James Aspnes

November 29th, 2008.

Work address

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Degrees

- PhD (CS) 1992, Carnegie-Mellon University. Thesis title: *Wait-Free Consensus*. Advisor: Steven Rudich.
- SM (EECS) 1987, Massachusetts Institute of Technology.
- SB (Mathematics) 1987, Massachusetts Institute of Technology.

Experience

- Yale University. Assistant Professor of Computer Science, 1993–1998; Associate Professor of Computer Science (term), 1998–2001; Associate Professor of Computer Science (tenured), 2001–2005; Professor of Computer Science, 2005–.
- IBM Almaden Research Center. Visiting Scientist, 1992–1993.

Honors

- The Dylan Hixon '88 Prize for Teaching Excellence in the Natural Sciences. Awarded by Yale College, 2000.
- IBM Graduate Fellowship, 1991–1992.
- NSF Graduate Fellowship, 1987–1990.
- Phi Beta Kappa, 1987.

Grants

- NSF award CNS-0435201, "NeTS-NR: Design and Evaluation of Multihomed Networks," 2004–2008. (Co-PI, $349,987.)
- NSF award CNS-0305258, "Distributed Tree Infrastructure for Peer-to-Peer Systems," 2003–2006. (PI, $300,000.)
- NSF award CCR-0098078, "Fault-Tolerant Distributed Resource Location," 2001–2004. (PI, $200,940.)
- NSF award CCR-9820888, "Asynchronous Epidemic Algorithms," 1999–2002. (PI, $131,264.)
- NSF award CCR-9415410, "Parallel Fault Diagnosis," 1995–1997. (Co-PI, $122,318.)
- NSF award CCR-9410228, "RIA: The Competitive Analysis of Distributed Algorithms," 1994–1998. (PI, $78,568.)

Publications

Refereed journal publications

1. Fast randomized consensus using shared memory, with Maurice Herlihy. *Journal of Algorithms* 11(3):441–461, September 1990.

2. Time- and space-efficient randomized consensus. *Journal of Algorithms* 14(3):414–431, May 1993.

3. Counting networks, with Maurice Herlihy and Nir Shavit. *Journal of the Association for Computing Machinery* 41(5):1020–1048, September 1994.

4. The expressive power of voting polynomials, with Richard Beigel, Merrick Furst, and Steven Rudich. *Combinatorica* 14(2):1–14, 1994.

5. Randomized consensus in $O(n \log^2 n)$ operations per processor, with Orli Waarts. *SIAM Journal on Computing* 25(5):1024–1044, October 1996.

6. On-line routing of virtual circuits with applications to load balancing and machine scheduling, with Yossi Azar, Amos Fiat, Serge Plotkin, and Orli Waarts. *Journal of the Association for Computing Machinery* 44(3):486–504, May 1997.

7. Spreading rumors rapidly despite an adversary, with William Hurwood. *Journal of Algorithms* 26(2):386–411, February 1998.

8. Lower bounds for distributed coin-flipping and randomized consensus. *Journal of the Association for Computing Machinery* 45(3):415–450, May 1998.

9. Fairness in scheduling, with Miklos Ajtai, Moni Naor, Yuval Rabani, Leonard J. Schulman, and Orli Waarts. *Journal of Algorithms* 29(2):306–357, November, 1998. (SODA 1995 special issue.)

10. Fast deterministic consensus in a noisy environment. *Journal of Algorithms*, 45(1):16–39, October 2002.

11. A combinatorial toolbox for protein sequence design and landscape analysis in the Grand Canonical model, with Julia Hartling, Ming-Yang Kao, Junhyong Kim, and Gauri Shah. *Journal of Computational Biology*, 9(5):721–741, October 2002.

12. Randomized protocols for asynchronous consensus. *Distributed Computing*, 16(2–3):165–175, September 2003.

13. Compositional competitiveness for distributed algorithms, with Orli Waarts. *Journal of Algorithms*, 54(2):127–151, February 2005.

14. Relationships between broadcast and shared memory in reliable anonymous distributed systems, with Faith Ellen Fich and Eric Ruppert. *Distributed Computing*, 18(3):209–219, February 2006. (DISC 2004 special issue.)

15. Computation in networks of passively mobile finite-state sensors, with Dana Angluin, Zöe Diamadi, Michael J. Fischer, and René Peralta. *Distributed Computing*, 18(4):235–253, March 2006. (PODC 2004 special issue.)

