

JOHN W. BYERS

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EDUCATION

Ph.D. Computer Science, University of California at Berkeley, December 1997.

B.A. Computer Science, Economics and Mathematics, Cornell University, May 1991.

RESEARCH INTERESTS

Algorithmic aspects of computer networking, e-commerce, and large-scale data management.

APPOINTMENTS

Associate Professor, Department of Computer Science, Boston University, September 2005 to present.

Associate Chair, Department of Computer Science, Boston University, September 2007 to August 2009.

Assistant Professor, Department of Computer Science, Boston University, January 1999 to August 2005.

Chief Scientist and Board Member, Adverplex, Inc., Cambridge, MA, August 2008 to present.
Adverplex spin-off, Autotegrity, Inc., was acquired by ADP in December 2011.

Founding Chief Technology Officer, Adverplex, Inc., Cambridge, MA, July 2005 to August 2008.
Adverplex portfolio company, CourseAdvisor, Inc., was acquired by the Washington Post in 2007.

Visiting Scientist, BBN Research, Cambridge, MA, September 2005 to February 2006.

Affiliated Scientist and Technical Advisory Board Member, Digital Fountain, Inc., Fremont, CA,
Sept 1998 (founding) - Sept 2004. Acquired by Qualcomm in 2007.

Postdoctoral Researcher, International Computer Science Institute, Berkeley, CA,
January to April 1998.

Course Instructor and Educational Consultant, Hewlett Packard Co., Palo Alto, CA,
July 1992 to August 1998.

Graduate Student Researcher, Computer Science Division of EECS, U.C. Berkeley and the International Computer Science Institute, Berkeley, CA, August 1993 to December 1997.

Visiting Researcher, Sandia National Labs, Albuquerque, NM, July 1996 to August 1996.

Graduate Student Instructor, Computer Science Division of EECS, U.C. Berkeley, Berkeley, CA,
August 1991 to May 1992.

HONORS AND AWARDS

2009 ACM SIGCOMM Test of Time Award, Awarded to our SIGCOMM '98 paper [37] in recognition as "an outstanding paper whose contents are still a vibrant and useful contribution today".

Best Paper Award, 20th IEEE Int'l Conference on Data Engineering (ICDE), April 2004.

National Science Foundation CAREER Award, Advanced Networking Research Division, 2001.

Recognized as one of 50 outstanding instructors in the College of Arts and Sciences at B.U., 2000.
Graduate Assistance in Areas of National Need (GAANN) Fellowship, U.C. Berkeley, 1994 - 1996.
Outstanding Graduate Student Instructor Award, CS Division of EECS, U.C. Berkeley, 1992.
California Regents Fellowship, U.C. Berkeley, 1992.
Phi Beta Kappa, Cornell University, 1991.

PATENTS

Generating High Weight Encoding Symbols Using a Basis, with Armin Haken, Michael Luby, Gavin Horn, Diane Hernek, and Michael Mitzenmacher. Issued as U.S. Patent #6411223, June 25, 2002.
On Demand Encoding with a Window, with Michael Luby, Gavin Horn, Jeffrey Persch, Armin Haken, and Michael Mitzenmacher. Issued as U.S. Patent #6486803, November 26, 2002.

FUNDED GRANTS AND EXTERNAL SUPPORT

NSF Special Projects - CISE (\$405,000 (BU portion), \$7.1M (total award size)) 9/1/10 – 8/31/13
 Principal Investigator, “FIA: Collaborative Research: A Content and Service Friendly Architecture with Intrinsic Security and Explicit Trust,” (CNS-1040800).

NSF Networking Technology and Systems (NeTS) (\$395,000) 9/1/05 – 8/31/09
 Principal Investigator, with co-PI A. Bestavros, “NeTS-NBD: Expressive Resource Specification and Discovery in Configurable Networks,” (CNS-0520166).

