Curriculum Vitae

Violet R. Syrotiuk

Associate Professor of Computer Science and Engineering
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Background

a. Education

Ph.D. (Computer Science) 1992, University of Waterloo, Waterloo, ON, Canada.
"Wang Tilings and Distributed Orientation on Anonymous Torus Networks."
Advisors: Dr. Charles J. Colbourn and Dr. Jan K. Pachl.

M.Sc. (Computer Science) 1984, University of British Columbia, Vancouver, B.C., Canada.
"A Functional Programming Language with Context Free Grammars as Data Types."
Advisors: Dr. Akira Kanda and Dr. Harvey Abramson.

B.Sc. (Computer Science) 1983, University of Alberta, Edmonton, AB, Canada.

b. Academic Experience

Arizona State University, Department of Computer Science and Engineering,
(Tenured) Associate Professor. Since 2008.

Arizona State University, Department of Computer Science and Engineering,
(Tenure Track) Associate Professor. Since 2006.

Arizona State University, Department of Computer Science and Engineering,
(Tenure Track) Assistant Professor. 2002–2006.

University of Texas at Dallas, Department of Computer Science,
(Tenure Track) Assistant Professor. 1999–2002.

Publications

Names in bold indicate my graduate students.

a. Refereed Archival Journal Papers

1. C. J. Colbourn and V. R. Syrotiuk, "On a Combinatorial Framework for Fault Characterization," *Mathematics in Computer Science* 12(4), 429–451, December 2018.

2. C. J. Colbourn, D. Horsley, and V. R. Syrotiuk, "A Hierarchical Framework for Recovery in Compressive Sensing," *Discrete Applied Mathematics* 36 : 96–107, February 2018.

3. **J. Lutz**, C. J. Colbourn, and V. R. Syrotiuk, "Variable-Weight Topology-Transparent Scheduling," *Computer Networks* 122 : 16–28, July 2017.

4. **A. N. Aldaco**, C. J. Colbourn, and V. R. Syrotiuk, "Locating Arrays: A New Experimental Design for Screening Complex Engineered Systems," *SIGOPS Operating Systems Review* 49(1) : 31–40, January 2015.

5. **J. Lutz**, C. J. Colbourn, and V. R. Syrotiuk, "ATLAS: Adaptive Topology- and Load-Aware Scheduling," *IEEE Transactions on Mobile Computing* 13(10) : 2255–2268, October 2014.

6. **K. Shaukat** and V. R. Syrotiuk, "Using Local Conditions to Reduce Control Overhead," *Ad Hoc Networks* 11(5) : 1782–1795, August 2013.

7. **J. Lutz**, C. J. Colbourn, and V. R. Syrotiuk, "Topological Persistence for Medium Access Control," *IEEE Transactions on Mobile Computing* 12(8) : 1598–1612, August 2013.

8. C. J. Colbourn, D. Horsley, and V. R. Syrotiuk, "Strengthening Hash Families for Compressing Sensing," *Journal of Discrete Algorithms* 16 : 170–186, 2012.

9. **S. A. Obeidat**, **A. N. Aldaco**, and V. R. Syrotiuk, "Cross-Layer Opportunistic Adaptation for Voice over Ad Hoc Networks," *Computer Networks* 56(2) : 762–779, February 2012.

10. C. J. Colbourn, A. C. H. Ling, G. Quattrocchi, and V. R. Syrotiuk, Grooming Traffic to Minimize Load," *Discrete Mathematics* 312(3) : 536–544, February 2012.

11. C. J. Colbourn, G. Quattrocchi, and V. R. Syrotiuk, "Grooming Traffic to Maximize Throughput in SONET Rings," *IEEE OSA Journal of Optical Communications and Networking* 3 : 10–16, 2011.

12. **D. W. McClary**, V. R. Syrotiuk, and M. Kulahci, "Steepest-Ascent Constrained Simultaneous Perturbation for Multi-Objective Optimization," *ACM Transactions on Modeling and Computer Simulation* 21(1) : Article 2, 22 pages, December 2010.

13. **D. W. McClary**, V. R. Syrotiuk, and M. Kulahci, "Profile Driven Regression for Modelling and Run-Time Optimization of Mobile Networks," *ACM Transactions on Modeling and Computer Simulation* 20(3) : Article 17, 24 pages, September 2010.

14. **M. Cui** and V. R. Syrotiuk, "Time-Space Backoff for Fair Node Throughput in Wireless Networks using Power Control," *Ad Hoc Networks* 8 : 267–777, 2010.

15. **Y. Moon** and V. R. Syrotiuk, "A Cooperative CDMA-based Multi-channel MAC Protocol for Mobile Ad Hoc Networks," *Computer Communications* 32(17) : 1810–1819, November 2009.

16. **S. A. Obeidat** and V. R. Syrotiuk, "An Opportunistic Cross-Layer Architecture for Voice in Multi-hop Wireless LANs," *International Journal of Communication Systems* 22 (4) : 419–439, April 2009.

17. **K. Shaukat** and V. R. Syrotiuk, "Using Monitoring to Control a Proactive Routing Protocol," *Ad Hoc and Sensor Wireless Networks, An International Journal* 6 (3-4) : 299–319, 2008.

18. C. J. Colbourn, G. Quattrocchi, and V. R. Syrotiuk, "Grooming for Two-Period Optical Networks," *Networks* 52 (4) : 307–324, 2008.

19. C. J. Colbourn, G. Quattrocchi, and V. R. Syrotiuk, "Lower Bounds for Two-Period Grooming via Linear Programming Duality," *Networks* 52 (4) : 299–306, 2008.

20. **D. W. McClary**, V. R. Syrotiuk, and V. Lecuire, "Adaptive Audio Streaming in Mobile Ad Hoc Networks using Neural Networks," *Ad Hoc Networks* 6 (4) : 524–538, June 2008.

21. V. R. Syrotiuk, C. J. Colbourn, and **S. Yellamraju**, "Rateless Forward Error Correction for Topology-Transparent Scheduling," *IEEE/ACM Transactions on Networking* 16 (2) : 464–472, April 2008.

22. P. J. Dukes, C. J. Colbourn, and V. R. Syrotiuk, "Directed Complete Bipartite Graph Decompositions: Indirect Constructions," *Discrete Mathematics* 308 : 367–374, 2008.

23. C. J. Colbourn, **M. Cui**, E. L. Lloyd, and V. R. Syrotiuk, "A Carrier Sense Multiple Access Protocol with Power Backoff (CSMA/PB)," *Ad Hoc Networks* 5 (8) : 1233–1250, November 2007.

24. V. R. Syrotiuk, **Z. Zhang**, and C. J. Colbourn, "Transport Schemes for Topology-Transparent Scheduling," *Journal of Combinatorial Optimization* 14 (2-3) : 229–248, October 2007.

25. P. J. Dukes, V. R. Syrotiuk, and C. J. Colbourn, "Ternary Schedules for Energy-Limited Sensor Networks," *IEEE Transactions on Information Theory* 53 (8) : 2791–2798, August 2007.

26. **J. W. Lee**, Y.-H. Lee, and V. R. Syrotiuk, "The Performance of a Watchdog Protocol for Wireless Network Security," *International Journal of Wireless and Mobile Computing* 2(1) : 28–36, 2007.

27. **K. K. Vadde**, V. R. Syrotiuk, and D. C. Montgomery, "Optimizing Protocol Interaction using Response Surface Methodology," *IEEE Transactions on Mobile Computing* 5(6) : 627–639, June 2006.

28. W. Chu, C. J. Colbourn, and V. R. Syrotiuk, "The Effects of Synchronization on Topology-Transparent Scheduling," *Wireless Networks* 12(6) : 681–690, November 2006.

29. W. Chu, C. J. Colbourn, and V. R. Syrotiuk, "Slot Synchronized Topology-Transparent Scheduling for Sensor Networks," *Computer Communications* 29(4) : 421–428, February 2006.

30. C. J. Colbourn and V. R. Syrotiuk, "Cover-Free Families and Topology-Transparency," *Bayreuther Mathematische Schriften* (in English) 73 : 86–106, 2005.

31. **K. K. Vadde** and V. R. Syrotiuk, "Quantifying Factors Impacting Quality-of-Service in Mobile Ad Hoc Networks," *Simulation: Transactions of the Society for Modeling and Simulation International* 81(8) : 547–560, August 2005.

32. V. R. Syrotiuk, **M. Cui**, **S. Ramkumar**, and C. J. Colbourn, "Dynamic Spectrum Utilization in Ad Hoc Networks," *Computer Networks* 46(5) : 665–678, December 2004.

33. **K. K. Vadde** and V. R. Syrotiuk, "Factor Interaction on Service Delivery in Mobile Ad Hoc Networks," *IEEE Journal on Selected Areas in Communications* 22(7) : 1335–1346, September 2004.

34. C. J. Colbourn, A. C. H. Ling, and V. R. Syrotiuk, "Cover-Free Families and Topology-Transparent Scheduling for MANETs," *Designs, Codes, and Cryptography* 32(1-3) : 65–96, May–July 2004.