16. Inoculation strategies for victims of viruses and the sum-of-squares partition problem, with Kevin Chang and Aleksandr Yampolskiy. *Journal of Computer and System Sciences*, 72(6):1077–1093, September 2006.

17. A theory of network localization, with T. Eren, D. K. Goldenberg, A. S. Morse, W. Whiteley, Y. R. Yang, B. D. O. Anderson, and P. N. Belhumeur. *IEEE Transactions on Mobile Computing*, 5(12):1663–1678, December 2006.

18. The computational power of population protocols, with Dana Angluin, David Eisenstat, and Eric Ruppert. *Distributed Computing* 20(4):279–304, November 2007. (PODC 2006 special issue.)

19. Skip graphs, with Gauri Shah. *ACM Transactions on Algorithms*, 3(4):37, November 2007.

20. Towards a theory of data entanglement, with Joan Feigenbaum, Aleksandr Yampolskiy, and Sheng Zhong. *Theoretical Computer Science*, 389(1–2):26–43, December 2007.

21. Learning large-alphabet and analog circuits with value injection queries, with Dana Angluin, Jiang Chen, and Lev Reyzin. *Machine Learning* 72(1–2):113–138, August 2008. (COLT 2007 special issue.)

22. A simple population protocol for fast robust approximate majority, with Dana Angluin and David Eisenstat. *Distributed Computing* 21(2):87–102, July 2008. (DISC 2007 special issue.)

23. Fast computation by population protocols with a leader, with Dana Angluin and David Eisenstat. *Distributed Computing* 21(3):183–199, September 2008.

24. Learning a circuit by injecting values, with Dana Angluin, Jiang Chen, and Yinghua Wu. *Journal of Computer and System Sciences* 75(1):60–77, January 2009. (Special Issue: Learning Theory 2006).

In press:

25. Self-stabilizing population protocols, with Dana Angluin, Michael J. Fischer, and Hong Jiang. To appear, *ACM Transactions on Autonomous and Adaptive Systems*, Special Issue on Stabilization, Safety, and Security of Distributed Systems.

26. The expansion and mixing time of skip graphs with applications, with Udi Wieder. To appear, *Distributed Computing*.

Submitted:

27. Greedy routing in peer-to-peer systems, with Zoë Diamadi and Gauri Shah. Submitted to *Distributed Computing*, February 2003. Last revised June 2006.

28. Spreading alerts quietly and the subgroup escape problem, with Zoë Diamadi, Kristian Gjøsteen, René Peralta, and Aleksandr Yampolskiy. Submitted to *Journal of Cryptology*, February 2006. Last revised October 2007.

29. Approximate shared-memory counting despite a strong adversary, with Keren Censor. Submitted to *ACM Transactions on Algorithms*, November 2008. (SODA 2009 special issue.)

Book chapters

1. Competitive analysis of distributed algorithms. In Amos Fiat, Gerhard Woeginger, eds., *Online Algorithms: The State of the Art*, Lecture Notes in Computer Science 1442, Springer-Verlag, 1998, pp. 118–146.

2. Opportunity-cost algorithms for combinatorial auctions, with Karhan Akcoglu, Bhaskar DasGupta, and Ming-Yang Kao. In Erricos John Kontoghiorghes, Berç Rustem, and Stavros Siokos, eds., *Applied Optimization 74: Computational Methods in Decision-Making, Economics and Finance*, Kluwer Academic Publishers, 2002, pp. 455–479.

3. Distributed data structures for P2P systems, with Gauri Shah. In *Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless and Peer-to-Peer Networks*, Jie Wu, ed., CRC Press, 2005, pages 685–700.

Invited papers

1. Competitive analysis of distributed algorithms. Invited survey paper, Dagstuhl-Seminar on On-line Algorithms, Schloss Dagstuhl, June 23–28, 1996.

2. Randomized protocols for asynchronous consensus. Invited survey paper, *Distributed Computing* PODC 20th anniversary issue, 16(2–3):165–175, September 2003.

Refereed conference publications

1. A theory of timestamp-based concurrency control for nested transactions, with Alan Fekete, Nancy Lynch, and William Weihl. *Fourteenth International Conference on Very Large Databases*, August 1988, pp. 431–444.

2. Time- and space-efficient randomized consensus. *Ninth ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing*, August 1990, pp. 325–331.