NSF Information Technology Research (\$1,665,497) 1/1/03 – 6/30/07
 Co-Principal Investigator, with A. Bestavros, A. Kfoury, I. Matta and R. West, “ITR: Internet Flows as First-Class Values: Support for Dynamic, Flexible Internet Services,” (ANI-0205294).

NSF Research Infrastructure Award (\$1,247,395) 8/1/02 – 7/31/07
 Senior Personnel, with A. Bestavros, M. Betke, S. Sclaroff, M. Crovella, G. Kollios, I. Matta, G. Itkis, A. Kfoury, L. Reyzin, R. West and H. Xi, “SENSORIUM: Research Infrastructure for Managing Spatio-Temporal Objects in Video Sensor Networks,” (EIA-0202067).

Sprint Advanced Technology Lab (\$80,000) 7/1/02
 Co-Principal Investigator with M. Crovella, A. Bestavros and I. Matta. Gift to fund BU-CS Networking Research.

U.S. - Israel Binational Science Foundation (\$44,850) 8/1/01 - 7/31/03
 Principal U.S. Investigator with D. Raz (Technion), “Global Throughput Maximization via Fair Local Resource Allocation,” (Proposal #2000182).

NSF Faculty Early Career Development Award (\$482,467) 6/1/01 - 5/31/06
 Principal Investigator, “CAREER: Flexible Strategies for Internet Content Distribution,” (ANI-0093296).

Cooperative Association for Internet Data Analysis (CAIDA) (equipment: 3 routers) 5/1/01
 Co-Principal Investigator with Ibrahim Matta and Gene Itkis, “Internet Teaching Laboratory.”

NSF Special Projects in Networking Award (\$1,210,768) 6/1/00 - 5/31/04
 Co-Principal Investigator with A. Bestavros and M. Crovella, “Diagnosis and Control of Network Variability at Massively Accessed Servers,” (ANI-9986397).

NSF Advanced Networking Award (\$11,494) 8/15/99 - 2/15/00
 Co-Principal Investigator with A. Bestavros and M. Crovella, “BU/NSF Workshop on Internet Measurement, Instrumentation and Characterization,” (ANI-9985484).

SELECTED PROFESSIONAL ACTIVITIES

General Program Co-Chair, ACM Internet Measurement Conference 2012, Boston, MA, November 2012.
Technical Program Committee Co-Chair, ACM SIGCOMM 2011, Toronto, Canada, August 2011.
Steering Committee, NetDB Workshop, 2008 - 2011.
ACM SIGCOMM Awards Chair, 2007 - 2008.
Associate Editor, IEEE/ACM Transactions on Networking, 2003-2006.
National Science Foundation Proposal Review Panelist. (Frequently from 2000-present).
Poster Session Co-Chair, ACM SENSYS 2005, San Diego, CA, November 2005.
General Chair, Fourth International Workshop on Networked Group Communication (NGC), Boston, MA, October 2002.
Co-organizer, Mini-Workshop on Internet Routing and Topology, part of the Large Scale Communication Networks program, Institute for Pure and Applied Mathematics (IPAM) at UCLA, March 2002.
Co-organizer, DIMACS Workshop on Internet and WWW Measurement, Mapping and Modeling, DIMACS Center @ Rutgers University, Piscataway, NJ, February 13-15, 2002.
Co-organizer, BU/NSF Workshop on Internet Measurement, Instrumentation, and Characterization, Boston University, Boston, MA, August 30, 1999.

MAJOR PROGRAM COMMITTEES

Technical Program Committee Member, ACM SIGCOMM (2003, 2004, 2006, 2011 (co-chair)).
Technical Program Committee Member, USENIX NSDI (2006, 2010, 2012).
Technical Program Committee Member, ACM CoNEXT (2010).
Technical Program Committee Member, IEEE Infocom (2005, 2009).
Technical Program Committee Member, IEEE NetDB Workshop (2005, 2006, 2008 (co-chair)).
Technical Program Committee Member, IEEE ICNP (2002, 2003, 2004, 2005).
Technical Program Committee Member, ACM PODC (2012).
Technical Program Committee Member, HotNets IV (2005).
Technical Program Committee Member, ACM SPAA (2004).
Technical Program Committee Member, IEEE OPENARCH (2003).
Technical Program Committee Member, ACM NOSSDAV (2002).
Technical Program Committee Member, ACM SIGMETRICS (2001).

