Global Telecommunications Conference (GLOBECOM’05)**. St. Louis, MO., November 28 - December 2. 2005, Vol. 1, pp 571-575. [Acceptance ratio $\approx 35\%$]
- Ugarte, D. and McDonald, A.B., “*On the Network Capacity of Multi-Hop Wireless Networks Using Dynamic Spectrum Allocation*,” Proceedings of the **Seventh IEEE International Conference on Mobile and Wireless Communications Networks (MWCN’05)**. Marrakeck, Morocco, Septemeber 19-20, 2005, Proceedings CD ISBN 0-955 1814-0-2, C2000513

- Ozdemir, M. and McDonald, A.B., “A Queuing Model for Multihop Ad Hoc Networks,” Proceedings of the **Seventh IEEE International Conference on Mobile and Wireless Communications Networks (MWCN’05)**. Marrakeck, Morocco, September 19-20, 2005, Proceedings CD ISBN 0-955 1814-0-2, B220057
- Fang, Y., Gu D., McDonald, A.B. and Zhang, J., “A Two-level Carrier Sensing Mechanism for the Overlapping BSS Problem in Wireless LANs,” Proceedings of **14th IEEE Workshop of Local and Metropolitan Area Networks (LANMAN’05)**. Chania, Crete, Greece, September 18-21, 2005, Vol. 1, pp 1-6.
- Ozdemir, M. and McDonald, A.B., “A Queuing Theoretic Model for Wireless Ad Hoc LANs,” Proceedings of the **IEEE/ACM International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob’05)**, Montreal, Canada, August 22-24, 2005, Vol. 3, pp 131-137.
- Ozdemir, M. and McDonald, A.B. and Ramanathan, R. “Asynchronous Reservation-Oriented Multiple Access for Wireless Networks (AROMA),” Proceedings of the **IEEE International Conference on Wireless Networks, Communications, and Mobile Computing (WIRELESSCOMM’05)**, International Symposium of Wireless Quality-of-Service (WiQoS’05), Maui, Hawaii, June 13-16, 2005, Vol. 1, pp 398-403. [Acceptance ratio $\approx 20\%$]
- Fang, Yue and McDonald, A.B., “Theoretical Network Capacity of Multi-hop Wireless Ad Hoc Networks,” Proceedings of the **Sixth IEEE International Conference on Mobile and Wireless Communications Networks (MWCN’04)**, Paris, France, October 25-27, 2004, pp. 311-322.
- Fotopoulou-Prigipia, S. and McDonald, A.B., “Geograms versus Geocircuits: Geographic Virtual Circuit Routing Protocol for Ad Hoc Networks (GCRP),” Proceedings of the **First Annual IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS’04)**, Fort Lauderdale, FL, October 25-27, 2004, Vol. 1, pp 416-425.
- Ozdemir, M. and McDonald, A.B., “An M/MMGI/1/K Queuing Model for IEEE 802.11 Ad Hoc Networks,” Proceedings of the **ACM Workshop on Performance Evaluation of Wireless Ad Hoc, Sensor and Ubiquitous Networks (PE-WASUN 2004)**, in conjunction with the **Seventh ACM/IEEE International Symposium on Modeling, Analysis and Simulation of Mobile Systems (MSWiM’04)**, Venice, Italy, October 7, 2004, pp. 107-111. [Acceptance ratio $\approx 17\%$]
- Fang, Yue and McDonald, A.B., “Dynamic Codeword Routing (DCR): A Cross-Layer Approach for Performance Enhancement of General Ad Hoc Routing,” Proceedings of the **First IEEE International Conference of Sensor and Ad Hoc Communications Networks (SECON’04)**, Santa Clara, CA, October 4-7, 2004, pp. 255-263. [Acceptance ratio $\approx 18\%$]
- Ozdemir, M. and McDonald, A.B., “A Queuing Theoretic Model for IEEE 802.11 DCF,” Proceedings of the **13th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN’04)**, San Francisco, CA, April 25-28, 2004, pp. 33-38
- Fang, Yue and McDonald, A.B., “Theoretical Channel Capacity in Multi-hop Ad Hoc Networks,” Proceedings of the **13th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN’04)**, San Francisco, CA, April 25-28, 2004, pp. 181-186.
- Fang, Yue and McDonald, A.B., “Performance Analysis of Multi-hop Wireless Ad Hoc Networks using IEEE 802.11 DCF,” Proceedings of the **23rd IEEE International Performance, Computing, and Communications Conference, Workshop on Multihop Wireless Networks (MWN’04)** Phoenix, AZ, April 15-17, 2004, pp. 321-322.
- Gopalan, A., Znati, T., Dwivedi, S. and McDonald, A.B., “On the Implementation and Performance of the (α, t) Protocol in Linux,” Proceedings of the **37th Annual SCS/IEEE/ACM Simulation Symposium (ANSS’04)**, Arlington, VA, April 18-22, 2004, 27-35.
- Fotopoulou-Prigipia, S. and McDonald, A.B., “A Novel Paradigm for Geographic Routing in Ad Hoc Networks: Comparison of Geograms and Geocircuits,” Proceedings of the **SCS/IEEE Communications Networks and Distributed Systems Modeling and Simulation Conference (CNDS’04)**, San Diego, CA, January 19-22, 2004.
- Santivanez, C. and McDonald, A.B., “Progressive Scaling: A Methodology for Efficient Validation and Parameter Tuning of Large Ad Hoc Network Simulations,” Proceeding of the **SCS/IEEE Communications Networks and Distributed Systems Modeling and Simulation Conference (CNDS’03)**, Orlando FL, January 19-23, 2003, pp. 31-36.