3. Wait-free synchronization in the asynchronous PRAM model, with Maurice Herlihy. *Second Annual ACM Symposium on Parallel Algorithms and Architectures*, July 1990, pp. 340–349.

4. Counting networks and multiprocessor coordination, with Maurice Herlihy and Nir Shavit. *Twenty-Third Annual ACM Symposium on Theory of Computing*, May 1991, pp. 348–358.

5. The expressive power of voting polynomials, with Richard Beigel, Merrick Furst, and Steven Rudich. *Twenty-Third Annual ACM Symposium on Theory of Computing*, May 1991, pp. 402–409.

6. Randomized consensus in $O(n \log^2 n)$ operations per processor, with Orli Waarts. *Thirty-Third IEEE Symposium on Foundations of Computer Science*, October 1992, pp. 137–146.

7. On-line load balancing with applications to machine scheduling and virtual circuit routing, with Yossi Azar, Amos Fiat, Serge Plotkin, and Orli Waarts. *Twenty-Fifth Annual ACM Symposium on Theory of Computing*, May 1993, pp. 623–631.

8. A theory of competitive analysis for distributed algorithms, with Miklos Ajtai, Cynthia Dwork, and Orli Waarts. *Thirty-Fifth IEEE Symposium on Foundations of Computer Science*, November 1994, pp. 401–411.

9. Fairness in scheduling, with Miklos Ajtai, Moni Naor, Yuval Rabani, Leonard J. Schulman, and Orli Waarts. *Sixth Annual ACM-SIAM Symposium on Discrete Algorithms*, January 1995, pp. 477–485.

10. A modular measure of competitive performance for distributed algorithms, with Orli Waarts. (Brief announcement). *Fourteenth Annual ACM Symposium on Principles of Distributed Computing*, August 1995, p. 252.

11. Modular competitiveness for distributed algorithms, with Orli Waarts. *Twenty-Eighth Annual ACM Symposium on Theory of Computing*, May 1996, pp. 237–246.

12. Spreading rumors rapidly despite an adversary, with William Hurwood. *Fifteenth Annual ACM Symposium on Principles of Distributed Computing*, May 1996, pp. 143–151.

13. Lower bounds for distributed coin-flipping and randomized consensus. *Twenty-Ninth Annual ACM Symposium on Theory of Computing*, May 1997, pp. 559–568.

14. Fast deterministic consensus in a noisy environment. *Nineteenth Annual ACM Symposium on Principles of Distributed Computing*, July 2000, pp. 299–309.

15. Towards understanding the predictability of stock markets from the perspective of computational complexity, with David F. Fischer, Michael J. Fischer, Ming-Yang Kao, and Alok Kumar. *Twelfth Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2001, pp. 745–754.

16. A combinatorial toolbox for protein sequence design and landscape analysis in the Grand Canonical model, with Julia Hartling, Ming-Yang Kao, Junhyong Kim, and Gauri Shah. *Twelfth Annual International Symposium on Algorithms and Computation*, Lecture Notes in Computer Science 2223, Springer-Verlag, December 2001, pp. 403–415.

17. Wait-free consensus with infinite arrivals, with Gauri Shah and Jatin Shah. *Thirty-Fourth Annual ACM Symposium on Theory of Computing*, May 2002, pp. 524–533.

18. Fault-tolerant routing in peer-to-peer systems, with Zoë Diamadi and Gauri Shah. *Twenty-First Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing*, July 2002, pp. 223–232.

19. Skip graphs, with Gauri Shah. *Fourteenth Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2003, pp. 384–393.

20. On the computational complexity of sensor network localization, with David Goldenberg and Yang Richard Yang. *Algorithmic Aspects of Wireless Sensor Networks: First International Workshop, ALGOSENSORS 2004, Turku, Finland, July 16, 2004. Proceedings.* Lecture Notes in Computer Science 3121, Springer-Verlag, July 2004, pp. 32–44.

21. Load balancing and locality in range-queriable data structures, with Jonathan Kirsch and Arvind Krishnamurthy. *Twenty-Third Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing*, July 2004, pp. 115–124.

22. Computation in networks of passively mobile finite-state sensors, with Dana Angluin, Zöe Diamadi, Michael J. Fischer, and René Peralta. *Twenty-Third Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing*, July 2004, pp. 290–299.

23. Towards a theory of data entanglement, with Joan Feigenbaum, Aleksandr Yampolskiy, and Sheng Zhong. *Ninth European Symposium on Research in Computer Security*, Lecture Notes in Computer Science 3192, Springer-Verlag, September 2004, pp. 177–192.