TEACHING

Computer Networks. Redesigned and modernized the senior-level / introductory graduate-level networking course. Student projects include the design of a reliable, congestion-controlled file transfer protocol on top of UDP, and implementation of a link-state unicast and multicast routing protocol.

Algorithmic Aspects of Computer Networking. A new graduate course that considers recent and not-so-recent theoretical advances that have had a significant impact on computer networking in the past five years. Students read and discuss papers on both the theory and practical applications of topics such as Bloom filters, consistent hashing, information dispersal, and spectral methods.

A Critical Look at Network Protocols. A new graduate course that surveys fifty classic papers across computer networking and prepares Ph.D. students both to conduct research in networking and to write their doctoral written exam. Semester-long student projects in both this course and the one listed above have ultimately led to a number of student publications.

Introduction to Computer Science II (Data Structures). A second semester of the introductory sequence to Java covering the material in an introductory data structures course: linear data structures, sorting, searching, trees, and basic graph algorithms.

Software Job Skills. At Hewlett-Packard, I taught a full-time seventeen-week retraining program in Computer Science for engineers who typically had only a small amount of previous software exposure. In this whirlwind tour, we taught (bright and motivated) students the C programming language and data structures in about eight weeks, followed by brief, but in-depth samples of assembly language programming, operating systems, networking, software engineering, and web programming. The class culminated in a two week software engineering project involving all students.

REFEREED JOURNAL PUBLICATIONS

1. G. Smaragdakis, N. Laoutaris, V. Lekakis, A. Bestavros, J. W. Byers, and M. Roussopoulos. "Selfish Overlay Network Creation and Maintenance," *IEEE/ACM Transactions on Networking* 19(6), pp. 1624-37, December 2011.
2. G. Smaragdakis, N. Laoutaris, P. Michiardi, A. Bestavros, J. W. Byers and M. Roussopoulos. "Distributed Network Formation for n-way Broadcast Applications," *IEEE Transactions on Parallel and Distributed Systems*, 21(10), pp. 1427-41, October 2010.
3. J. Considine, M. Hadjieleftheriou, F. Li, J. W. Byers and G. Kollios, "Robust Approximate Aggregation in Sensor Data Management Systems," *ACM Transactions on Database Systems*, 34(1), pp. 1-35, April 2009.
4. K. Harfoush, A. Bestavros and J. W. Byers, "Measuring Capacity Bandwidth of Targeted Path Segments," *IEEE/ACM Transactions on Networking*, 17(1), pp. 80-92, February 2009.
5. J. W. Byers, G.-I. Kwon, M. Luby and M. Mitzenmacher, "Fine-Grained Layered Multicast using STAIR," *IEEE/ACM Transactions on Networking*, 14(1), pp. 81-93, March 2006.
6. J. W. Byers, J. Considine, G. Itkis, M. C. Cheng and A. Yeung, "Securing Bulk Content Almost for Free," *Computer Communications*, 29(3), Special Issue on Internet Security, pp. 280-290, February 2006.
7. A. Bestavros, J. W. Byers, and K. Harfoush, "Inference and Labeling of Metric-Induced Network Topologies," *IEEE Transactions on Parallel and Distributed Systems*, 16(11), pp. 1053-1065, November 2005.
8. J. W. Byers, J. Considine, M. Mitzenmacher, and S. Rost, "Informed Content Delivery Across Adaptive Overlay Networks," *IEEE/ACM Transactions on Networking*, 12(5), pp. 767-780, October 2004.
9. G.-I. Kwon and J. W. Byers, "Leveraging Single Rate Schemes in Multiple Rate Multicast Congestion Control Design," *IEEE Journal on Selected Areas in Communications, Special Issue on Design, Implementation and Analysis of Communication Protocols*, 22(10), pp. 1975-1986, December 2004.
10. Y. Bartal, J. W. Byers and D. Raz, "Fast, Distributed Approximation Algorithms for Positive Linear Programming with Applications to Flow Control," *SIAM Journal on Computing* 33(6), pp. 1261 - 1279, August 2004.
11. A. Lakhina, J. W. Byers, M. Crovella, and I. Matta, "On the Geographical Location of Internet Resources," *IEEE Journal on Selected Areas in Communications, Special Issue on Internet and WWW Measurement, Mapping and Modeling*, 21(6), pp. 934-948, August 2003.
12. M. Fayed, P. Krapivsky, J. W. Byers, M. Crovella, D. Finkel, and S. Redner, "On the Emergence of Highly Variable Distributions in the Autonomous System Topology," *ACM SIGCOMM Computer Communication Review (CCR)*, 33(2), pp. 41-50, April 2003.