- Santivanez, C., McDonald, A.B., Stavrakakis, I. and Ramanathan, R., “*On the Scalability of Ad Routing Protocols*,” Proceedings of the **21st Annual Combined Conference of The IEEE Computer and Communications Societies (INFOCOM’02)**, New York, June 23-27 2002, IEEE Proceedings Vol. 3, pp. 1688-1697. [Acceptance ratio \approx 20%] [9 Citations]
- Fang, Y. and McDonald, A.B., “*Cross-layer Performance Effects of Path-Coupling in Wireless Ad Hoc Networks: Implications for Throughput, Power and Scalability*,” Proceedings of the **21st Annual IEEE International Performance, Computing and Communications Conference (IPCCC’02)**, Phoenix AZ, April 3-5 2002, pp. 281-290. [Acceptance ratio \approx 30%] [2 Citations]
- Goldstein B., Ellenby M., Lai S., McNames J., McDonald A.B., Krieger D., Sclabassi R.J. and Buchman T.G. *Characterization of Variability in Physiologic Time Signals During Hypotension in Pediatric Sepsis*,” Proceedings of the **Annual Symposium fo the Society for Critical Care Medicine (SCCM’01)**, 2001, Vol. 28:A46.
- McDonald, A.B. and Znati, T., “*Design and Performance of a Distributed Dynamic Clustering Algorithm for Ad Hoc Networks*,” Proceedings of the **34th Annual IEEE/ACM Simulation Symposium (AISS’01)**, Seattle WA, April 2001, pp 27-35.
- Rao, S., McDonald, A.B. and Znati, T., “*Design and Analysis of Hierarchical Group-Based Mobility for Ad-Hoc Networks*,” Proceeding of the **SCS/IEEE Communications Networks and Distributed Systems Modeling and Simulation Conference (CNDS’01)**, Phoenix AZ, January 2001.
- McDonald, A.B. and Znati, T., “*A Dual-Hybrid Adaptive Routing Strategy for Wireless Ad-Hoc Networks*,” Proceedings of the **IEEE Wireless Communications and Networking Conference (WCNC’00)**, Chicago, IL, September 2000, pp 1125-1130. [2 Citations]
- McDonald, A.B. and Znati, T., “*Predicting Node Proximity in Ad-Hoc Networks: A Least Overhead Adaptive Model for Selecting Stable Routes*,” Proceedings of the **First Annual ACM Workshop for Mobile Ad Hoc Networking and Computing (MobiHOC’00)**, Boston, MA, August 2000, pp 29-33. [Acceptance ratio \approx 15%] [2 Citations]
- McDonald, A.B., Krieger, D., Sclabassi, R.J. and Goldstein, B., *A Real-Time, Continuous Physiological Data Aquisition System for the Study of Dynamical Disease in the Intensive Care Unit*,” Proceedings of the **Annual Symposium for the Society of Critical Care Medicine (SCCM’00)**, Orlando, FL, February 2000, Vol. 27:A88.
- McDonald, A.B. and Znati, T., “*A Path Availability Model for Wireless Ad-Hoc Networks*,” Proceedings the **SCS/IEEE Wireless Communications and Networking Conference (WCNC’99)**, New Orleans, LA, September 1999, pp. 35-40. [17 Citations]
- Meempat, G. and McDonald, A.B., “*Mobile Teleconferencing: Design and Performance of Architectures for Inter-Switch Handoff Management and Session Multicasting*,” **Proceedings of The IEEE International Conference on Universal Personal Communications (ICUPC now WCNC’98)**, Florence IT, October 1998, Vol. 2, pp 1351-1357.
- McDonald, A.B. and Znati., T., “*ARP Versus ES-IS: Performance Comparison of Neighbor-Greeting Protocols*,” Proceedings of the **29th Annual IEEE/ACM Simulation Symposium (AISS’96)**, New Orleans LA, April 1996, pp. 71-80.