35. A. Faragó and V. R. Syrotiuk. "MERIT: A Scalable Approach for Protocol Assessment," *Mobile Networks and Applications* 8(5) : 567–577, 2003.

36. **A. D. Myers**, **G. V. Záruba**, and V. R. Syrotiuk. "An Adaptive Generalized Transmission Protocol for Mobile Ad Hoc Networks," *Mobile Networks and Applications* 7(6) : 493–502, December 2002.

37. S. Basagni, I. Chlamtac, and V. R. Syrotiuk. "Location Aware, Dependable Multicast for Mobile Ad Hoc Networks," *Computer Networks* 36(5-6) : 659–670, 2001.

38. A. Faragó, **A. D. Myers**, V. R. Syrotiuk, and **G. V. Záruba**. "Meta-MAC Protocols: Automatic Combination of MAC Protocols to Optimize Performance for Unknown Conditions," *IEEE Journal on Selected Areas in Communications* 18(9) : 1670–1681, September 2000.

39. V. R. Syrotiuk, C. J. Colbourn, and J. K. Pachl. "Wang Tilings and Distributed Verification on Anonymous Torus Networks," *Theory of Computing Systems* 30(2) : 145–163, January 1997.

b. National and International Conference Proceedings Refereed Papers

1. C. J. Colbourn and V. R. Syrotiuk, "Detecting Arrays for Main Effects," *Proceedings of the 8th International Conference on Algebraic Informatics* (CAI), Niš, Serbia, June 30-July 4, 2019, to appear in Lecture Notes in Computer Science.

2. **S. A. Seidel**, C. J. Colbourn, and V. R. Syrotiuk, "Robustness of Recovery in Locating Array-based Screening Experiments," *Proceedings of the SCS Spring Simulation Conference* (SpringSim), Tucson, Arizona, U.S.A., April 29-May 2, 2019.

   S. A. Seidel, K. Sarkar, C. J. Colbourn, and V. R. Syrotiuk, "Separating Interaction Effects using Locating and Detecting Arrays," *Proceedings of the International Workshop on Combinatorial Algorithms* (IWOCA), Singapore, July 16-19, 2018, in Lecture Notes in Computer Science 10979 (2018), 349–360.

3. **M. J. Mellott**, C. J. Colbourn, V. R. Syrotiuk, and I. Tinnirello, "Testbed Evaluation of Optimized REACT with Multi-hop Extensions," *Proceedings of the 16th International Conference on Wired/Wireless Internet Communications* (WWIC), Boston, Massachusetts, U.S.A., June 18-20, 2018, in Lecture Notes Lecture Notes in Computer Science 10866 (2018),134–145.

4. **S. A. Seidel**, M. T. Mehari, C. J. Colbourn, E. De Poorter, I. Moerman, and V. R. Syrotiuk, "Analysis of Large-Scale Experimental Data from Wireless Networks," *Proceedings of the International Workshop on Computer and Networking Experimental Research Using Testbeds* (CNERT), in conjunction with *IEEE International Conference on Computer Communications* (INFOCOM), 535–540, Honolulu, Hawaii, U.S.A., April 16, 2018.

5. I. Tinnirello, D. Garlisi, F. Giuliano, V. R. Syrotiuk, and G. Bianchi, "Demo: MAC Learning: Enabling Automatic Combination of Elementary Protocol Components," *Proceedings of the 10th ACM International Workshop on Wireless Testbeds, Experimental evaluation and CHaracterization* (WINTECH), in conjunction with the *22nd ACM International Conference on Mobile Computing and Networking* (MobiCom), New York, New York, U.S.A., October 3, 2016.

6. **N. Flick**, D. Garlisi, V. R. Syrotiuk, and I. Tinnirello, "Testbed Implementation of the Meta-MAC Protocol," *Proceedings of the International Workshop on Computer and Networking Experimental Research Using Testbeds* (CNERT), in conjunction with *IEEE International Conference on Computer Communications* (INFOCOM), San Francisco, California, U.S.A., April 11, 2016.

7. **R. Compton**, M. T. Mehari, C. J. Colbourn, E. De Poorter, and V. R. Syrotiuk, "Screening Interacting Factors in a Wireless Network Testbed Using Locating Arrays," *Proceedings of the International Workshop on Computer and Networking Experimental Research Using Testbeds* (CNERT), in conjunction with *IEEE International Conference on Computer Communications* (INFOCOM), 650–655, San Francisco, California, U.S.A., April 11, 2016.

8. C. J. Colbourn and V. R. Syrotiuk, "Coverage, Location, Detection, and Measurement," *Proceedings of the 5th International Workshop on Combinatorial Testing* (IWCT), in conjunction with *IEEE International Conference on Software Testing, Verification and Validation* (ICST), Chicago, Illinois, U.S.A., April 10, 2016.

9. **A. Ghaffarinejad** and V. R. Syrotiuk, "OpenFlow versus Commercial Load Balancers in a Campus Network," *Proceedings of the 82nd IEEE Conference on Vehicular Technology* (VTC-Fall), Boston, Massachusetts, U.S.A., September 6-9, 2015.

10. D. Garlisi, F. Giuliano, A. Lo Valvo, **J. Lutz**, V. R. Syrotiuk, and I. Tinnirello, "Making WiFi Work in Multi-Hop Topologies: Automatic Negotiation and Allocation of Airtime," *Proceedings of the International Workshop on Computer and Networking Experimental Research Using Testbeds* (CNERT), in conjunction with the *IEEE 35th International Conference on Distributed Computing Systems* (ICDCS), Columbus, Ohio, U.S.A., June 29, 2015.

11. **A. Ghaffarinejad** and V. R. Syrotiuk, "Load Balancing in a Campus Network using Software Defined Networking," *Proceedings of the Third GENI Research and Educational Experiment Workshop* (GREE) Altanta, Georgia, U.S.A., March 19-20, 2014.

12. M. P. McGarry, J. E. Hernandez, R. Ferzli, and V. R. Syrotiuk, "Minimizing Video Retransmission Delay and Energy Consumption with Caching Routers," *Proceedings of the Emerging Multimedia Systems and Applications Workshop* (EMSA) at the *IEEE International Conference on Multimedia and Expo* (ICME), Melbourne, Australia, July 9-13, 2012.

13. **N. Bapat** and V. R. Syrotiuk, "Adapting Sensing and Transmission Times to Improve Throughput in Cognitive Radio Ad Hoc Networks," *Proceedings of the IEEE International Workshop on Emerging Cognitive Radio Applications and Algorithms* (CORAL), San Francisco, California, U.S.A., June 25, 2012.

14. **J. Lutz**, C. J. Colbourn, and V. R. Syrotiuk, "Variable Weight Sequences for Adaptive Channel Access in MANETs," *Proceedings of Sequences and their Applications* (SETA), Waterloo, Ontario, Canada, June 4-8, 2012, in Lecture Notes in Computer Science 7280 (2012), 53–64.

15. **K. Shaukat**, D. C. Montgomery, and V. R. Syrotiuk, "Adapative Overhead Reduction via MEWMA Control Charts," to appear in *Proceedings of the 14th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems* (MSWiM), Miami, Florida, U.S.A., October 31-November 4, 2011.

16. V. R. Syrotiuk, Y. Chen, E. Kostelich, Y.-H. Lee, A. Mahalov, and G. Speyer, "ASU and Intel Collaboration in Parallel and Distributed Computation," *Proceedings of the first NSF/TCPP Workshop on Parallel and Distributed Computing Education* (EduPar), Anchorage, Alaska, USA, May 16, 2011.

17. **Y. Moon** and V. R. Syrotiuk, "A Cooperative Dual Access Multi-Channel MAC Protocol for Ad Hoc Networks," *Proceedings of the 53rd IEEE Global Communications Conference* (Globecom), Miami, Florida, U.S.A., December 6-10, 2010, pp. 1–5.

18. **J. Lutz**, C. J. Colbourn, and V. R. Syrotiuk, "Apples and Oranges: Comparing Schedule- and Contention-based Medium Access Control," *Proceedings of the 13th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems* (MSWiM), Bodrum, Turkey, October 17-21, 2010, pp. 319–326.

19. C. J. Colbourn, D. Horsley, and V. R. Syrotiuk, "Frameproof Codes and Compressive Sensing," *Proceedings of the 48th Annual Allerton Conference on Communication, Control, and Computing*, Monticello, Illinois, U.S.A., September 29 - October 1, 2010, pp. 985–990.

20. **K. Shaukat** and V. R. Syrotiuk, "Locally Proactive Routing Protocols," *Proceedings of the 9th International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Edmonton, Alberta, Canada, August 20-22, 2010, pp. 68–80.

21. **M. Cui** and V. R. Syrotiuk, "Cooperative Signalling and its Application in a Power-Controlled MAC Protocol," *Proceedings of the 8th International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Murcia, Spain, September 22-25, 2009.

22. **D. W. McClary**, V. R. Syrotiuk, and M. Kulahci, "A Framework for Reactive Optimization in Mobile Ad Hoc Networks," *Proceedings of the 1st IEEE International Conference on Information Technology* (IT), Gdansk, Poland, May 19-21, 2008, pp. 3–8.