13. J. W. Byers, M. Luby and M. Mitzenmacher, "A Digital Fountain Approach to Asynchronous Reliable Multicast," *IEEE Journal on Selected Areas in Communications, Special Issue on Network Support for Multicast Communications*, 20(8), pp. 1528-1540, October 2002.
14. J. W. Byers, G. Horn, M. Luby, M. Mitzenmacher and W. Shaver, "FLID-DL: Congestion Control for Layered Multicast," *IEEE Journal on Selected Areas in Communications, Special Issue on Network Support for Multicast Communications*, 20(8), pp. 1558-1570, October 2002.
15. S. Rost, J. W. Byers and A. Bestavros, "The Cyclone Server Architecture: Streamlining Delivery of Popular Content," *Computer Communications* 25(4), pp. 403-412, March 2002.
16. M. Adler, J. W. Byers and R. M. Karp, "Parallel Sorting with Limited Bandwidth," *SIAM Journal on Computing* 29(6), pp. 1997-2015, June 2000.
17. A. Medina, I. Matta and J. W. Byers, "On the Origin of Power Laws in Internet Topologies," *ACM SIGCOMM Computer Communication Review (CCR)* 30(2), pp. 18-28, April 2000.

REFEREED CONFERENCE PUBLICATIONS (TOP TIER)

18. D. Han, A. Anand, F. Dogar, B. Li, H. Lim, M. Machado, A. Mukundan, W. Wu, A. Akella, D. Andersen, J. W. Byers, S. Seshan and P. Steenkiste, "XIA: Efficient Support for Evolvable Internetworking," in *Proc. of 9th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, San Jose, CA, April 2012.
19. J. W. Byers, M. Mitzenmacher and G. Zervas, "Daily Deals: Prediction, Social Diffusion, and Reputational Ramifications," in *Proc. of the Fifth ACM International Conference on Web Search and Data Mining (WSDM)*, Seattle, WA, February 2012.
20. A. Anand, F. Dogar, D. Han, B. Li, H. Lim, M. Machado, W. Wu, A. Akella, D. Andersen, J. W. Byers, S. Seshan and P. Steenkiste, "XIA: An Architecture for an Evolvable and Trustworthy Internet," in *Proc. of ACM HotNets X*, Cambridge, MA, November 2011.
21. J. W. Byers, M. Mitzenmacher and G. Zervas, "Information Asymmetries in Pay-Per-Bid Auctions," in *Proc. of 11th ACM Conf. on Electronic Commerce (EC '10)*, Cambridge MA, June 2010.
22. J. W. Byers, M. Mitzenmacher and G. Zervas, "Adaptive Weighing Designs for Keyword Value Computation," in *Proc. of the Third ACM International Conference on Web Search and Data Mining (WSDM)*, New York, February 2010.
23. G. Smaragdakis, V. Lekakis, N. Laoutaris, A. Bestavros, J. W. Byers, and M. Roussopoulos, "EGO-IST: Overlay Routing using Selfish Neighbor Selection," in *Proceedings of ACM CoNEXT 2008*, Madrid, December 2008.
24. G. Smaragdakis, N. Laoutaris, P. Michiardi, A. Bestavros, J. W. Byers, and M. Roussopoulos, "Swarming on Optimized Graphs for n-way Broadcast," in *Proceedings of IEEE Infocom 2008, the 27th Annual Joint Conference of the IEEE Computer and Communication Societies*, Phoenix, May 2008.
25. N. Laoutaris, G. Smaragdakis, A. Bestavros, and J. W. Byers, "Implications of Selfish Neighbor Selection in Overlay Networks," in *Proceedings of IEEE Infocom 2007, the 26th Annual Joint Conference of the IEEE Computer and Communication Societies*, Anchorage, May 2007.
26. J. W. Byers, J. Considine and M. Mitzenmacher, "Geometric Generalizations of the Power of Two Choices," in *Proceedings of ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Barcelona, Spain, pp. 54-63, June 2004.
27. J. Considine, F. Li, G. Kollios and J. W. Byers, "Approximate Aggregation Techniques for Sensor Databases," in *Proceedings of the 20th IEEE Int'l Conference on Data Engineering (ICDE '04)*, Boston, MA, pp. 449-460. April 2004.
28. G.-I. Kwon and J. W. Byers, "ROMA: Reliable Overlay Multicast with Loosely Coupled TCP Connections," in *Proceedings of IEEE Infocom 2004, the 23rd Annual Joint Conference of the IEEE Computer and Communication Societies*, Hong Kong, March 2004.