Note on Citations: Citation figures when noted were retrieved from citeseer.com; they reflect only those papers indexed at citeseer.com and citations from other papers also indexed at citeseer.com. Given the large number of papers from high quality, highly competitive conferences, and leading journals that are not in the index it seems reasonable to conclude a count of [111 Total Citations] is a very conservative lower bound for assessing the significance of the impact of my early work.

Miscellaneous Papers, Abstracts, Invited Talks

- McDonald, A.B., *Mobility and Wireless Communications: New Paradigms in Dynamic Wireless Network Design*, **IEEE Student Chapter Speaker series**, Northeastern University, Boston MA, January 2001.
- McDonald, A.B., *A Mobility-Based Framework for Adaptive Clustering in Wireless Ad Hoc Networks*, **Ph.D. Dissertation University of Pittsburgh**. Defended December, 2000.
- Goldstein, B., Lai, S., Bratton, S., Ellenby, M., McDonald, A.B., Krieger, D. and Sclabassi, R.J., "Correlation of Dynamic Assessment of Organ System Coupling with Tissue Perfusion in Pediatric Sepsis," **American Academy of Pediatrics**, 2000 Fall Meeting.
- McDonald, A.B., "Survey of Adaptive Shortest-Path Routing in Dynamic Packet-Switched Networks," **Technical Report (29 pages)** 1997.
- Meempat, G. and McDonald, A.B., "Teleconferencing on the Battlefield: Design and Analysis of Architectures and Algorithms for Mobility Management and Conference Bridging," **Bellcore Technical Document**. January 1997, *Internal Technical Document and Presentation: A.B. McDonald*.
- Meempat, G. and McDonald, A.B., "Simulation Study of Handoff Rerouting Strategies to Support Mobility of Wireless Users in ATM Backbone Networks," **The 6th annual IEEE Workshop on Computer Aided Modeling in Conjunction with IEEE Milcom**, Maclean VA, October 1996, Invited Talk. *Speaker: A.B. McDonald*
- Meempat, G. and McDonald, A.B., "Network Design and Evolution for Integrating Wireless Mobility into Broadband Network Infrastructure," **Bellcore Technical Document**. September 1996, *Tech Document and Presentation: A.B. McDonald*.
- McDonald, A.B., *ARP Versus ES-IS: A Comparative Performance Analysis of Neighbor Greeting Protocols*, **MS Thesis University of Pittsburgh**. Defended December, 1994.

Journal, Conference Proceedings and Books Edited

- *Proceedings of The Communication Networks and Distributed Systems Modeling and Simulation Conference*. **Published by the Society for Modeling and Simulation International (SCS)**, San Diego CA, 2003, ISBN: 1-56555-261-X.
- *Proceedings of The Communication Networks and Distributed Systems Modeling and Simulation Conference*. **Published by the Society for Modeling and Simulation International (SCS)**, San Diego CA, 2002, ISBN: 1-56555-244-X.

