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| ADDRESS    | <p>Mathematics Department<br/>         Massachusetts Institute of Technology<br/>         Cambridge, MA 02139<br/>         (617) 253-4992<br/>         sipser@mit.edu<br/>         math.mit.edu/~sipser</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PERSONAL   | <p>Born, September 17, 1954, Brooklyn, NY.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| EMPLOYMENT | <p><b>Massachusetts Institute of Technology</b><br/>         Dean, School of Science (7/14–8/20).<br/>         Interim Dean, School of Science (12/13–6/14).<br/>         Head, Mathematics Department (7/04–6/14).<br/>         Professor of Applied Mathematics (7/89–present).<br/>         Associate Professor of Applied Mathematics (7/83–6/89).<br/>         Assistant Professor of Applied Mathematics (9/80–6/83).<br/>         Research Associate, Laboratory for Computer Science (9/79–1/80).</p> <p><b>University of California, Berkeley</b><br/>         Associate Professor of EECS (7/85–6/86).</p> <p><b>IBM San Jose Research Laboratory</b><br/>         Research Staff Member (1/80–8/80).</p> <p><b>Other</b><br/>         Lady Davis Fellow, Hebrew University (2/88–6/88).</p>                                                                                                                                                                                                                                                                                                                                                                                                                  |
| EDUCATION  | <p><b>University of California, Berkeley</b><br/>         Ph.D. in Engineering (6/80)<br/>         Thesis: Nondeterminism and the Size of Two-Way Finite Automata.<br/>         Supervisor: Manuel Blum.</p> <p><b>Cornell University</b><br/>         B.A. in Mathematics (6/74)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| AWARDS     | <p>Test of Time Award, IEEE Symposium on Foundations of Computer Science, 2024.<br/>         Fellow of the Association for Computing Machinery, 2017.<br/>         Irwin Sizer Award for Most Significant Improvement to MIT Education, 2016.<br/>         MacVicar Faculty Fellowship Award, 2016.<br/>         Fellow of the American Mathematical Society, 2016.<br/>         Donner endowed Professorship, 2016.<br/>         Distinguished Alumni Award in Computer Science, EECS, UC Berkeley, 2016.<br/>         Symposium on Theoretical Computer Science on the Occasion of Michael Sipser's 60th Birthday, MIT, 2014.<br/>         Barton L. Weller endowed Professorship, 2012.<br/>         Fellow of the American Academy of Arts and Sciences, 2009.<br/>         MIT School of Science Student Advising Award, 2003.<br/>         MIT Graduate Student Council Teaching Award, 1984, 1989, and 1991.<br/>         Principal Lecturer, NSF-CBMS Regional Research Conference in the Mathematical Sciences, "Circuit Complexity," University of Chicago, 1989.<br/>         SIAM Lecturer, 1981–1982.<br/>         Friedman Mathematics Prize, 1978.<br/>         IBM Graduate Fellowship, 1977, 1978.</p> |

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| SELECTED<br>INVITED TALKS | <p>Kieval Lecture, “Beyond Computation: The P versus NP Question,” Department of Mathematics, Cornell University, 2025.</p> <p>Closing address, Boole–Shannon Symposium, MIT, 2016.</p> <p>Public lecture and panel discussion, “Beyond Computation: The P versus NP Question,” Simons Institute for the Theory of Computing and MSRI, Berkeley, 2014.</p> <p>Public Lecture, “Beyond Computation,” Clay Mathematics Institute, Harvard University, 2006.</p> <p>Invited speaker, “The History and Status of the P versus NP Question,” 24th Annual ACM Symposium on Theory of Computing, 1992.</p> <p>Distinguished Lecturer, Wesleyan University, 1992.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PROFESSIONAL<br>SERVICE   | <p><b>Program Committees</b></p> <p>1984 Symposium on Theory of Computing.</p> <p>1986 Symposium on Foundations of Computer Science.</p> <p>1986 Conference on Structure in Complexity Theory.</p> <p>1987 Symposium on Theory of Computing.</p> <p>1987 Conference on Structure in Complexity Theory.</p> <p>Chair, 1991 Symposium on Foundations of Computer Science.</p> <p>1995 Conference on Mathematical Foundations of Computer Science.</p> <p>1995 Israel Symposium on Theoretical Computer Science.</p> <p>1999 International Conference on Automata Languages and Programming (ICALP).</p> <p>2000 Foundations of Computer Science (FOCS).</p> <p>2007 Fundamentals of Computation Theory (FCT).</p> <p><b>Conference Organization</b></p> <p>Co-organizer, Conference on Parallel Computation, Chicago, 1985.</p> <p>Co-organizer, Conference on Complexity Theory, Bonn, 1987.</p> <p>Co-organizer, Workshop on Probabilistically Checkable Proofs, Rehovot, 1994.</p> <p>Co-organizer, Workshop on Computational Biology, Albuquerque, 1994.</p> <p><b>MIT Service</b></p> <p>Search Committee for the Vice Chancellor for Student Life (2026).</p> <p>Search Committee for the Director of Concourse (2026).</p> <p>Co-chair, Ad Hoc Committee on Academic Freedom and Campus Expression (2023–2026).</p> <p>Ad Hoc Working Group on Free Expression (2022).</p> <p>Head, Mathematics Department (7/04–6/14).</p> <p>School of Science Dean selection committee (2000).</p> <p>School of Science Committee on Neuroscience (1994).</p> <p>Chair, Theory of Computation Group (6/91–5/93).</p> <p>Chair, Mathematics department computation committee (9/86–6/14).</p> <p>Co-developer of 18C (Mathematics with Computer Science) undergraduate degree program (1984–85).</p> <p><b>Other</b></p> <p>Center for Excellence in Education (CEE) Board of Trustees (2007–present).</p> <p>Simons Foundation, Mathematics and Physical Sciences Scientific Advisory Board (2014–2017).</p> |
| PHD THESES<br>SUPERVISED  | <p><b>Doctorate</b></p> <ol style="list-style-type: none"> <li>1. Mary O’Connor, “Randomness within a computationally restricted environment,” MIT Math Dept., 1985. Formerly a research staff member at Bell Communications Research.</li> <li>2. David Barrington, “Bounded width branching programs,” MIT Math Dept., 1986. Professor Emeritus of Computer Science, U. Mass., Amherst.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