29. K. Harfoush, A. Bestavros and J. W. Byers, "Measuring Bottleneck Bandwidth of Targeted Path Segments," in *Proceedings of IEEE Infocom 2003, the 22nd Annual Joint Conference of the IEEE Computer and Communication Societies*, San Francisco, CA, April 2003.
30. G.-I. Kwon and J. W. Byers, "Smooth Multirate Multicast Congestion Control," in *Proceedings of IEEE Infocom 2003, the 22nd Annual Joint Conference of the IEEE Computer and Communication Societies*, San Francisco, CA, April 2003.
31. A. Lakhina, J. W. Byers, M. Crovella and P. Xie, "Sampling Biases in IP Topology Measurements," in *Proceedings of IEEE Infocom 2003, the 22nd Annual Joint Conference of the IEEE Computer and Communication Societies*, San Francisco, CA, April 2003.
32. J. W. Byers, J. Considine, M. Mitzenmacher, and S. Rost, "Informed Content Delivery Across Adaptive Overlay Networks," in *Proceedings of ACM SIGCOMM 2002*, Pittsburgh, PA, pp. 47-60, August 2002.
33. A. Bestavros, J. W. Byers, and K. Harfoush, "Inference and Labeling of Metric-Induced Network Topologies," in *Proceedings of IEEE Infocom '02, the 21st Annual Joint Conference of the IEEE Computer and Communication Societies*, New York, NY, June 2002.
34. J. W. Byers, M. Luby and M. Mitzenmacher, "Fine-Grained Layered Multicast," in *Proceedings of IEEE Infocom '01, the 20th Annual Joint Conference of the IEEE Computer and Communication Societies*, Anchorage, AK, pp. 1143-1151, April 2001.
35. K. Harfoush, A. Bestavros and J. W. Byers, "Robust Identification of Shared Losses Using End-to-End Unicast Probes," in *Proceedings of the 8th IEEE International Conference on Network Protocols (ICNP)*, Osaka, Japan, pp. 22-33, November 2000.
36. J. W. Byers, M. Luby and M. Mitzenmacher, "Accessing Multiple Mirror Sites in Parallel: Using Tornado Codes to Speed Up Downloads," in *Proceedings of IEEE Infocom '99, the 18th Annual Joint Conference of the IEEE Computer and Communication Societies*, New York, NY, pp. 275-284, March 1999.
37. J. W. Byers, M. Luby, M. Mitzenmacher and A. Rege, "A Digital Fountain Approach to Reliable Distribution of Bulk Data," in *Proceedings of ACM SIGCOMM 1998*, Vancouver, Canada, pp. 56-67, September 1998. [Received the ACM SIGCOMM Test of Time Award in 2009.]
38. Y. Bartal, J. W. Byers and D. Raz. "Global Optimization Using Local Information with Applications to Flow Control," in *Proceedings of the 38th IEEE Symposium on Mathematical Foundations of Computer Science (FOCS)*, Miami Beach, FL, pp. 303-12, October 1997.
39. M. Adler, J. W. Byers and R. M. Karp, "Parallel Sorting with Limited Bandwidth," in *Proceedings of the 7th ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Santa Barbara, CA, pp. 129-36, July 1995.
40. M. Adler and J. W. Byers, " AT^2 Bounds for a Class of VLSI Problems and String Matching," in *Proceedings of the 6th ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Cape May, NJ, pp. 140-6, June 1994.