23. **M. Cui** and V. R. Syrotiuk, "Fair Variable Transmission Power Control," to appear in *Proceedings of the 50th Global Communications Conference* (Globecom), Ad-hoc and Sensor Networking Symposium, Washington, D.C., U.S.A., November 26–30, 2007, pp. 683–687.

24. **Y. Moon** and V. R. Syrotiuk, "A Cooperative CDMA-based Multi-channel MAC Protocol for Mobile Ad Hoc Networks," *Proceedings of the 6th International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Morelia, Mexico, September 24–26, 2007, pp. 172–185.

25. **K. Shaukat** and V. R. Syrotiuk, "Statistical Monitoring to Control a Proactive Routing Protocol," *Proceedings of the 6th International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Morelia, Mexico, September 24–26, 2007, pp. 46–58.

26. C. J. Colbourn, P. J. Dukes, and V. R. Syrotiuk, "Generalized Cover-Free Families for Topology-Transparent Channel Assignment," *Proceedings of the 10th IEEE Pacific Rim Conference on Communications, Computers and Signal Processing* (PACRIM), Victoria, B.C., Canada, August 22–24, 2007, pp. 379–382.

27. **D. W. McClary**, V. R. Syrotiuk, and M. Kulahci, "Meta-Regression: A Framework for Robust Reactive Optimization," *Proceedings of the 1st IEEE International Conference on Self-Adaptive and Self-Organizing Systems* (SASO), Boston, Massachusetts, U.S.A., July 9–11, 2007, pp. 375–378.

28. Y. Chen, E. Fleury, and V. R. Syrotiuk, "Topology-Transparent Duty Cycling for Wireless Sensor Networks," *Proceedings of the 21st IEEE International Parallel and Distributed Processing Symposium* (IPDPS), Long Beach, California, U.S.A., March 26–30, 2007, pp. 1–10.

29. V. R. Syrotiuk, **K. Shaukat**, **Y. J. Kwon**, M. Kraetzl, and J. Arnold, "Application of a Network Dynamics Analysis Tool to Mobile Ad Hoc Networks," *Proceedings of the 9th ACM/IEEE International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems* (MSWiM), Torremolinos, Spain, October 2–6, 2006, pp. 36–43.

30. C. J. Colbourn, **K. N. Johnson**, V. R. Syrotiuk, M. Kraetzl, and K.-P. Hui, "System Lifetime: A Global Problem and Local Solutions," *Proceedings of the 5th IFIP Annual Mediterranean Ad Hoc Networking Workshop* (MedHocNet), Lipari, Italy, June 14–17, 2006, pp. 208–215.

31. C. J. Colbourn, **M. Cui**, V. R. Syrotiuk, and E. L. Lloyd, "A Carrier Sense Multiple Access Protocol with Power Backoff (CSMA/PB)," *Proceedings of the 5th IFIP Annual Mediterranean Ad Hoc Networking Workshop* (MedHocNet), Lipari, Italy, June 14–17, 2006, pp. 76–83.

32. **M. P. McGarry**, M. Reisslein, and V. R. Syrotiuk, "Access Control in Heterogeneous Multichannel Wireless Networks," *Proceedings of the 1st IEEE International Conference on Integrated Internet Ad hoc and Sensor Networks* (Intersense), Nice, France, May 29–31, 2006.

33. P. J. Dukes, C. J. Colbourn, and V. R. Syrotiuk, "Topology-Transparent Schedules for Energy Limited Ad hoc Networks," *Proceedings of the IEEE International Workshop on Foundations and Algorithms for Wireless Networking* (FAWN), Pisa, Italy, March 13, 2006, pp. 85–90.

34. **K. K. Vadde**, V. R. Syrotiuk, and M. Kulahci, "Towards Understanding Factor Dynamics," *Proceedings of the 2nd IEEE International Workshop on Adaptive Wireless Networks* (AWiN), St. Louis, Missouri, U.S.A., November 28, 2005.

35. C. J. Colbourn and V. R. Syrotiuk, "Scheduled Persistence for Medium Access Control in Sensor Networks," *Proceedings of the 1st IEEE International Conference on Mobile Ad-hoc and Sensor Systems* (MASS), Fort Lauderdale, Florida, U.S.A., October 25–27, 2004, pp. 264–273.

36. **M. Benaissa**, V. Lecuire, **D. W. McClary**, and V. R. Syrotiuk, "ANOVA-Informed Decision Trees for Voice Applications over MANETS," *Proceedings of the 6th IEEE International Conference on Mobile and Wireless Communication Networks* (MWCN), Paris, France, October 25–27, 2004, pp. 143–154.

37. **M. Cui**, V. R. Syrotiuk, and C. J. Colbourn, "Securing Dynamic Spectrum Use," *Proceedings of the 60th IEEE Vehicular Technology Conference – Fall* (VTC-Fall), Los Angeles, California, U.S.A., September 26–29, 2004, pp. 1153–1157.

38. **K. K. Vadde** and V. R. Syrotiuk, "The Impact of QoS-Aware MAC Protocols in Classic and QoS MANET Architectures," *Proceedings of the SCS International Symposium on Performance Evaluation of Computer and Telecommunication Systems* (SPECTS), San Jose, California, U.S.A., July 25–29, 2004, pp. 561–568.

39. **K. K. Vadde** and V. R. Syrotiuk, "On Timers of Routing Protocols in Mobile Ad Hoc Networks," *Proceedings of the 3rd International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Vancouver, B.C., Canada, July 22–24, 2004, pp. 330–335.

40. W. Chu, C. J. Colbourn, and V. R. Syrotiuk, "Topology Transparent Scheduling, Synchronization and Maximum Delay," *Proceedings of the 18th International Parallel and Distributed Processing Symposium* (IPDPS), Santa Fe, New Mexico, U.S.A., April 26–30, 2004, pp. 223–228.

41. **P. C. Gurumohan**, T. J. Taylor, and V. R. Syrotiuk, "Topology Control for MANETs," *Proceedings of the IEEE Wireless Communications and Networking Conference* (WCNC), Atlanta, Georgia, U.S.A., March 21–24, 2004, Vol. 1, pp. 599–603.

42. **P. Narayan** and V. R. Syrotiuk, "Evaluation of the DSR and AODV Routing Protocols using the MERIT Tool," *Proceedings of the 2nd International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Montreal, Quebec, Canada, October 8–10, 2003, pp. 25–36.

43. C. J. Colbourn, V. R. Syrotiuk, and A. C. H. Ling, "Steiner Systems for Topology-Transparent Access Control in MANETs," *Proceedings of the 2nd International Conference on Ad Hoc Networks and Wireless* (AdHoc Now), Montreal, Quebec, Canada, October 8–10, 2003, pp. 247–258.

44. V. R. Syrotiuk, C. J. Colbourn, and A. C. H. Ling, "Topology-Transparent Scheduling for MANETs using Orthogonal Arrays," *Proceedings of the DIALM-POMC Joint Workshop on Foundations of Mobile Computing* (DIALM-POMC), San Diego, California, U.S.A., September 19, 2003, pp. 43–49.

45. V. R. Syrotiuk, "A Model of Protocol Interaction using Inverse Optimization," *Proceedings of the 9th International Conference on Information Systems, Analysis and Synthesis* (ISAS), Orlando, Florida, U.S.A., July 31, August 1–2, 2003, Volume 5, pp. 57–61.

46. V. R. Syrotiuk and C. J. Colbourn, "Adaptive Bandwidth Utilization via Frequency Hopping and Erasure Coding," *Proceedings of the 9th International Conference on Information Systems, Analysis and Synthesis* (ISAS), Orlando, Florida, U.S.A., July 31, August 1–2, 2003, Volume 5, pp. 62–65.

47. V. R. Syrotiuk and C. J. Colbourn, "Routing in Mobile Aerial Networks," *Proceedings of Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks* (WiOpt), INRIA Sophia-Antipolis, France, March 3–5, 2003, pp. 293–301.

48. V. R. Syrotiuk and **M. Sevugan**, "Mobility Independent Medium Access Control in Support of Multimedia," *Proceedings of the 5th International IEEE Symposium on Wireless Personal Multimedia Communications* (WPMC), Honolulu, Hawaii, U.S.A., October 27–30, 2002, pp. 907–910.

49. A. Faragó and V. R. Syrotiuk, "Minimum Energy Broadcast with Performance Guarantee in Power-Controlled Ad Hoc Networks," *Proceedings of the 14th International Conference on Wireless Communications* (Wireless), Calgary, Alberta, Canada, July 8–10, 2002, pp. 408–417.

50. A. Faragó and V. R. Syrotiuk, "Algorithmic Problems in Power-Controlled Ad Hoc Networks," *Proceedings of the 14th International Conference on Parallel and Distributed Computing Systems* (PDCS), Dallas, Texas, U.S.A., August 8–10, 2001.

51. A. Faragó and V. R. Syrotiuk, "MERIT: A Unified Framework for Routing Protocol Assessment in Mobile Ad Hoc Networks," *Proceedings of the 7th Annual ACM International Conference on Mobile Computing and Networking* (MobiCom), Rome, Italy, July 16–21, 2001, pp. 53–60.