3. Ravi Boppana, “Lower bounds for monotone circuits and formulas,” MIT EECS Dept., 1986. Formerly Associate Professor of Computer Science, New York University, currently Research Affiliate, MIT Mathematics.
4. Jonathan Buss, “Relativized alternation and space-bounded computation,” MIT Math Dept., 1986. Formerly Associate Professor of Computer Science, University of Waterloo.
5. Lance Fortnow, “Complexity-theoretic aspects of interactive proof systems,” MIT Math Dept., 1989. Professor of Computer Science, Illinois Institute of Technology.
6. Aditi Dhagat, “Searching in the presence of errors,” MIT Math Dept., 1991. Formerly Assistant Professor of Computer Science, University of Milwaukee, currently with Deloitte & Touche Llp.
7. Michelangelo Grigni, “Structure in monotone complexity,” MIT Math Dept., 1991. Associate Professor of Computer Science, Emory University.
8. Leonard Schulman, “Communication in the presence of noise,” MIT Math. Dept., 1992. Professor of Computer Science, Caltech.
9. David Gillman, “Hidden Markov chains: convergence rates and the complexity of inference,” MIT Math. Dept., 1993. Member of the technical staff at Akamai Technologies.
10. Yiqun Yin, “Teaching, learning, and exploration,” MIT Math Dept., 1994. Formerly member of the technical staff at RSA Data Security, currently an independent security consultant.
11. Dan Spielman, “Computationally Efficient Error-Correcting Codes and Holographic Proofs,” MIT Math. Dept., 1995. Sterling Professor of Computer Science at Yale University.
12. Marcos Kiwi, “Probabilistically Checkable Proofs and the Testing of Hadamard-like Codes,” MIT Math. Dept., 1996. Professor at the Departamento de Ingeniería Matemática of the Facultad de Ciencias Físicas y Matemáticas of the Universidad de Chile.
13. Alexander Russell, “Efficient holographic proofs,” MIT Math. Dept., 1996. Professor of Computer Science and Engineering at the University of Connecticut.
14. Ravi Sundaram, “Interactive proof system variants and approximation algorithms for optical networks,” MIT EECS Dept., 1996. Professor of Computer Science, Northeastern University.
15. Andrew Chou, “Static replication of exotic options,” MIT EECS Dept., 1997.
16. Sofya Raskhodnikova, “Property testing: theory and applications,” MIT EECS Dept., 2003. Professor of Computer Science, Boston University.
17. Christos Kapoutsis, “Algorithms and Lower Bounds in finite Automata Size Complexity,” MIT EECS Dept., 2006. Formerly postdoctoral researcher at ETH Zurich, currently at Carnegie Mellon University in Qatar.
18. Andrew V. Sutherland, “Order Computations in Generic Groups,” MIT Math Dept., 2007. Senior Research Scientist, MIT Mathematics.
19. Zachary Remscrem, “Algebraic Methods in Pseudorandomness and Circuit Complexity,” MIT EECS Dept., 2016.

#### **Masters**

1. Ravi Boppana, 1984.
2. Stephen Trilling, 1985.
3. John Rompel, 1988.
4. Anthony Kam, 1992.
5. Sofya Raskhodnikova, 1999.
6. Christos Kapoutsis, 2004.