REFEREED WORKSHOP PAPERS

41. J. W. Byers, B. Heeringa, M. Mitzenmacher and G. Zervas, "Heapable Sequences and Subsequences," in *Proc. of the Eighth SIAM Workshop on Analytic Algorithmics and Combinatorics (ANALCO)*, San Francisco, CA, January 2011.
42. B. Bash, J. W. Byers and J. Considine, "Approximately Uniform Random Sampling in Sensor Networks," in *Proceedings of the 1st Workshop on Data Management in Sensor Networks (DMSN '04)*, Toronto, Canada, August 2004.
43. J. Considine, J. W. Byers and K. Mayer-Patel, "A Constraint Satisfaction Approach to Testbed Embedding Services," in *Proceedings of HotNets-II*, Cambridge, MA, November 2003. Published in *ACM SIGCOMM Computer Communications Review (CCR)* 34(1), pp. 137-142, January 2004.
44. J. W. Byers, J. Considine, and M. Mitzenmacher, "Simple Load Balancing for Distributed Hash Tables," in *Proceedings of 2nd Int'l Workshop on Peer-to-Peer Systems (IPTPS '03)*, Berkeley, CA, pp. 31-35, February 2003.
45. A. Lakhina, J. W. Byers, M. Crovella, and I. Matta, "On the Geographical Location of Internet Resources," in *Proceedings of the SIGCOMM Internet Measurement Workshop (IMW '02)*, Marseilles, France, pp. 249-250, November 2002.
46. M. Sharma and J. W. Byers, "How Well Does File Size Predict Wide-Area Transfer Time?" in *Proceedings of IEEE Global Internet Symposium '02*, Taipei, Taiwan, November 2002.
47. K. Harfoush, A. Bestavros, and J. W. Byers, "Periscope: An Active Measurement API," in *Proceedings of the Passive and Active Measurement Workshop (PAM 2002)*, Fort Collins, CO, March 2002.
48. J. W. Byers and G.-I. Kwon, "STAIR: Practical AIMD Multirate Multicast Congestion Control," in *Proceedings of the 3rd Int'l Workshop on Networked Group Communication (NGC 2001)*, LNCS Volume 2233, London, UK, pp. 100-112, November 2001.
49. P. Barford, A. Bestavros, J. W. Byers and M. Crovella, "On the Marginal Utility of Network Topology Measurements," in *Proceedings of the SIGCOMM Internet Measurement Workshop (IMW '01)*, San Francisco, CA, pp. 5-17, November 2001.
50. A. Medina, A. Lakhina, I. Matta and J. Byers, "BRITE: An Approach to Universal Topology Generation," In *Proceedings of Ninth IEEE MASCOTS '01 (Tools track)*, Cincinnati, OH, pp. 346-53, August 2001.
51. S. Rost, J. W. Byers and A. Bestavros, "The Cyclone Server Architecture: Streamlining Delivery of Popular Content," in *Proceedings of the 6th Int'l Workshop on Web Caching and Content Distribution (WCW)*, Boston, MA, pp. 147-163, June 2001.
52. J. W. Byers, M. Frumin, G. Horn, M. Luby, M. Mitzenmacher, A. Roetter and W. Shaver, "FLIDDL: Congestion Control for Layered Multicast," in *The 2nd International Workshop on Networked Group Communication (NGC 2000)*, Stanford, CA, pp. 71-81, November 2000.
53. J. W. Byers and G. Nasser, "Utility-Based Decision-Making in Wireless Sensor Networks," in *The IEEE International Workshop on Mobile and Ad Hoc Networks (MobiHOC)*, Boston, MA, pp. 143-144, August 2000.
54. Y. Bartal, J. W. Byers, M. Luby and D. Raz, "Feedback-Free Multicast Prefix Protocols," in *Proceedings of the 3rd Annual IEEE Symposium on Computers and Communication (ISCC)*, Athens, Greece, pp. 135-42, June 1998.
55. M. Adler, Y. Bartal, J. W. Byers, M. Luby and D. Raz, "A Modular Analysis of Network Transmission Protocols," in *Proceedings of the 5th Israeli Symposium on Theory of Computing and Systems (ISTCS)*, Ramat Gan, Israel, pp. 54-62, June 1997.