52. V. R. Syrotiuk, "An Efficient On-Line Algorithm for the Shortest Mobile Path Problem," *Proceedings of the 13th International Conference on Wireless Communications* (Wireless), Calgary, Alberta, Canada, July 9–11, 2001, pp. 154–160.

53. A. Faragó, **A. D. Myers**, V. R. Syrotiuk, and **G. V. Záruba**, "A New Approach to MAC Protocol Optimization," *Proceedings of the IEEE Global Communications Conference* (Globecom), San Francisco, California, U.S.A., November 29–December 1, 2000, pp. 1742–1746.

54. S. Basagni, I. Chlamtac, V. R. Syrotiuk, and **R. Talebi**, "On-Demand Location Aware Multicast (OLAM) for Ad Hoc Networks," *Proceedings of the IEEE Wireless Communications and Networking Conference* (WCNC), Chicago, Illinois, U.S.A., September 23–28, 2000, pp. 1323–1328, .

55. **A. D. Myers**, **G. V. Záruba**, and V. R. Syrotiuk, "An Adaptive Medium Access Control (MAC) Protocol for Reliable Broadcast in Wireless Networks," *Proceedings of the IEEE International Conference on Communications* (ICC), New Orleans, Louisiana, U.S.A., June 18–22, 2000, pp. 1692–1696.

56. S. Basagni, I. Chlamtac, and V. R. Syrotiuk, "Location Aware One-to-Many Communication in Mobile Multi-Hop Wireless Networks," *Proceedings of the 51st IEEE International Vehicular Technology Conference – Spring* (VTC-Spring), Tokyo, Japan, May 15–18, 2000, pp. 288–292.

57. I. Chlamtac, A. Faragó, **A. D. Myers**, V. R. Syrotiuk, and **G. V. Záruba**, "A Performance Comparison of Hybrid and Conventional MAC Protocols for Wireless Networks," *Proceedings of the 51st IEEE International Vehicular Technology Conference – Spring* (VTC-Spring), Tokyo, Japan, May 15–18, 2000, pp. 201–205.

58. I. Chlamtac, A. Faragó, **A. D. Myers**, V. R. Syrotiuk, and **G. V. Záruba**, "ADAPT: A Dynamically Self-Adjusting Media Access Control Protocol for Ad Hoc Networks," *Proceedings of the IEEE Global Telecommunications Conference* (Globecom), Rio de Janeiro, Brazil, December 5–9, 1999, pp. 11–15.

59. S. Basagni, I. Chlamtac, A. Faragó, V. R. Syrotiuk, and **R. Talebi**, "Route Selection in Mobile Multimedia Ad Hoc Networks," *Proceedings of the 6th IEEE International Conference on Mobile Multimedia Communications* (MoMuC), San Diego, California, U.S.A., November 15–17, 1999, pp. 97–103.

60. S. Basagni, I. Chlamtac, and V. R. Syrotiuk, "Dynamic Source Routing for Ad Hoc Networks Using the Global Positioning System," *Proceedings of the IEEE Wireless Communications and Networking Conference* (WCNC), New Orleans, Louisiana, U.S.A., September 21–24, 1999, pp. 301–305.

61. S. Basagni, **A. D. Myers**, and V. R. Syrotiuk, "Mobility-Independent Flooding for Real-Time, Multimedia Applications in Ad Hoc Networks," *Proceedings of the 1st IEEE Emerging Technologies Symposium on Wireless Communications and Systems* (ETS), Richardson, Texas, U.S.A., April 12–13, 1999, pp. 20.1–20.5.

62. S. Basagni, I. Chlamtac, and V. R. Syrotiuk, "Geographic Messaging in Wireless Ad Hoc Networks," *Proceedings of the 49th Annual IEEE International Vehicular Technology Conference* (VTC), Houston, Texas, U.S.A., May 16–20, 1999, pp. 1957–1961.

63. S. Basagni, I. Chlamtac, V. R. Syrotiuk, and **B. A. Woodward**, "A Distance Routing Effect Algorithm for Mobility (DREAM)," *Proceedings of the 4th ACM/IEEE International Conference on Mobile Computing and Networking* (MobiCom), Dallas, Texas, U.S.A., October 25-30, 1998, pp. 76–84.

64. V. R. Syrotiuk, C. J. Colbourn, D. A. Klarner, and J. K. Pachl, "Characterizing Wang Tilings Using Finite Automata," *Proceedings of the 3rd International Workshop on Polyominoes and Tilings*, Toulouse, France, January 20-21, 1994, pp. 76–84.

65. V. R. Syrotiuk, C. J. Colbourn, and J. K. Pachl, "Wang Tilings and Distributed Orientation on Anonymous Torus Networks," *Proceedings of the 7th International Workshop on Distributed Algorithms* (WDAG), Lausanne, Switzerland, September 27-29, 1993, in *Lecture Notes in Computer Science*, Springer-Verlag, Volume 725, 1993, pp. 264–278.

66. V. R. Syrotiuk and J. K. Pachl, "A Distributed Ring Orientation Algorithm," *Proceedings of the 2nd International Workshop on Distributed Algorithms* (WDAG), Amsterdam, The Netherlands, July 8-10, 1987, in *Lecture Notes in Computer Science*, Springer-Verlag, Volume 312, 1987, pp. 332–336.

c. Book Publishing

1. L. Galluccio, K. Nahrstedt, and V. R. Syrotiuk, eds., Special Issue on Cross-Layer Design in Ad Hoc and Sensor Networks, *Ad Hoc Networks*, 11 : 611–721, 2013.

2. V. R. Syrotiuk and B. Bensaou, eds., Special Issue of on Advances in Wireless and Mobile Networks, *Performance Evaluation*, 68 (9) : September 2011.

3. V. R. Syrotiuk and B. Bensaou, eds., Special Issue on Advances in Wireless and Mobile Networks, *Computer Networks*, 54 (4) : March 2010.

4. **S. Nagi** and V. R. Syrotiuk, "Hybrid Medium Access Control Protocols for Wireless Networks," in *Medium Access Control in Wireless Networks*, H. Wu and Y. Pan, eds., Nova Science Publishers, Inc., 2008, Chapter 3, pp. 97–115.

5. **M. Cui** and V. R. Syrotiuk, "Power Control and Management in MAC Protocols for MANETs," in *Medium Access Control in Wireless Networks*, H. Wu and Y. Pan, eds., Nova Science Publishers, Inc., 2008, Chapter 5, pp. 127–154.

6. V. R. Syrotiuk, **B. Li**, and A. M. Mielke, "Heterogeneous Wireless Sensor Networks," in *Algorithms and Protocols for Wireless Ad hoc and Sensor Networks*, A. Boukerche, ed., John Wiley & Sons. 2008, Chapter 2, pp. 21–50.

7. V. R. Syrotiuk and E. Chávez, eds., "Best Papers of Ad Hoc Now 2005," *Journal of Discrete Algorithms* 5(3), September 2007.

8. V. R. Syrotiuk, "Medium Access Control (MAC) Protocols for Wireless Networks," in *Handbook of Algorithms for Wireless Networking and Mobile Computing*, A. Boukerche, ed., Chapman & Hall/CRC, Computer and Information Science Series, 2006, Chapter 3, pp. 23–44.

9. V. R. Syrotiuk and E. Chávez, eds., "Ad Hoc, Mobile, and Wireless Networks," Lecture Notes in Computer Science (LNCS), Volume 3738, 360 pages, Springer-Verlag, 2005.

10. V. R. Syrotiuk and **A. Bikki**, "Modeling Cross Layer Interaction using Inverse Optimization," in *Ad Hoc Networking*, S. Basagni, M. Conti, S. Giordano, and I. Stojmenovic, eds., John Wiley & Sons, 2004, Chapter 15, pp. 411–426.

11. A. Faragó and V. R. Syrotiuk, "Medium Access Control (MAC) Protocols," *Encyclopedia of Telecommunications*, J. Proakis, ed., John Wiley & Sons, 2003, pp. 1342–1349.

d. Other Publications

1. **J. Lutz**, C. J. Colbourn, and V. R. Syrotiuk, "Topology- and Load-Aware (TLA) Resource Allocation for a Medium Access Control (MAC) Protocol," U.S. Patent #9,590,918, granted March 7, 2017.

2. Editorial, L. Galluccio, K. Nahrstedt, and V. R. Syrotiuk, Special Issue on Cross-Layer Design in Ad Hoc and Sensor Networks, *Ad Hoc Networks* 11 : 611–612, 2013.

3. Editorial, V. R. Syrotiuk and B. Bensaou, Special Issue of on Advances in Wireless and Mobile Networks, *Performance Evaluation* 68 (9) : 747–749, September 2011.

4. Editorial, V. R. Syrotiuk and B. Bensaou, Special Issue on Advances in Wireless and Mobile Networks, *Computer Networks* 52 (4) : 525–526, March 2010.

5. A. Faragó and V. R. Syrotiuk "Method and Device for Communicating Data Within a Network by Combining Different Communication Approaches," U.S. Patent Number #7,159,027, granted January 2, 2007.