Industry and Academic Collaborations

- **Aalborg University**, Aalborg, Netherlands.
- **Bridgeport Networks**, Cambridge, MA.
- **Mitsubishi Electrical Research Laboratory (MERL)**, Cambridge, MA.
- **Scientific Systems Corporation Inc. (SSCI)**, Woburn, MA.
- **OPNET Technologies**, Washington, D.C.
- **Oregon State Health University**, Pediatric Critical Care, Portland, OR
- **BBN Technologies**, Cambridge, MA
- **University of Pittsburgh**, Center for Clinical Neurophysiology, Pittsburgh, PA
- **University of Pittsburgh**, Department of Computer Science, Pittsburgh, PA

Doctoral Student Advisees: Completed Degrees [3]

- **Mustafa Ozdemir, Ph.D. 2006:** in Electrical Engineering (CDSP) Successful Defense June 2006. Dissertation Title: *Analysis of Reconfigurable Wireless Networks: An Ergodic Queuing Model with Enhancements for QoS Enabled MAC*
- **Yue Fang, Ph.D. 2005:** in Electrical Engineering (CDSP) Successful Defense December 2005. Dissertation Title: *The Deferral Set Framework: A Novel Methodology for the Performance Analysis of Multi-hop Wireless Networks*
- **Cesar Santivanez, Ph.D. 2002:** in Electrical Engineering (CDSP) Successful Defense May 2002. Dissertation Title: *A Framework for Multimode Routing in Ad Hoc Networks: Theoretical and Practical Analysis*

Master's Thesis Advisees: Completed Degrees [5]

- **Daniel Ugarte, M.S. 2005** in Electrical Engineering (CDSP). Successful Defense December 2005. Thesis Title: *Capacity Analysis and Performance Evaluation of Dynamic Spectrum Access Networks*
- **Aibin Guo, M.S. 2003** in Electrical Engineering (CDSP). Successful Defense August 2003. Thesis Title: *Admission Control for Multi-hop Wireless Networks: A Theoretical Framework for Efficient Capacity Management*
- **Sophia Fotopoulo-Prigipia, M.S. 2003** in Electrical Engineering (CDSP) Successful Defense 2003. Thesis Title: *Geograms versus Geocircuits: Analysis of Location-Based Routing for Wireless Ad Hoc Networks*
- **Emre Safak, M.S. 2003** in Electrical Engineering (CDSP). Successful Defense 2003. Thesis Title: *Location Management in Wireless Ad Hoc Networks: Modeling and Analysis*
- **Francis Wong, M.S. 2003** in Electrical Engineering (CDSP). Successful Defense 2003. Thesis Title: *Adaptive Cluster-Based Geodesic Routing for Ad Hoc Networks*

Master's Project Advisees: Completed Degrees [2]

- **Abhijit Purandare, M.S. 2006** in Electrical Engineering (CDSP). Project Title: *The Impact of Handover on Wireless Applications.*
- **Roy Abi Younnis, M.S. 2006** in Electrical Engineering (CDSP). Project Title: *Multi-Cluster Ad Hoc Mobile Subsurface Oceanic Acoustic Networks.*

Current Graduate Student Research Advisees [7]

- **Hardick Ajmera:** M.S. Project Student (RA)
- **Rolando Herrero:** Doctoral Candidate (PT)
- **Seung-Une Lee:** Doctoral Candidate (RA)
- **Ashok Nayak:** M.S. Project Student
- **Emre Safak:** Doctoral Candidate (PT)
- **Natesh Thangrajan:** M.S. Project Student
- **Daniel Ugarte:** Doctoral Candidate (RA)

Graduate and Undergraduate Courses Taught [* First Time Teaching]