INVITED MAGAZINE AND CONFERENCE PAPERS

56. J. W. Byers and J. C. Mogul (editors), "Report on the ACM SIGCOMM '11 Conference," In *Computer and Communications Review (CCR)*, January 2012.
57. J. W. Byers and D. Raz, "Flow Allocation Games: Pricing, Equilibria and Fast Convergence," In *Proceedings of the 43rd Annual Allerton Conference on Communication, Control, and Computing*, Monticello, IL, September 2005.
58. G. Kollios, J. W. Byers, J. Considine, M. Hadjieleftheriou and F. Li "Robust Aggregation in Sensor Networks," *IEEE Data Engineering Bulletin* 28(1), pp. 26-32, March 2005.
59. J. W. Byers, "Flexible Transport Services for Emerging Opportunities in Internet Content Delivery," In *Proceedings of SPIE ITCOM, Conference on Scalability and Traffic Control in IP Networks*, Denver, CO, pp. 20-31, August 2001.
60. M. Adler, J. W. Byers and R. M. Karp, "Scheduling Parallel Communication: The h -relation Problem," in *Proceedings of the 20th International Symposium of Mathematical Foundations of Computer Science (MFCS)*, Prague, Czech Republic, pp. 1-20, August 1995.

SELECTED INVITED COLLOQUIA

Institutes: DIMACS, Institute for Mathematics and its Applications (IMA), Institute for Pure and Applied Mathematics (IPAM), Mathematical Sciences Research Institute (MSRI), Radcliffe Institute.

Industry: AT&T Laboratories, BBN Technologies, Bell Labs (Lucent), Intel Research, NEC Research Institute, Nortel Networks, Sprint Labs.

Universities: Boston University, Carnegie-Mellon University, Duke University, Harvard University, Université Pierre et Marie Curie, Laboratoire d'Informatique (LIP6), University of California at Berkeley, University of Maryland, University of Massachusetts at Amherst, University of North Carolina at Chapel Hill, University of Washington, University of Wisconsin, Williams College.

DOCTORAL STUDENTS ADVISED

Chong Wang, Ph.D., August 2012 [expected], "*Modeling Content Provider Networks from an Economic Perspective*," B.U. Dept. of Computer Science.

Georgios Zervas, Ph.D., August 2011, "*Data-Driven Analysis of Electronic Commerce Systems*," B.U. Dept. of Computer Science.

Gu-In Kwon, Ph.D., December 2004, "*Scalable Architectures for Multicast Content Distribution*," B.U. Dept. of Computer Science.

Jeffrey Considine, Ph.D., December 2004, "*Schedule Oblivious Data Management*," B.U. Dept. of Computer Science.

Khaled A. Harfoush, Ph.D., November 2001, "*A Framework for End-to-End Characterization of Metric-Induced Network Topologies*," B.U. Dept. of Computer Science. Co-advised by Azer Bestavros.