6. Editorial, V. R. Syrotiuk and E. Chávez, *Journal of Discrete Algorithms* 5(3) : 393–394, September 2007.

e. Invited Presentations

1. "Realizing Airtime Allocations in Multi-Hop Wi-Fi Networks: A Stability and Convergence Study with Testbed Evaluation," Seminar IDLab, Department of Elektronics-ICT, University of Antwerp - imec, Antwerp, Belgium, April 26, 2019.

2. "Design and Analysis of Experiments," Keynote Address, Chameleon User Meeting, Austin, Texas, U.S.A., February 6, 2019.

3. "Locating Arrays: A New Experimental Design for Complex Engineered Systems, Invited Presentation, Cybersecurity Analytics and Applications session of the Military Applications Society track at the *Annual INFORMS Conference*, November 4, 2018.

4. 'Screening Experiments: Do Interactions Matter?," Seminar, Department of Information Technology, Ghent University - imec, Ghent, Belgium, September 22, 2017.

5. "Using Locating Arrays for Screening in a Wireless Network Testbed," RosaFest: Alex Rosa is 80, Mikulov, Czech Republic, June 29, 2017.

6. "Making Wi-Fi Work in Multi-Hop Topologies: Automatic Negotiation and Allocation of Airtime, Fishbowl Seminar Series, Department of Electrical and Computer Engineering,Texas A&M University, February, 24, 2017.

7. "Locating Arrays and Screening Interactions," Seminar, Department of Mathematics, Beijing Jiaotong University, Beijing, China, July 1, 2016.

8. 'Screening Experiments: Do Interactions Matter?," Keynote Address, *The 12th IEEE International Workshop on Wireless Networks: Measurements and Experimentation* (WiNMeE), Tempe, Arizona, U.S.A., May 9, 2016.

9. "Making WiFi Work in Multi-Hop Topologies: Automatic Negotiation and Allocation of Airtime," Keynote Address, *Annual Meeting of the Sociedad Mexicana de Ciencias de la Computacion* (SMCC), Ensenada, Baja California, Mexico, October 5, 2015.

10. "The Combinatorics of Topology-Transparent Scheduling," *Algebraic Combinatorics and Applications*, Houghton, Michigan, U.S.A., August 29, 2015.

11. "Variable-Weight Topology-Transparent Scheduling," *19th Coast Combinatorics Conference*, Kailua-Kona, Hawaii, U.S.A., February 10, 2015.

12. "Topology and Load-Aware Persistence for Medium Access Control in Wireless Networks," Faculty of Information Technology and the School of Mathematical Sciences, Monash University, Melbourne, Australia, July 30, 2014.

13. "Complete Directed Bipartite Graph Decompositions and Energy-Limited Sensor Networks," *14th Haifa Workshop on Interdisciplinary Applications*, The Caesarea Rothschild Institute, University of Haifa, Haifa, Israel, June 12, 2014.

14. "Adaptive Topology- and Load-Aware Medium Access Control," Department of Electrical Engineering, Università di Palermo, Palermo, Italy, June 3, 2014.

15. "GENI in the Classroom: The Graduate vs. Undergraduate Class Experience," NSF Workshop on GENI in Education, Brooklyn, NY, U.S.A., October 26, 2013.

16. "Design and Analysis of Experiments," Education Session, GENI-FIRE Workshop, Leuven, Belgium, October 15, 2013.

17. "REACT over Wireless MAC Processors," Experiments Session, GENI-FIRE Workshop, Leuven, Belgium, October 14, 2013.

18. "Variable Weight Sequences for Adaptive Channel Access in MANETs," School of Computer Science and Engineering, Beihang University, Beijing, China, July 19, 2013.

19. "ATLAS: Adaptive Topology- and Load-Aware Scheduling," Sm@art Seminar, Dipartimento di Informatica, Università degli Studi di Roma "La Sapienza," Roma, Italy, May 27, 2013.

20. "Variable Weight Sequences for Adaptive Channel Access in MANETs," *18th Coast Combinatorics Conference*, Kailua-Kona, Hawaii, U.S.A., February 18, 2013.

21. "Using Locating Arrays for Screening Experiments," Invited Presentation, *Fourth National Conference on Combinatorial Designs and their Applications*, Zhejiang University, Hangzhou, China, June 16, 2012.

22. "Cover-Free Families and Topology-Transparent Scheduling for MANETs," Department of Mathematics, Beijing Jiaotong University, Beijing, China, June 25, 2012.

23. "Profile-Driven Regression for Modelling and Run-Time Optimization in Mobile Networks," Dipartimento di Ingegneria Informatica e delle Telecomunicazioni, Universitá di Catania, Catania, Italy, March 16, 2011.

24. "Roles of Monitoring in Autonomous Network Optimization," *Network Mapping and Measurement Conference*, College Park, Maryland, U.S.A., June 9, 2009.

25. "Profile-Driven Regression for Modelling and Run-Time Optimization in Mobile Networks," Department of Computer Science, University of Auckland, Auckland, New Zealand, May 13, 2009.

26. "Network FRESCO: A Framework for Experimental Screening, Control, and Optimization," Department of Electrical and Computer Engineering, University of Toronto, Toronto, Ontario, Canada, September 19, 2008.

27. "Network FRESCO: A Framework for Experimental Screening, Control, and Optimization," Guangxi Normal University, Guilin, China, June 24, 2008.

28. "Network FRESCO: A Framework for Experimental Screening, Control, and Optimization," Nanyang Technological University, Singapore, June 18, 2008.

29. "Cross-Layer Design and Optimization in Cognitive Radio Networks," Invited Speaker, *The First International IEEE Conference on Information Technology and Sixth National Conference on Information Technology*, Gdansk, Poland, May 20, 2008.

30. "Multi-Hop Wireless Networks: A Perspective," Distinguished Lecture, CRA-W's Distinguished Lecture Series at the University of Colorado, Boulder, Colorado, U.S.A., April 5, 2008.

31. "Career Options – What does a Ph.D. get you?," Panelist, Colorado Celebration of Women, Bouder, Colorado, U.S.A., April 5, 2008.

32. "Network FRESCO: A FRamework for Experimental Screening, Control, and Optimization," Department of Computer Science, The University of Memphis, Memphis, Tennessee, U.S.A., February 8, 2008.

33. "Hot Topic" Session on Issues in Cross-Layer Design in Next Generation Internet, Invited Speaker, *1st IEEE Workshop on Enabling the Future Service-Oriented Internet*, in conjunction with the 50th IEEE Global Communications Conference (Globecom), Washington, DC, U.S.A., November 26, 2007.

34. "Cover-Free Families and Topology-Transparent Communication," Zhejiang University, Hangzhou, China, June 19, 2007.

35. "Cover-Free Families and Topology-Transparent Communication," *International Workshop on Combinatorics*, Kyoto University, Kyoto, Japan, June 13, 2007.

36. "Network Protocols: Interactions and their Statistical Optimization," Invited Speaker, *21st IEEE Workshop on Computer Communications* (CCW), Pittsburgh, Pennsylvania, U.S.A., February 5, 2007.

37. "Research Overview in Mobile Ad Hoc Networks," General Dynamics C4 Systems, Scottsdale, Arizona, U.S.A., January 31, 2007.

38. "Building and Managing a Strong Research Group," Panelist, *Grace Hopper Celebration of Women in Computing*, San Diego, California, U.S.A., October 5, 2006.

39. "Neural Network Enabled Rate-Control for Mobile Ad Hoc Networks," Dipartimento di Ingegneria Informatica e delle Telecomunicazioni, Università di Catania, Catania, Italy, June 19, 2006.

40. "Network Protocols: Interactions and their Statistical Optimization," Department of Computing Science, University of Alberta, Edmonton, Alberta, Canada, November 24, 2005.

41. "Directed Complete Bipartite Graph Decompositions and Energy-Limited Sensor Networks," Dipartimento di Matematica e Informatica, Università di Catania, Catania, Italy, March 15, 2005.

42. "Factor Interaction on Service Delivery in Mobile Ad Hoc Networks," Department of Mathematics and Computer Sciences, Colorado School of Mines, Golden, Colorado, U.S.A., June 29, 2004.

43. "Problems in Discrete Mathematics motivated by Mobile Ad Hoc Networks," Plenary Invited Lecture, *Workshop on Working Applications of Discrete Mathematics*, University of Queensland, Brisbane, Australia, January 14, 2004.

44. "Heterogeneity, Scalability, and Cross-Layer Design in MANETs," Plenary Invited Lecture, *2nd International Conference on Ad Hoc Networks and Wireless* (Ad Hoc Now), Montreal, Quebec, Canada, October 9, 2003.

45. "Research in Mobile Ad Hoc Networks (MANETs)," Signal Processing Center of Excellence, General Dynamics Decision Systems, Scottsdale, Arizona, U.S.A., February 7, 2003.

46. "New Results on MERIT, A Scalable Approach to Protocol Assessment," Department of Computer Science, University of Auckland, Auckland, New Zealand, June 5, 2002.