24. Relationships between broadcast and shared memory in reliable anonymous distributed systems, with Faith Ellen Fich and Eric Ruppert. *Proceedings of the Eighteenth International Symposium on Distributed Computing (DISC 2004)*, October 2004, pp. 260–274.

25. Inoculation strategies for victims of viruses and the sum-of-squares partition problem, with Kevin Chang and Aleksandr Yampolskiy. *Sixteenth Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2005, pp. 43–52.

26. Stably computable properties of network graphs, with Dana Angluin, Melody Chan, Michael J. Fischer, Hong Jiang, and René Peralta. In Viktor K. Prasanna, Sitharama Iyengar, Paul Spirakis, and Matt Welsh, eds., *Distributed Computing in Sensor Systems: First IEEE International Conference, DCOSS 2005, Marina del Rey, CA, USE, June/July, 2005, Proceedings.* Lecture Notes in Computer Science 3560, Springer-Verlag, June 2005, pp. 63–74.

27. Fast construction of overlay networks, with Dana Angluin, Jiang Chen, Yinghua Wu, and Yitong Yin. *Seventeenth ACM Symposium on Parallelism in Algorithms and Architectures*, July 2005, pp. 145–154.

28. The expansion and mixing time of skip graphs with applications, with Udi Wieder. *Seventeenth ACM Symposium on Parallelism in Algorithms and Architectures*, July 2005, pp. 126–134.

29. Spreading alerts quietly and the subgroup escape problem, with Zoë Diamadi, Kristian Gjøsteen, René Peralta, and Aleksandr Yampolskiy. *Advances in Cryptology — ASIACRYPT 2005: 11th International Conference on the Theory and Application of Cryptology and Information Security, Chennai, India, December 4–8, 2005. Proceedings.* Lecture Notes in Computer Science 3788, Springer-Verlag, December 2005, pp. 253–272.

30. On the power of anonymous one-way communication, with Dana Angluin, David Eisenstat, and Eric Ruppert. *Principles of Distributed Systems; 9th International Conference, OPODIS 2005; Pisa, Italy; December 2005; Revised Selected Papers.* Lecture Notes in Computer Science 3974, Springer-Verlag, December 2005, pp. 396–411.

31. Self-stabilizing population protocols, with Dana Angluin, Michael J. Fischer, and Hong Jiang. *Principles of Distributed Systems; 9th International Conference, OPODIS 2005; Pisa, Italy; December 2005; Revised Selected Papers.* Lecture Notes in Computer Science 3974, Springer-Verlag, December 2005, pp. 103–117.

32. Skip B-trees, with Ittai Abraham and Jian Yuan. *Principles of Distributed Systems; 9th International Conference, OPODIS 2005; Pisa, Italy; December 2005; Revised Selected Papers.* Lecture Notes in Computer Science 3974, Springer-Verlag, December 2005, pp. 366–380.

33. Learning a circuit by injecting values, with Dana Angluin, Jiang Chen, and Yinghua Wu. *Thirty-Eighth Annual ACM Symposium on Theory of Computing*, May 2006, pp. 584–593.

34. Stably computable predicates are semilinear, with Dana Angluin and David Eisenstat. *Twenty-Fifth Annual ACM Symposium on Principles of Distributed Computing*, July 2006, pp. 292–299.

35. Fast computation by population protocols with a leader, with Dana Angluin and David Eisenstat. *Distributed Computing, Twentieth International Symposium, DISC 2006, Stockholm, Sweden, September 2006, Proceedings*, September 2006, pp. 61–75.

36. Path-independent load balancing with unreliable machines, with Yang Richard Yang and Yitong Yin. *Eighteenth Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2007, pp. 814–823.

37. Learning large-alphabet and analog circuits with value injection queries, with Dana Angluin, Jiang Chen, and Lev Reyzin. *Twentieth Annual Conference on Learning Theory*, June 2007, pp. 51–65. (Best Student Paper award.)

38. A simple population protocol for fast robust approximate majority, with Dana Angluin and David Eisenstat. *Distributed Computing, 21st*

International Symposium, DISC 2007, Lemesos, Cyprus, September 24-26, 2007, Proceedings, September 2007, pp. 20–32.