DOCTORAL STUDENTS, EXAMINING COMMITTEE MEMBER

Karim Mattar, Ph.D., December 2010, "*Policy Routing Dynamics: Theory and Applications*," B.U. Dept. of Computer Science. Committee chair.

Vijay Erramilli, Ph.D., December 2008, "*Forwarding in Mobile Opportunistic Networks*," B.U. Dept. of Computer Science. Third reader.

Georgios Smaragdakis, Ph.D., August 2008, "*Overlay Network Creation and Maintenance with Selfish Users*," B.U. Dept. of Computer Science. Third reader.

Hany Morcos, Ph.D., August 2008, "*Service Provisioning in Mobile Networks Through Coordinated Distributed Resource Management*," B.U. Dept. of Computer Science. Committee chair.

- Scott W. Russell**, Ph.D., December 2007, “*Communication and Query Privacy: Intrusion-Resilient Secure Channels and Private Database Queries*,” B.U. Dept. of Computer Science. Committee chair.
- John Rachlin**, Ph.D., November 2006, “*Multi-Node Graphs and Their Application to Bioinformatics*,” B.U. Dept. of Computer Science. Committee member.
- Vishal Sood**, Ph.D., August 2006, “*Interacting Particle Systems on Graphs*,” B.U. Dept. of Physics. Committee member.
- Shudong Jin**, Ph.D., May 2003, “*Protocol Support for Scalable and Efficient Media Data Streaming*,” B.U. Dept. of Computer Science. Second reader.
- Liang Guo**, Ph.D., April 2003, “*Size-Aware Scheduling of TCP Flows*,” B.U. Dept. of Computer Science. Third reader.
- Prithwish Basu**, Ph.D., April 2003, “*A Task-Based Approach for Modeling Distributed Applications on Mobile Ad Hoc Networks*,” B.U. Dept. of Electrical and Computer Engineering. Third reader.
- Alberto Medina**, Ph.D., March 2003, “*Practical Estimation of Internet Traffic Demands*,” B.U. Dept. of Computer Science. Second reader.
- Jun Liu**, Ph.D., August 2002, “*Characterizing Network Elements and Paths Using Packet Loss Behavior*,” B.U. Dept. of Computer Science. Third reader.
- Paul Barford**, Ph.D., June 2000, “*Modeling, Measurement and Performance of World Wide Web Transactions*,” B.U. Dept. of Computer Science. Second reader.

SUPERVISION OF POSTDOCTORAL STUDENTS AND VISITING RESEARCHERS

- Guido Marchetto**, Visiting Researcher, Boston University, 2008-2009.
- Nikos Laoutaris**, Marie Curie Postdoctoral Fellow, Boston University, 2005-2006.
- Boulat Bash**, Visiting Researcher, Boston University, 2004-2005.

SUPERVISION OF MASTERS AND SENIOR HONORS STUDENTS

- Masters:** John Peterson, Manish Sharma, Marwan Fayed, Stan Rost, Yuri Vaysman, Dmitriy Zavin, Igor Stubailo, Yazdan Shaghghi, Min Guo.
- Senior Honors Thesis:** Ryan Mahon, David Blumstein, Stan Rost.

UNIVERSITY SERVICE

- Associate Chair, Computer Science Department, August 2007 - August 2009.
- College of Arts & Sciences Academic Conduct Committee, 1999 - 2004.
- Chair, Computer Science Faculty Search Committee, 2001 and 2002.
- Member, Computer Science Faculty Search Committee, 2000, 2004, 2005, 2007, 2009.
- Computer Science Graduate Student Admissions Committee, 2001 - 2004, 2012.
- Computer Science Website Committee, 2010-present.
- Computer Science Space Committee, 2011-present.
- Computer Science Curriculum Committee, 2000.
- Computer Science Department Colloquium Coordinator, 1999 - 2000.

Boston, MA, February 13, 2012.