47. "Meta-MAC Protocols: Automatic Combination of MAC Protocols to Optimize Performance for Unknown Conditions," Telecommunications Research Center, Arizona State University, Tempe, Arizona, U.S.A., April 22, 2002.

48. "MERIT: A Scalable Approach to Protocol Assessment," Department of Mathematics and Computer Sciences, Colorado School of Mines, Golden, Colorado, U.S.A., October 12, 2001.

49. "Algorithmic Aspects of Power Controlled Ad Hoc Networks," Department of Computer Science and Engineering, University of Texas at Arlington, Arlington, Texas, U.S.A., September 25, 2001.

50. "TSMA, A Synchronous MAC Protocol," Invited lecture at the *GloMoSim/Parsec Workshop*, University of California, Los Angeles, Los Angeles, California, U.S.A., November 11, 1999.

Research Grants

a. Sponsored Research — External

1. Principal Investigator, "Tools for Large-Scale Network Testbed Experimentation," $548,000, National Science Foundation, NeTS Award 1813451, Co-Principal Investigator: C. J. Colbourn (Arizona State University), October 2018 – September 2021.

2. Principal Investigator, "Collaborative Research: Broadening Participation in GENI," $197,555, plus supplement of $35,476, amending the total to $233,031, National Science Foundation Award 1649564, Collaborator: A. Matta (Boston University), December 2016 – December 2019.

3. Principal Investigator, "NSF Student Travel Grant for the 2019 Twentieth ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)," $13,000, National Science Foundation CNS Award 1917064, June 1, 2019 – November 30, 2019.

4. Principal Investigator, "NeTS: Small: Meta-Modelling for Complex Engineered Networks," $500,000, National Science Foundation, Co-Principal Investigator: C. J. Colbourn (Arizona State University), October 2014 – September 2019.

5. Principal Investigator, "Participant Support for Conference on Combinatorics and its Applications," $15,000, National Science Foundation, Division of Mathematical Sciences Award 1823290, March 2018 – December 2018.

6. Principal Investigator, "GENI Going Forward," $121,303, Subcontract of National Science Foundation Award CNS-1536090 with Raytheon BBN, January 2016 – December 2017.

7. Principal Investigator, "Support for GEC-24: The Twenty-Fourth GENI Engineering Conference," $25,811, National Science Foundation Award 1623811, January 2016 – December 2016.

8. Principal Investigator, "Broadening Participation in Teaching and Research in GENI," $45,531, National Science Foundation Award 1632602, February 2016 – February 2017.

9. Principal Investigator, "Autonomous Network Optimization and Compressive Sensing," $311,959, U.S. Government, 2009-1257117-000, Co-Principal Investigator: C. J. Colbourn (Arizona State University), September 2009 – September 2010.

10. Principal Investigator, "Cross-Layer Design and Optimization in Cognitive Radio Networks," $150,000, Department of Defense, Office of Naval Research (ONR) N00014-08-1-1070, Co-Principal Investigator: C. J. Colbourn (Arizona State University), June 2008 – June 2009.

11. Co-Principal Investigator, "Conditional Reliability and the Identification of Communities," $150,000, Department of Defense, Office of Naval Research (ONR) N00014-08-1-1069, Principal Investigator: C. J. Colbourn (Arizona State University), June 2008 – June 2009.

12. Principal Investigator, "Design and Analysis of Algorithms for Heterogeneous Sensor Networks," $72,177, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico, U.S.A., Co-Principal Investigator: C. J. Colbourn (Arizona State University), January 2005 – January 2008.

13. Principal Investigator, "Collaborative Research: Characterizing Protocol Interaction in NEWS: A Network Environment Wireless State Service," $516,000, National Science Foundation, NSF ANI-0240524 (includes REU supplements), Collaborator: T. K. Camp (Colorado School of Mines), June 2003 – May 2008.

14. Co-Principal Investigator, "MERIT: A Formal Framework for Systematic Protocol Assessment," $431,086, National Science Foundation, Small Information Technology Research (ITR), NSF ANI-0220001, Principal Investigator: A. Faragó (University of Texas at Dallas), October 2002 – September 2007.

15. Principal Investigator, "Routing Protocol Design Toolset for Wireless Ad Hoc Networks to Maximize Quality of Service," $20,000, Architecture Technology Corporation (ATC), Minneapolis, Minnesota, U.S.A., Co-Principal Investigator: M. Kulahci (Arizona State University), December 2006 – April 2007.

16. Principal Investigator, "Probe Placement in Wireless Networks," $54,465, Defence Science and Technology Organisation (DSTO), Australia, Co-Principal Investigator: C. J. Colbourn (Arizona State University), January 2005 – December 2006.

17. Co-Principal Investigator, "Meta-MAC Protocols: A New Dimension to Adaptation in Medium Access Control," $300,000, National Science Foundation, NSF ANI-0105985, Principal Investigator: A. Faragó (University of Texas at Dallas). September 2001 – August 2006.

18. Principal Investigator, "Modelling Cross-Layer Interaction to Achieve Power Savings in Connectionless Networks," $54,854, General Dynamics Decision Systems (GDDS), Scottsdale, Arizona, U.S.A., Co-Principal Investigator: C. J. Colbourn (Arizona State University). January 2004 – September 2004.

19. Principal Investigator, "Policy Manager for Next Generation (XG) Communications," $50,115, Raytheon Company, Falls Church, Virginia, U.S.A., January 2003 – August 2003.

20. Principal Investigator, "2002 ACM MobiCom Student Travel Support," $12,000, National Science Foundation, NSF ANI-0225521, June 2002 – November 2002.

21. Principal Investigator, "2001 ACM MobiHoc Symposium Support," $8000, National Science Foundation, NSF ANI-0125444, September 2001 – December 2001.

22. Principal Investigator, "Future Combat Systems Communications Modeling," $100,000, Raytheon Company, Plano, Texas, U.S.A., June 2001 – August 2002.

Student Theses and Dissertations Supervised

a. Masters Theses Awarded

1. Stephen A. Seidel, "Locating Arrays: Construction, Analysis, and Robustness," Fall 2018. (Winner outstanding CSE undergraduate award in Fall 2017.)

2. Matthew J. Mellott, "Smoothed Airtime Linear Tuning and Optimized REACT with Multi-hop Extensions," Spring 2018.

3. Arjun Magge, "Fixed Verse Generation using Neural Word Embeddings," Summer 2016.

4. Ray Robles, "Analysis and Design of Native File System Enhancements for Storage Class Memory," Spring 2015.

5. Janakarajan Natarajan, "Analysis and Visualization of OpenFlow Rule Conflicts," Spring 2016. (Co-advised with Professor D. Huang.)

6. Felipe Stall Rechia, "An Evaluation of SDN Based Network Virtualization Techniques," Spring 2016.

7. J. Matthew Welch, "Performance Optimization of Linux Networking for Latency-Sensitive Virtual Systems," Fall 2015.

8. Jinxuan Wu, "A Network Function Virtualization based Load Balancer for TCP," Spring 2015.

9. Nicole Ang, "Generating Mixed-Level Covering Arrays with $\lambda = 2$ and Test Prioritization," Spring 2015.

10. Ashkan Ghaffarinejad, "Comparing a Commercial and an SDN-Based Load Balancer in a Campus Network," Spring 2015.

11. Jeremy Wright, "Topic Chains for Determining Risk of Unauthorized Information Transfer," Fall 2014.

12. Eric Van Egmond, "Context-Aware Search Principles in Automated Learning Environments," Fall 2014. (Co-advised with Professor W. Burleson.)

13. Omid Alipourfard, "Infinite CacheFlow: A Caching Solution for Software Defined Networks," Spring 2014.

14. Sai Vishnu K. Byhravajosyula, "A New Backoff Strategy using Topological Persistence in Wireless Networks," Spring 2013.

15. Namrata Bapat, "Adapting Sensing and Transmission Times to Improve Secondary User Throughput," Spring 2012.

16. Shiraz Saleem, "An On-Demand Energy-Aware Routing Protocol for Ad Hoc Networks," Spring 2010.

17. Supreet S. Nagi, "Test-Bed Validation of Physical Layer Modeling in Network Simulation," Fall 2009.

18. Sanket Joshi, "A Shared Memory Approach for Invoking MATLAB Physical Layer Models from the ns-2 Network Simulator," Fall 2008. (Co-advised with Professor M. A. Janssen.)

19. Manasi Velhankar, "A Multi-Channel MAC Layer Protocol with Dynamic Bandwidth Allocation for Ad Hoc Networks," Spring 2007.

20. Bing Li, "An Evaluation of Contention and Scheduled MAC Protocols for Wireless Sensor Networks," Spring 2007.

21. Dmitri Lushnikov, "Rateless Forward Erasure Correction for Data Dissemination in Wireless Sensor Networks," Fall 2006.