2006*	Spring	ECE G624: Mobile and Wireless Networks
2005*	Fall	ECE U322: Digital Logic Design
2005*	Fall	ECE U323: Digital Logic Design Lab
2005	Spring	ECE G311: Communications Networks and Performance
2005	Fall	ECE U628: Computer Communications Networks
2005	Fall	ECE U629: Internetworking Design Lab
2004	Spring	ECE U628: Computer Communications Networks
2004*	Spring	ECE U629: Internetworking Design Lab
2004*	Spring	ECE G399: Advanced Research Seminar
2004	Fall	ECE G311: Communications Networks and Performance Engineering
2003	Spring	ECE 1458: Computer Communications Networks
2003*	Winter	ECE 1330: Noise and Stochastic Processes
2003*	Winter	ECE 1330: Noise and Stochastic Processes: Honors Adjunct
2002	Fall	ECE 3511: Communications Networks and Performance Engineering
2002*	Spring	ECE 1458: Computer Communications Networks
2002*	Winter	ECE 3655: Special Topics in Computer Networks
2001	Fall	ECE 3511: Communications Networks and Performance Engineering
2001*	Spring	ECE 3650: Local Area Networks and Internetworking
2001*	Winter	ECE 3511: Communications Networks and Performance Engineering

Summary of Professional Service

- 2006 • *External Ph.D. Committee Member—Defense April*
- 2006 • *Member President’s Advisory Board on GLBT Issues*
- 2004 • *ACM PE-WASUN Member of Technical Program Committee.*
- 2004 • **NSF Proposal Panalist: CISE** Arlington, VA. May 2004 (4th Panel in 4 Years).
- 2004 • **IEEE Infocom 2005 (in 2004) Executive Committee: Publicity Co-Chair.**
- 2004 • *Faculty Coordinator for Ph.D. Qualifier Examination in Computer Engineering.*
- 2004 • *Faculty Co-Advisor to Northeastern IEEE Student Chapter.*
- 2004 • *Member of 2004 Graduate Admissions Committee; Chair Brad Lehman (ECE).*
- 2004 • **Technical Program Chair: SCS CNDS’04, San Diego, CA, January 2004.**
- 2004 • *Technical Program Committee: IEEE/ACM Simulation Symposium 2004.*
- 2004 • *External Ph.D. Committee Member/Reader (Proposal Defense).*
- 2004 • *External Expert Proposal Reviewer (Australia).*
- 2004 • *M.S.E.E. Committee Member/Reader.*
- 2004 • *Ph.D. CE Committee Member/Reader.*
- 2003 • *Technical Program Committee: ACM MobiHoc Poster Session; Chair Jason Redi; 2003.*
- 2003 • **NSF Proposal Panalist ANIR/ANR: ITR Medium** Arlington, VA. March 2003.
- 2003 • *Member of 2003 Graduate Admissions Committee; Chair Brad Lehman (ECE).*
- 2003 • *Faculty Co-Advisor to Northeastern IEEE Student Chapter.*
- 2003 • *Voting Faculty Rep. of Northeastern University Technology Steering Committee (UTC).*
- 2002 • *Faculty Co-Advisor to Northeastern IEEE Student Chapter.*
- 2002 • *Member of Ad Hoc Committee Proposing Changes to UTC Process; July 2002.*
- 2002 • *Voting Faculty Rep. of Northeastern University Technology Steering Committee (UTC).*
- 2002 • *Member of Information Engineering Organizing Committee (ECE).*
- 2002 • *Member of Telecommunications Management Organizing Committee (COE).*
- 2002 • **Technical Program Chair: SCS CNDS’03, Orlando, FL, January 2003.**
- 2002 • *Technical Program Committee: IEEE/ACM Simulation Symposium 2003.*
- 2003 • *Technical Program Committee: HICSS-37 Mobile and Distributed Information Track; 2003.*
- 2002 • *Reviewer: IEEE Computer and Communications Societies (INFOCOM) 2003.*
- 2002 • **NSF Proposal Panalist ANIR/ANR: ITR Small** Arlington, VA. June 5-6 2002.
- 2002 • *Reviewer: IEEE Computer and Communications Societies (INFOCOM) 2002.*
- 2001 • **Technical Program Chair: SCS CNDS’03, San Antonio TX, January 2002.**
- 2001 • **NSF Proposal Panalist ANIR/ANR: ITR Small** Arlington, VA. May 2001.
- 2001 • *Member Faculty Search Committee (ECE).*
- 2001 • *Technical Program Committee: IEEE Symposium on Wireless Ad Hoc Networks.*