39. $O(\log n)$-time overlay network construction from graphs with out-degree 1, with Yinghua Wu. *Principles of Distributed Systems; 11th International Conference, OPODIS 2007, Gaudaloupe, French West Indies, December 17–20, 2007, Proceedings.* Lecture Notes in Computer Science 4878. Springer-Verlag, December 2007, pp. 286–300.

40. Worm versus alert: Who wins in a battle for control of a large-scale network?, with Navin Rustagi and Jared Saia. *Principles of Distributed Systems; 11th International Conference, OPODIS 2007, Gaudaloupe, French West Indies, December 17–20, 2007, Proceedings.* Lecture Notes in Computer Science 4878. Springer-Verlag, December 2007, pp. 443–456.

41. Ranged hash functions and the price of churn, with Muli Safra and Yitong Yin. *Nineteenth Annual ACM-SIAM Symposium on Discrete Algorithms*, January 2008, pp. 1066–1075.

42. Learning acyclic probabilistic circuits using test paths, with Dana Angluin, Jiang Chen, David Eisenstat, and Lev Reyzin. *Twenty-First Annual Conference on Learning Theory*, July 2008, pp. 169–179.

43. Randomized consensus in expected $O(n \log n)$ individual work, with Hagit Attiya and Keren Censor. *Twenty-Seventh Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing*, August 2008, pp. 325–334.

44. Optimally learning social networks with activations and suppressions, with Dana Angluin and Lev Reyzin272–286. *Nineteenth International Conference on Algorithmic Learning Theory*, Lecture Notes in Computer Science 5254, Springer-Verlag, October 2008, pp. 272–286.

In press:

45. Approximate shared-memory counting despite a strong adversary, with Keren Censor. To appear, *ACM-SIAM Symposium on Discrete Algorithms (SODA09).*

Other publications

1. Eight open problems in distributed computing, with Costas Busch, Shlomi Dolev, Panagiota Fatourou, Chryssis Georgiou, Alex Shvartsman, Paul Spirakis, and Roger Wattenhofer. *Bulletin of the European Association for Theoretical Computer Science*, Distributed Computing Column, 90:109–126, October 2006.

2. An introduction to population protocols, with Eric Ruppert. *Bulletin of the European Association for Theoretical Computer Science*, Distributed Computing Column, 93:98–117, October 2007.

Position papers

1. Towards better definitions and measures of Internet security, with Joan Feigenbaum, Michael Mitzenmacher, and David Parkes. *Workshop on Large-Scale-Network Security and Deployment Obstacles*, Landsdowne VA, March 2003.

Collections edited

1. Marcos Kawazoe Aguilera and James Aspnes, eds. *Proceedings of the Twenty-Fourth Annual ACM Symposium on Principles of Distributed Computing, PODC 2005, Las Vegas, NV, USA, July 17-20, 2005.* Association for Computing Machinery, 2005.

2. Rida Bazzi and James Aspnes, eds. *Posters Presented at the Twenty-Fourth Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing.* Yale University Department of Computer Science Technical Report YALEU/DCS/TR-1328, July 2005.

3. Phillip B. Gibbons, Tarek Abdelzaher, James Aspnes, and Ramesh Rao, eds. *Distributed Computing in Sensor Systems, Second IEEE International Conference, DCOSS 2006, San Francisco, CA, USA, June 18-20, 2006, Proceedings.* Lecture Notes in Computer Science 4026, Springer-Verlag, June 2006.

4. James Aspnes, Christian Scheideler, Anish Arora, and Samuel Madden, eds. *Distributed Computing in Sensor Systems, Third IEEE International Conference, DCOSS 2007, Santa Fe, NM, USA, June 2007,*

Proceedings. Lecture Notes in Computer Science 4549, Springer-Verlag, June 2007.

Technical reports not published elsewhere

1. Urn automata, with Dana Angluin, Zoë Diamadi, Michael J. Fischer, and René Peralta. Yale University Department of Computer Science Technical Report YALEU/DCS/TR-1280, November 2003.

2. Exposing computationally-challenged Byzantine impostors, with Collin Jackson and Arvind Krishnamurthy. Yale University Department of Computer Science Technical Report YALEU/DCS/TR-1332, July 2005.

In preparation

1. Collisions lead to shallower decision trees, with Murat Demirbas, Ryan O'Donnell, Atri Rudra, and Steve Uurtamo.

2. Randomized load balancing by joining and splitting bins, with Yitong Yin.

Invited talks

1. "Competitive Analysis of Distributed Algorithms," Dagstuhl-Seminar on On-line Algorithms, Schloss Dagstuhl, June 27th, 1996.