22. Youngjin Kwon, "Analysis of Network Dynamics in Mobile Ad Hoc Networks," Fall 2006.

23. Michael R. Van Milligan, "An Energy Efficient Topology Transparent Medium Access Control Protocol," Summer 2006.

24. Kahkashan Shaukat, "Integrating OLSR into the MERIT Assessment Framework," Fall 2005.

25. Sitaram Shah, "A Protocol Interaction Study using Design and Analysis of Experiments," Fall 2004.

26. Minghao Cui, "Securing Dynamic Spectrum Use," Summer 2004.

27. Satish Doraiswamy, "An Extended MERIT Framework for Assessment of MANET Routing Protocols," Summer 2004.

28. Sruthi Yellamraju, "Erasure Codes as an Acknowledgement Scheme in Topology Transparent Scheduling," Spring 2004.

29. Suresh Ramkumar, "Adaptive Bandwidth Utilization," Fall 2003.

30. Amaresh Bikki, "Using Inverse Optimization to Model the Effect of Congestion on Routing Protocols in MANETs," Summer 2002.

31. Priya Narayan, "Evaluation of MANET Routing Protocols using the MERIT Framework," Spring 2002.

b. Doctoral Dissertations Awarded

1. Abraham N. Aldaco-Gastelum, "A Framework for Screening Experiments and Modelling in Complex Systems," Spring 2015.

2. Jonathan Lutz, "Scheduled Medium Access Control in Mobile Ad Hoc Networks," Fall 2013. (Co-advised with Professor C. J. Colbourn.)

3. Kahkashan Shaukat, "Statistical Monitoring and Control of Locally Proactive Routing Protocols in MANETs," Spring 2012.

4. Yuhan Moon, "Cooperative Multi-Channel MAC Protocols for Wireless Ad Hoc Networks," Fall 2010.

5. Suhaib A. Obeidat, "Cross-Layer Opportunistic Adaptation for Voice Communications over Wireless Ad Hoc Networks," Spring 2008.

6. Daniel W. McClary, "Modelling and Monitoring Ad Hoc Networks," Spring 2008.

7. Minghao Cui, "Contention Resolution with Power Control in Wireless Medium Access," Fall 2007.

8. Kiran K. Vadde, "Network Protocols: Interactions and their Statistical Optimization," Fall 2005.

9. Andrew D. Myers, "Hybrid Media Access Control Techniques for Ad Hoc Wireless Networks," Spring 2002. (Co-advised with Professor I. Chlamtac.) Winner of the Outstanding Doctoral Dissertation Award at the University of Texas at Dallas.

c. Post-Doctoral Fellows

1. Daniel Horsley, May 2010-February 2011. (Co-advised with Professor C. J. Colbourn.)

2. Yasmeen Ahktar, January 2019-December 2019. (Co-advised with Professor C. J. Colbourn.)

Professional and Scientific Service

a. Scientific and Professional Society Memberships

- Association for Computing Machinery (ACM)

- Institute of Electrical and Electronics Engineers (IEEE)

- American Society for Engineering Education (ASEE)

- The Institute for Operations Research and the Management Sciences (INFORMS)

b. Conference Activities

Conference activities are not up-to-date.

- Chair Steering Committee, *International Workshop on Computer and Networking Experimental Research using Testbeds* (CNERT), since 2015.

- Steering Committee, *International Conference on AdHoc Networks and Wireless* (AdHoc Now), since 2004.

- Co-Chair Student Travel Awards, *ACM Symposium on Mobile Ad Hoc Networking and Computing* (MobiHoc) 2019.

- Co-Chair Technical Program Committee, with Lucas Nussbaum (Universite de Lorraine), *3rd International Workshop on Computer and Networking Experimental Research Using Testbeds* (CNERT) in conjunction with *IEEE International Conference on Computer Communications* (INFOCOM) 2016.

- Host of the 24th GENI Engineering Conference (GEC-24) at Arizona State University, Tempe, Arizona, U.S.A., March 8-9, 2016.

- Chair, Organizing Committee, GENI Regional Workshop at Arizona State University, Tempe, Arizona, U.S.A., March 7, 2016.

- Registration Chair, *17th Annual ACM International Conference on Mobile Computing and Networking* (Mobicom) 2011.

- Co-Chair Technical Program Committee, with Brahim Bensaou (Hong Kong University of Science & Technology), *12th ACM/IEEE International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems* (MSWiM) 2009.

- General Chair, *6th IEEE/IFIP International Conference on Wireless On-demand Network Systems and Services* (WONS) 2009.

- Co-Chair Technical Program Committee, with Brahim Bensaou (Hong Kong University of Science & Technology), *11th ACM/IEEE International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems* (MSWiM) 2008.

- Co-Chair Technical Program Committee, with Roberto Baldoni (Università di Roma "La Sapienza," Italy), *1st International Conference on Autonomic Computing and Communication Systems* (Autonomics) 2007.

- Co-Chair Technical Program Committee, with Edgar Chávez (Universidad Michoacana, Mexico), *4th International Conference on Adhoc Networks and Wireless* (Ad Hoc Now) 2005.

- Finance Chair, *ACM Symposium on Mobile Ad Hoc Networking and Computing* (MobiHoc) 2003.

- Co-Chair Student Travel Awards, *8th Annual ACM International Conference on Mobile Computing and Networking* (MobiCom) 2002.

- Finance Co-Chair, *ACM Symposium on Mobile Ad Hoc Networking and Computing* (MobiHoc) 2001.

- Publications Co-Chair, *IEEE/ACM Workshop on Mobile Ad Hoc Networking and Computing* (MobiHoc) 2000.

- Technical Program Committee:

  - *ACM International Conference on Mobile Computing and Networking* (MobiCom) 2002–2007

- *ACM International Symposium on Mobile Ad Hoc Networking and Computing* (MobiHoc) 2006–2007

- *ACM International Workshop on Discrete Algorithms and Methods for Mobility* (DIAL-M) 2001

- *ACM International Workshop on Mobile Opportunistic Networking* (MobiOpp) 2007

- *ACM Joint Workshop on Foundations of Mobile Computing* (DIAL-M/POMC) 2004

- *ACM International Workshop on QoS and Security for Wireless and Mobile Networks* (Q2SWINET) 2006

- *ACM Workshop on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks* (PE-WASUN) 2005

- *IEEE Annual Joint Conference of the Computer and Communications Societies* (Infocom) 2005–2011

- *IEEE Global Telecommunications Conference* (Globecom) 2006–2009

- *IEEE International Conference on Communications* (ICC) 2006

- *IEEE International Conference on Distributed Computing in Sensor Systems* (DCOSS) 2006

- *IEEE International Conference on High Performance Computing* (HiPC) 2005

- *IEEE International Conference on Mobile Ad-hoc and Sensor Systems* (MASS) 2004–2007

- *IEEE International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks* (QShine) 2004

- *IEEE Annual Conference on Wireless On demand Network Systems and Services* (WONS) 2005–2006

- *IEEE International Conference on Wireless and Mobile Computing, Networking and Communications* (WiMob) 2006–2007

- *IEEE International Workshop on Mobile Vehicular Networks* (MoVeNet) 2007

- *IEEE Semiannual Vehicular Technology Conference* (VTC) Fall 2005, Spring 2008

- *IEEE Workshop on Autonomic and Opportunistic Communications* (AOC) 2007

- *IEEE/ACM Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services* (MobiQuitous) 2005–2006

- *IFIP-TC6 Networking Conference* (Networking) 2002, 2004–2007

- *IFIP Mobile and Wireless Communications Networks Conference* (MWCN) 2004, 2006

- *IFIP Annual Mediterranean Ad Hoc Networking Workshop* (MedHocNet) 2004, 2006

- *Microsoft International Conference on E-business and TElecommunication Networks* (ICETE) 2005

- *SCS International Symposium on Performance Evaluation of Computer and Telecommunication Systems* (SPECTS) 2005

- *Colloquium on Structural Information and Communication Complexity* (Sirocco) 2006

- *Grace Hopper Celebration of Women in Computing* (GHC) 2002

- *International Conference on Adhoc Networks and Wireless* (Ad Hoc Now) 2004–2009

- *International Conference on Integrated Internet Ad hoc and Sensor Networks* (InterSense) 2006

- *International Conference on Telecommunications and Multimedia* (TEMU) 2006

- *International Workshop on Wireless Mobile Multimedia* (WoWMoM) 1998–2000, 2005

- *International Workshop on Convergence of Heterogeneous Wireless Networks* (ConWin) 2005

- – *Workshop on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks* (WiOpt) 2003–2005

- Ad hoc Reviewer for:

  - – *IEEE Communications Magazine*
  - – *IEEE Instrumentation and Measurement Magazine*
  - – *IEEE Network Magazine*
  - – *IEEE Personal Communications Magazine*
  - – *IEEE Wireless Communications Magazine*
  - – *IEEE Annual Joint Conference of the Computer and Communications Societies* (Infocom) 2002–2004
  - – *IEEE Global Telecommunications Conference* (Globecom) 2004
  - – *IEEE International Conference on Communications* (ICC) 2002–2003
  - – *IEEE International Conference on Distributed Computing Systems* (ICDCS) 2003
  - – *IEEE International Workshop on Algorithms for Wireless, Mobile, Ad Hoc and Sensor Networks* (WMAN) 2003
  - – *ACM International Workshop on Mobility Management and Wireless Access* (MobiWac) 2004
  - – *European Wireless* 2002, 2005
  - – *International Conference on Computer Communications and Networks* (IC3N) 2001

c. Journal Referee Service

- Editorial Board, *Computer Networks* (Elsevier), since 2004

- Editorial Board, *Computer Communications* (Elsevier), since 2008

- Editorial Board, *International Journal of Communication Systems* (Wiley), 2007-2012.

