J Strother Moore

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Employment

Admiral B. R. Inman Centennial Chair Emeritus in Computing Theory, 2015–present
Department Chair, 2001–2009
  Department of Computer Science,
  University of Texas at Austin.

Admiral B. R. Inman Centennial Chair of Computing Theory, 1997–2015
Department Chair, 2001–2009
  Department of Computer Science,
  University of Texas at Austin.

Chief Scientist, 1987–1996
  1987–1999: Founder and Member of Board of Directors;
  Computational Logic, Inc.,
  1717 West Sixth Street, Suite 290, Austin, TX.

Gottesman Family Centennial Professor, 1985–1988
  Associate Professor, 1981–84;
  Department of Computer Sciences,
  University of Texas at Austin.

Staff Scientist, 1981
  Senior Research Mathematician, 1979–81
  Research Mathematician, 1976–78
  Computer Science Laboratory
  SRI International, Menlo Park, CA.

Research Mathematician, 1973–76
  Computer Science Laboratory,
  Xerox Palo Alto Research Center, Palo Alto, CA.

Research Fellow, 1973
  Programmer, 1971–72
  Department of Computational Logic,
  University of Edinburgh, Edinburgh, Scotland.

Education

Ph.D. Computational Logic, University of Edinburgh, Edinburgh, Scotland, 1973 (Supervisor: R. M. Burstall).

Bachelor of Science, Mathematics, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1970.

Honors

- Corresponding Fellow, Royal Society of Edinburgh (RSE), 2015

- VSTTE 2012 Verification Competition, Gold Medal to Team ACL2 (with Jared Davis (Centaur Technology), Matt Kaufmann (University of Texas at Austin), and Sol Swords (Centaur Technology)), 2012

- Lecturer, Marktoberdorf International Summer School, 2008

- Fellow, National Academy of Engineering (NAE), 2007

- Fellow, Association for Computing Machinery (ACM), 2006

- ACM Software System Award (with R. S. Boyer and M. Kaufmann for the Boyer-Moore theorem prover), 2005

- Lecturer, Marktoberdorf International Summer School, 2004

- Lecturer, Marktoberdorf International Summer School, 2002

- Herbrand Award, Conference on Automated Deduction (with R. S. Boyer), 1999

- Fellow, Association for the Advancement of Artificial Intelligence (AAAI), 1991

- Current Prize in Automatic Theorem Proving by the American Mathematical Society (with R. S. Boyer), 1991

- Lecturer, Marktoberdorf International Summer School, 1988

- John McCarthy Prize for Program Verification (with R. S. Boyer), 1983.

- Member of the Editorial Board of the *Journal of Automated Reasoning* and *Formal Methods in System Design* (retired 2017).

- IBM Chaire Internationale d'Informatique, Universite de Liege, Belgium, 1980.

Books

A8. *Computer-Aided Reasoning: An Approach*, with M. Kaufmann and P. Manolios, Kluwer Academic Publishers, Boston, 2000.

A7. *Computer-Aided Reasoning: ACL2 Case Studies*, with M. Kaufmann and P. Manolios (Eds.), Kluwer Academic Publishers, Boston, 2000.

A6. *A Computational Logic Handbook*, with R. S. Boyer, Academic Press, London, 1997. Second Edition.

A5. *Piton: A Mechanically Verified Assembly Level Language*, Kluwer Academic Publishers, Dordrecht, The Netherlands 1996.

A4. *Special Issue on System Verification, Journal of Automated Reasoning*, (Ed.), **5**, 4, 1989.

A3. *A Computational Logic Handbook*, with R. S. Boyer, Academic Press, New York, 1988.

A2. *The Correctness Problem in Computer Science*, with R. S. Boyer (Eds.), Academic Press, London, 1981.

A1. *A Computational Logic*, with R. S. Boyer, Academic Press, New York, 1979.