#### **Bachelors**

1. Steven Jonowsky, 1984.
2. Wan Lik Lee, 1985.
3. Deborah Utle, 1985.

**Book**

M. Sipser, *Introduction to the Theory of Computation*, PWS Publishers, 1997. Second edition, Course Technology Publisher, 2005. Third edition, Cengage Learning, 2012. Translated into Chinese, Greek, Italian, Japanese, Persian, Polish, and Portuguese.

**Research Papers**

1. Z. Reimschuessel and M. Sipser, “AC<sup>0</sup> Pseudorandomness of Natural Operations,” *Electronic Colloquium on Computational Complexity*, TR13-088, 2013.
2. Farhi, E., Goldstone, J., Gutmann, S., Sipser, M., A Limit on the Speed of Quantum Computation in Determining Parity, *Phys. Rev. Lett.* 81, 5442–5444, 1998.
3. Farhi, E., Goldstone, J., Gutmann, S., Sipser, M., A Limit on the Speed of Quantum Computation for Insertion into an Ordered List, arXiv:quant-ph/9812057, 1998.
4. Farhi, E., Goldstone, J., Gutmann, S., Sipser, M., How many functions can be distinguished with k quantum queries?, *Phys. Rev. A* 60, 4331–4333, 1999.
5. Farhi, E., Goldstone, J., Gutmann, S., Sipser, M., Invariant Quantum Algorithms for Insertion into an Ordered List, arXiv:quant-ph/9901059, 1999.
6. Farhi, E., Goldstone, J., Gutmann, S., Sipser, M., Quantum computation by adiabatic evolution, arXiv:quant-ph/0001106, 2000.
7. M. Sipser and D. Spielman, “Expander codes,” Proceedings of the 35th Annual Symposium on Foundations of Computer Science, 1994. *IEEE Transactions on Information Theory*, 42(6):1710–1722, 1996.
8. D. Gillman and M. Sipser, “Inference and Minimization of Hidden Markov Chains,” Proceedings of the 7th Annual Conference on Learning Theory, 1994.
9. M.Y. Kao, Y. Ma, M. Sipser, Y. Yin, “Optimal Constructions of Hybrid Algorithms,” Proceeding of the 5th Annual Symposium on Discrete Algorithms, 1994. Also in *Journal of Algorithms*, Vol. 29, 1998, pp. 142–164.
10. C.H. Papadimitriou, O. Goldreich, A. Wigderson, A. Razborov, M. Sipser, “The Future of Computational Complexity Theory: Part I,” *SIGACT News*, Vol. 27, No. 3, 1996, pp. 6–12.
11. M. Sipser, “The History and Status of the P versus NP Question,” Proceedings of the 24th Annual ACM Symposium on Theory of Computing, 1992.
12. M. Grigni and M. Sipser, “Monotone Separation of Logspace from NC<sup>1</sup>,” Proceedings of the 6th Annual Symposium on Structure in Complexity Theory, 1991. Also in *Journal of Computer and System Sciences*, Vol. 50, 1995, pp. 433–437, as “Monotone Separation of Logarithmic Space from Logarithmic Depth.”
13. M. Grigni and M. Sipser, “Monotone Complexity,” Proceedings of the London Mathematics Society conference on circuit complexity, 1990.
14. M. Sipser, “Alexander Razborov” (essay on the 1990 Rolf Nevanlinna Prize recipient), in “ICM-90,” *Notices of the American Mathematical Society*, Vol. 37, No. 9, 1990, pp. 1214–1216.
15. B. Awerbuch, M. Sipser, “Dynamic Networks are as Fast as Static Networks,” Proceedings of the 29th Annual Symposium on Foundations of Computer Science, 1988.
16. L. Fortnow, M. Sipser, “Are There Interactive Protocols for Co-NP Languages?,” *Information Processing Letters*, Vol. 28, 1988, pp. 249–251.
17. L. Fortnow, J. Rompel, M. Sipser, “On the Power of Multi-Prover Interactive Protocols,” Proceedings of the Third Annual Conference on Structure in Complexity Theory, 1988, pp. 156–161. Also in *Theoretical Computer Science*, Vol. 134, 1994, pp. 545–557. Errata in Proceedings of the 5th Annual Conference on Structure in Complexity Theory, 1990, pp. 318–319.
18. L. Fortnow, M. Sipser, “Interactive Proof Systems with a Log Space Verifier,” unpublished manuscript, 1988.
19. L. Fortnow, M. Sipser, “Probabilistic Computation and Linear Time,” Proceedings of the 21st Annual ACM Symposium on Theory of Computing, 1989, pp. 148–156.