- Reviewer for:

  - – *IEEE/ACM Transactions on Networking*
  - – *IEEE Journal on Selected Areas in Communications*
  - – *IEEE Transactions on Computers*
  - – *IEEE Transactions on Mobile Computing*
  - – *IEEE Transactions on Parallel and Distributed Systems*
  - – *IEEE Transactions on Pervasive and Mobile Computing*
  - – *IEEE Transactions on Vehicular Technology*
  - – *IEEE Transactions on Wireless Communications*
  - – *Elsevier, Computer Communications*
  - – *Elsevier, Computer Networks*
  - – *Elsevier, Journal of Parallel and Distributed Computing*
  - – *Elsevier, Journal on Wireless Networks*
  - – *Elsevier, Pervasive and Mobile Computing Journal*
  - – *ACM Computing Reviews*
  - – *ACM Mobile Computing and Communications Review*

- *ACM/Baltzer Wireless Networks*
- *ACM/Kluwer Mobile Networking and Applications*
- *Oxford University Press, The Computer Journal*
- *SCS Simulation: Transactions of the Society for Modeling and Simulation International*
- *Springer-Verlag, Algorithmica*
- *Wiley, Journal of Wireless Communications and Mobile Computing*
- *EURASIP, Journal on Wireless Communications and Networking*
- *Australasian Journal of Combinatorics*

d. Proposal Reviewer Service

- National Science Foundation, U.S.A.

- Natural Sciences and Engineering Research Council of Canada (NSERC), Canada.

- National Research Foundation, Singapore.

- Qatar Foundation, Qatar.

- Swiss National Science Foundation, Switzerland.

University Committee Service

a. University

- Working Group for Research Computing (WGRC), Arizona State University, since Fall 2015.

- Faculty Advisory Council, Eugene McDermott Scholars Program, University of Texas at Dallas. Spring 2001 – Summer 2002.

- Committee on Student Life, University of Texas at Dallas. Fall 2000 – Summer 2002.

b. College

- Diversity Committee, Ira A. Fulton School of Engineering, AY 2006–2007.

- Telecommunications Engineering Undergraduate Curriculum Committee, Erik Jonsson School of Engineering and Computer Science, University of Texas at Dallas. Summer 2001 – Summer 2002.

c. Department

- Chair, CSE Undergraduate Program Committee (UPC), 2014-2017.

- Administration and Planning (APC) Committee, 2014-2016.

- Personnel Committee, 2011.

- Lead of NSF Sponsored Integration of Parallel and Distributed Concepts into our Undergraduate Curriculum, 2011.

- Graduate Program Committee, AY 2005–2006, 2006–2007, 2007–2008 (Chair).

- Undergraduate Admissions Committee, AY 2004–2005.

- ACM Student Society Faculty Liaison, AY 2004–2005.

- Computing Resources Committee, AY 2003–2004.

- Publicity Committee, AY 2003–2004.

- Member of the Networks Technical Area Committee (Chair in AY 2004-2005) and the Operating Systems Technical Area Committee. Since Fall 2002.

- Teaching Assistantship Committee. AY 2002–2003.

- NSF 00-5 CISE Research Infrastructure Program, proposal committee. Summer 2001.

- CS Equipment committee. Fall 2000 – Fall 2001. Built CS technical support team after ECS split, planning for new ECS building, and support for network programming courses with cluster of 50 Netras.

- Volunteered to participate in WebCT (Web Course Tools) pilot program. Fall 2000. Helped encourage and facilitate its use by the CS department.

- CS Undergraduate curriculum committee. Fall 1999 – Summer 2002.

- CS Graduate student advising, including the formulation of degree plans, and the evaluation of waiver and transfer requests. Introduced the idea of degree planning seminars. Fall 1994 – Fall 1999.

- CS Curriculum subcommittee. Introduced a proposal to redefine the contents of the networks courses to form a two course sequence. Fall 1998.

- Committee responsible for defining the Fast-Track program, the possibility to earn both the B.S. and M.S. degrees in Computer Science in five years of study. Spring 1996.

- CS Curriculum subcommittee. Introduced a proposal to delete *Systems Programming* and redefine CS 6378 as a course in distributed operating systems. Spring 1995.

- CS Graduate admissions committee. February 1993 – July 1994.

- TARGET workshop co-chair. September 1992 – June 1993.

- CS Seminar coordinator. September 1990 – August 1992.

- CS Undergraduate curriculum review. June 1991 – May 1992.

- Other:
  - Invited to present to the *Women in Computer Science* group, Arizona State University, October 22, 2003.
  - Invited to panel on *Dissertation Writing* for Ph.D. students, organized by the Graduate Office, University of Texas at Dallas, July 16, 2002.
  - Invited speaker at the *Girl Scouts of Tejas Council's "Yes! You Can!" Leadership Conference for Girls*, February 25, 2000.

Evaluation of Instruction

a. Summary of Student Evaluations

Summary of student evaluations is not up to date.
CSE 310, CSE 430, and CSE 434 are required, core undergraduate courses.

Course Number	Semester Offered	Response Rate	Evaluation of Course	Evaluation of Instructor
CSE 430	Fall 2002	39/51	3.63	3.89
CSE 591	Fall 2002	17/20	3.94	4.36
CSE 430	Fall 2003	26/51	3.84	4.15
CSE 591	Spring 2004	6/8	4.34	4.69
CSE 430	Fall 2004	26/36	3.93	4.15
CSE 310	Spring 2005	21/24	3.48	3.51
CSE 591	Spring 2005	9/15	3.86	4.33
CSE 598	Spring 2005	4/4	4.46	4.44
CSE 591	Fall 2005	9/10	4.23	4.31
CSE 310	Spring 2006	22/43	3.74	4.07
CSE 310	Fall 2006	27/41	3.69	3.73
CSE 591	Fall 2006	27/36	3.71	4.16
CSE 430	Spring 2007	13/19	4.31	4.5
CSE 310	Fall 2007	28/38	3.68	3.49
CSE 434	Spring 2008	20/31	3.71	3.66
CSE 591	Spring 2008	4/4	4.83	4.83
CSE 430	Fall 2009	25/35	4.19	4.40
CSE 598	Fall 2009	11/11	4.79	4.87
CSE 534	Spring 2010	15/20	4.06	4.19
CSE 430	Spring 2011	23/35	3.84	4.23
CSE 534	Spring 2011	19/23	3.94	3.77
ASU 101	Fall 2011	10/19	3.94	4.59
ASU 101	Fall 2011	10/19	3.93	4.04
ASU 101	Fall 2011	7/19	3.50	3.81
ASU 101	Fall 2011	12/19	4.55	4.65
CSE 430	Fall 2011	3/7	4.67	4.67
CSE 430	Spring 2012	35/57	3.73	3.95
CSE 534	Spring 2012	22/31	4.04	4.11
		Average:	4.02	4.20

b. Undergraduate Projects Supervised

1. Vincent Miller, "Constructing Locating Arrays with Constraints using Constraint Satisfaction," Senior Honours Thesis, Spring 2019.

2. Nathaniel Flick, "Testbed Implementation of the Meta-MAC Protocol," Spring 2016. (Winner of the Outstanding CSE Student award in Spring 2016.)

3. Ryan Dougherty, "Exploration of Sea Ice Concentrations using Graph Metrics," Senior Honours Thesis, Spring 2014.

4. Chloë Wallace-Patterson, "Graph Analysis of Arctic Ice," Spring 2013.

5. David K. Weber, "Community Detection Utilizing Network Analysis," Senior Honours Thesis. NSF Research Experience for Undergraduates (REU). Spring 2008 – 2009.

6. Rumana Islam, NSF Research Experience for Undergraduates (REU), Spring 2007.

7. Shaher Al Marzougi, NSF Research Experience for Undergraduates (REU), Fall 2006.

8. Treavyonne Jeffries, NSF Research Experience for Undergraduates (REU), Spring 2005 – Spring 2006.

9. Bobby Janecka, 2002 Eugene McDermott Scholar, Summer Research Scholarship, Summer 2002.

10. Justin Appleby, 2001 Eugene McDermott Scholar, Summer Research Scholarship, Summer 2001.

11. Steven Blackburn, "A k-means Clustering Protocol for Ad Hoc Networks," Spring 2000.

12. Rodeen Talebi, "On-Demand Location-Aware Multicast (OLAM) for Ad Hoc Networks," Spring 1999.

13. James D. Hope II, "Data Security Over Computer Networks," Fall 1997.

14. Gwendolyn Hill, "Asynchronous Checkpointing for Distributed Systems," Fall 1997.

15. Michael K. Archer, "A Scalable External Sort for Distributed Operating Systems," Spring 1996.

16. Wayne S. Chan, Summer Research Internship, "The Evolution of Linear Cellular Automata and the Classification of their Limit Languages," Summer 1992.