2. "Lower Bounds for Coin-Flipping, Randomized Consensus, and Related Problems," University of Toronto, August 8th, 1996.

3. "Lower Bounds for Distributed Coin-Flipping and Randomized Consensus," Brown University, February 12th, 1997.

4. "Lower Bounds for Distributed Coin-Flipping and Randomized Consensus," 29th Columbia Theory Day, Columbia University, May 2nd, 1997.

5. "Lower Bounds for Distributed Coin-Flipping and Randomized Consensus," Workshop on Randomness and Computation in honor of Michael Rabin's 65th birthday, Hebrew University, June 16th, 1997.

6. "Fast Deterministic Consensus in a Noisy Environment," University of Connecticut, May 15th, 2000.

7. "Sensor Networks and the Future of Networked Computation," Workshop on Theory of Networked Computation, Princeton, New Jersey, February 16th, 2006.

8. "Distributed Systems Large and Small," Yale Science Forum, May 1st, 2006.

9. "Data Aggregation in Sensor Networks and Population Protocols," Massachusetts Institute of Technology, May 10th, 2006.

10. "Building a Peer-to-peer Network From Scratch," 4th DYNAMO Workshop, Stockholm, Sweden, September 17th, 2006.

11. "Population Protocols," Massachusetts Institute of Technology, November 28th, 2006.

12. "Population Protocols," Tufts University, November 29th, 2006.

13. "Population Protocols," Yale Discrete Mathematics and Theoretical Computer Science Seminar, January 29th, 2007.

Service

Computer Science Department committees and offices

- Colloquium Coordinator, 1996–1997.
- Comprehensive Examination Committee, 1994–1995.
- Computing Committee, 1998–2003, Spring 2004.
- Computing Committee Chair, Spring 2002.
- Curriculum 200X Committee, 2001–2002.
- Director of Undergraduate Studies, 2002–2003, Spring 2004.
- Faculty Recruiting Committee, 2002–2003, 2005–2008.
- Faculty Recruiting Committee Chair, 2005–2008.
- First-Year Coordinator, 1995–1997, Fall 2001.
- Graduate Admissions Committee, 1993–1995.
- MYTree Committee, 1995–1997.
- Senior Class Advisor, 2004-2005.
- Teaching and Curriculum Committee, 1999–2000, 2002–2003, Spring 2004.
- Teaching and Curriculum Committee Co-chair, 2002–2003, Spring 2004.
- Teaching Fellows Oversight Committee, 2002–2003, Spring 2004.

Yale committees

- NEASC 2009 Self-Study Library and Learning Resources Committee, 2008–2009.
- Select Program Advisory Committee, 2002–2003, Spring 2004.
- Undergraduate Admissions Committee, 2001, 2002, 2003, 2005, 2006.
- Yale Graduate School Ad Hoc Committee on English Language Testing and Training for International Graduate Students (Sleight Committee), 1997.

Public lectures

- "Security and Encryption: Barbed Wire Fences on the Electronic Frontier," Association of Yale Alumni seminar, June 1st, 1995.
- "Great Unsolved Problems in Computer Science," Yale Parents' Weekend lecture, October 20th, 2000.

Professional activities

- Editorial board member:
  - *Algorithmica*, 2004–,
  - *Distributed Computing*, 2008–2011.
- Guest editor: *Distributed Computing*, PODC 2005 special issue.
- Program committee chair:
  - ACM Symposium on Principles of Distributed Computing (PODC), 2005.
  - IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2007.
- Program committee vice chair: IEEE International Conference on Distributed Computing in Sensor Systems (Algorithms track), 2006.
- Program committee member:
  - ACM Symposium on Principles of Distributed Computing (PODC), 1996, 1997, 1999, 2003, 2004, 2005.
  - ACM Symposium on Theory of Computing (STOC), 2008.
  - IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2005, 2006, 2007, 2008, 2009.
  - IEEE International Parallel and Distributed Processing Symposium (IPDPS), 2009.
  - IEEE Symposium on Foundations of Computer Science (FOCS), 1999, 2001.