20. L. Fortnow, M. Sipser, "Retraction of Probabilistic Computation and Linear Time," Proceedings of the 29th Annual ACM Symposium on Theory of Computing, 1997, p. 750.
21. R.B. Boppana, M. Sipser, "The Complexity of Finite Functions," *Handbook of Theoretical Computer Science, Volume A: Algorithms and Complexity*, Elsevier, 1990, pp. 757–804.
22. M. Fürer, O. Goldreich, Y. Mansour, M. Sipser, S. Zachos, "On Completeness and Soundness in Interactive Proof Systems," *Advances in Computing Research*, Vol. 5, JAI Press, 1989, pp. 429–442.
23. O. Goldreich, Y. Mansour, M. Sipser, "Interactive Proof Systems: Provers that Never Fail and Random Selection," Proceedings of the 28th Annual Conference on Foundations of Computer Science, 1987.
24. M. Sipser, "Expanders, Randomness, or Time versus Space," Proceedings of Conference on Structure in Complexity, 1986. Also in *Journal of Computer and System Sciences*, Vol. 36, 1988, pp. 379–383.
25. S. Goldwasser and M. Sipser, "Private Coins versus Public Coins in Interactive Proof Systems," Proceedings of the 18th Annual Symposium on the Theory of Computing, 1986. Also in *Advances in Computing Research*, Vol. 5, JAI Press, 1989, pp. 73–90.
26. T. Bui, S. Chaudhuri, T. Leighton and M. Sipser, "Graph Bisection Algorithms with Good Average Case Behavior," Proceedings of the 25th Annual Conference on Foundations of Computer Science, 1984. Also in *Combinatorica*, Vol. 7, 1987, pp. 171–191.
27. A. Goldberg and M. Sipser, "Compression and Ranking," Proceedings of the 17th Annual ACM Symposium on Theory of Computing, 1985, also in *SIAM Journal on Computing*, 1991, pp. 524–536.
28. M. Sipser, "A Topological View of Some Problems in Complexity Theory," Proceedings of the Conference on Mathematical Foundations of Computer Science, 1984. Invited paper. Also in *Colloquia Mathematica Societatis Janos Bolyai*, Vol. 44, 1984, pp. 387–391.
29. M. Sipser, "Borel Sets and Circuit Complexity," Proceedings of the 15th Annual ACM Symposium on Theory of Computing, 1983.
30. M. Sipser, "A Complexity Theoretic Approach to Randomness," Proceedings of the 15th Annual ACM Symposium on Theory of Computing, 1983.
31. M. Sipser, "On Relativization and the Existence of Complete Sets," Proceedings of the International Colloquium on Automata, Languages and Programming, 1982.
32. C.H. Papadimitriou and M. Sipser, "Communication Complexity," Proceedings of the 14th Annual ACM Symposium on the Theory of Computing, 1982. Also in *Journal of Computer and System Sciences*, Vol. 28, 1984, pp. 260–269.
33. B. Simons and M. Sipser, "On Scheduling Unit-Length Jobs with Multiple Release Time/Deadline Intervals," *Operations Research*, Vol. 32, 1984, pp. 80–88.
34. R.M. Karp and M. Sipser, "Maximum Matchings in Sparse Random Graphs," Proceedings of the 22nd Annual Conference on the Foundations of Computer Science, 1981.
35. M. Furst, J. Saxe, and M. Sipser, "Parity, Circuits, and the Polynomial-Time Hierarchy," Proceedings of the 22nd Annual Conference on the Foundations of Computer Science, 1981. Also in *Math. Systems Theory*, Vol. 17, 1984, pp. 13–27.
36. H. Katseff and M. Sipser, "Several Results in Program Size Complexity," Proceedings of the 18th Annual Conference on Foundations of Computer Science, 1977, also in *Theoretical Computer Science*, Vol. 15, 1981.
37. M. Sipser, "Lower Bounds on the Size of Sweeping Automata," Proceedings of the 11th Annual ACM Symposium on the Theory of Computing, 1979, also in *Journal of Computer and System Sciences*, Vol. 21, 1980, invited paper.
38. M. Sipser, "Halting Space-bounded Computations," Proceedings of the 19th Annual Symposium on Foundations of Computer Science, 1978, also in *Theoretical Computer Science*, Vol. 10, 1980.

39. D. Lichtenstein and M. Sipser, "Go is PSPACE Hard," Proceedings of the 19th Annual Conference on Foundations of Computer Science, 1978, also in *Journal of the Association for Computing Machinery*, Vol. 27, 1980.
40. W. Sakoda and M. Sipser, "Nondeterminism and the Size of Two-way Finite Automata," Proceedings of the 10th Annual ACM Symposium on the Theory of Computing, 1978.