  - International Colloquium on Automata, Languages, and Programming (ICALP), 2007.
  - International Conference on Computing and Combinatorics (COCOON), 2009.
  - International Symposium on Distributed Computing (DISC), 2007, 2009.
  - International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), 2006, 2007.
  - International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSORS), 2009.
  - International Workshop on Peer-to-Peer Systems (IPTPS), 2007.
  - Workshop on Mobility in Peer-to-Peer Systems (MPPS), 2005.
- Steering committee member: ACM Symposium on Principles of Distributed Computing, 2004–2007.
- NSF review panel member.
- Referee for various conferences and journals.
- Reviewer for ACM Computing Reviews and Mathematical Reviews.

Memberships

- Association for Computing Machinery, SIGACT.

Teaching

Courses taught

- *Elements of Computing* (CPSC 110): Fall 1994, Fall 1995, Fall 2002.
- *A First Course in Programming* (CPSC 112): Spring 1994, Fall 1996.
- *A Second Course in Programming* (CPSC 200): Fall 1998 (as CPSC 210), Fall 1999.
- *Mathematical Tools for Computer Science* (CPSC 202): Fall 2004, Fall 2005, Fall 2007, Fall 2008.
- *Data Structures and Programming Techniques* (CPSC 223): Spring 2002, Spring 2005.
- *Design and Analysis of Algorithms* (CPSC 365): Spring 1997, Spring 1998, Spring 1999, Spring 2000, Spring 2001, Spring 2003, Spring 2004.
- *Operating Systems* (CPSC 422/522): Fall 2007.
- *Theory of Distributed Systems* (CPSC 425/525): Spring 1996, Fall 2001, Fall 2005.
- *Advanced Topics in Theory* (CPSC 461/561): Spring 1995.

Graduate students supervised

- Currently supervising:
  - Yinghua Wu (Ph.D. expected 2008).
  - Yitong Yin (Ph.D. expected 2009).
- Dissertation advisor for:
  - Gauri Shah (Ph.D. 2003).
  - Zoë Diamadi (Ph.D. 2004).
  - Aleksandr Yampolskiy (Ph.D. 2006).
- Dissertation committee member for:

- Martins Krikis (Ph.D. 1998).
- Bin Fu (Ph.D. 1998).
- Miklos Csuros (Ph.D. 2000).
- Petros Drineas (Ph.D. 2003).
- Sheng Zhong (Ph.D. 2004)
- Vijay Ramachandran (Ph.D. 2005).
- Jiang Chen (Ph.D. 2006).
- David Goldenberg (Ph.D. 2006).
- Hong Jiang (Ph.D. 2007).
- Ronny R. Dakdouk (Ph.D. expected 2009).
- Aaron Johnson (Ph.D. expected 2009).
- Felipe Saint-Jean (Ph.D. expected 2009).
- Lev Reyzin (Ph.D. expected 2010).

- Outside reader for:
  - Danny Hendler (Tel-Aviv University, Ph.D. 2004).
  - Ling Cheung (University of Nijmegen, Ph.D. 2006).
  - Geroge Giakkoupis (University of Toronto, Ph.D. expected 2008).
  - Yvonne Anne Pignolet (ETH Zurich, Ph.D. expected 2009).

Undergraduate research supervised

Senior projects (CPSC 490):

- Spring 1994: Paul Ohm, Nelson Tang.
- Fall 1994: Todd Kerpleman.
- Spring 1995: Jeremy Haines.
- Fall 1995: Mark Lindner, Scott McCaskill, Adam Miller, Ben Samman.
- Spring 1996: Matt Fates, Mark Huey, Ben Samman, Jack Winn.
- Fall 1996: Neveen Farag, David Sklar.

- Spring 1997: Jonathan Davis, Derek Tarsy.
- Spring 1998: Russell Atkind, William Bayliss, Robert Beckwith, Benjamin Parker.
- Fall 1998: Donald F. Fischer.
- Spring 1999: David Bookstaber, Alex Cuevas, Alia Hameed.
- Spring 2000: Tom Benjamin, Daniel Brambila, Matthew Hiller, Guy Penini, Nathaniel Vasquez.
- Spring 2001: Michael Chen, Robert Dugas, Jordan Golinkoff, David Sarno.
- Fall 2001: Michael Ambinder.
- Spring 2002: Michael Ambinder.
- Fall 2004: Jian Yuan.
- Spring 2005: Nathan Francis, Emmett Shear.
- Spring 2007: Michael Ruberry.
- Spring 2008: Yoel Grodentzik.

Directed reading (CPSC 480):

- Spring 1995: Jeremy Haines.
- Spring 2005: Faizah Mohamed Anuar.