Reviewed Articles

B72. "Industrial Hardware and Software Verification with ACL2," with W. A. Hunt, Jr., M. Kaufmann, and A. Slobodova, *Verified Trustworthy Software Systems* (P. Gardner, P. O'Hearn, M. Gordon, G. Morrisett and F. B. Schneider, Eds), *Philosophical Transactions A*, Royal Society Publishing, **374**, DOI 10.1098/rsta.2015.0399, September, 2017.

B71. "Computing Verified Machine Address Bounds during Symbolic Exploration of Code," *Provably Correct Systems*, (J. Bowen, H. Langmaack and E.-R. Olderog, Eds), Springer, pp. 151–172, 2017.

B70. "Machines Reasoning About Machines: 2015," *Automated Technology for Verification and Analysis: 13th International Symposium, ATVA 2015, Shanghai, China, October 12-15, 2015, Proceedings*, (B. Finkbeiner, G. Pu, and L. Zhang, Eds), ISBN 978-3-319-24953-7, DOI 10.1007/978-3-319-24953-7_2, Springer International Publishing, pp. 4–13, 2015.

B69. "Stateman: Using Metafunctions to Manage Large Terms Representing Machine States," *Proceedings of the 13th International Workshop on the ACL2 Theorem Prover*, (M. Kaufmann and D. Rager, Eds), ETPCS, **192**, pp 90–109, doi: 10.4204/EPTCS.192.8, 2015.

B68. "Well-Formedness Guarantees for ACL2 Metafunctions and Clause Processors," with M. Kaufmann, in *Proceedings of International Workshop on Design and Implementation of Formal Tools and Systems (DIFTS) 2015*, (M. K. Ganai and C. Wang, Eds), Austin, TX, Sep, 2015.

B67. "Rough Diamond: An Extension of Equivalence-Based Rewriting," with M. Kaufmann, in *Proceedings of ITP 2014: 5th International Conference on Interactive Theorem Proving*, (G. Klein and R. Gamboa, Eds.), LNAI 8558, pp. 537-542, 2014.

B66. "Proof Pearl: Proving a Simple Von Neumann Machine Turing Complete," in *Proceedings of ITP 2014: 5th International Conference on Interactive Theorem Proving*, (G. Klein and R. Gamboa, Eds.), LNAI 8558, pp. 406-420, 2014.

B65. "Enhancements to ACL2 in Versions 6.2, 6.3, and 6.4," with M. Kaufmann, *Proceedings of the Twelfth International Workshop on the ACL2 Theorem Prover and its Applications*, (F. Verbeek and J. Schmaltz, Eds.), EPTCS 152, 2014.

B64. "How Do I Do That with ACL2? Recent Enhancements to ACL2," with M. Kaufmann. *ACL2 Workshop, 2011*, Austin, TX, Nov, 2011.

B63. "ACL2 and Its Applications to Digital System Verification," with M. Kaufmann, in *Design and Verification of Microprocessor Systems for High-Assurance Applications*, (ed. D. Hardin), Springer, pp. 1–21, 2010.

B62. "Automatically Computing Functional Instantiations," in *Proceedings of the ACL2 Workshop 2009*, (eds. D. Russinoff and S. Ray), Boston, MA, 2009.

B61. "A Mechanically Checked Proof of the Correctness of the Boyer-Moore Fast String Searching Algorithm," with Matt Martinez, in *Engineering Methods and Tools for Software Safety and Security*, M. Broy, W. Sitou, and T. Hoare (eds), IOS Press, pp 267–284, 2009.

B60. "An ACL2 Tutorial," with M. Kaufmann, *Proceedings of Theorem Proving on Higher Order Logics*, Lecture Notes in Computer Science, **5170**, Springer Berlin, Heidelberg, 2008.

B59. "Rewriting with Equivalence Relations in ACL2," with B. Brock and M. Kaufmann, *Journal of Automated Reasoning*, **40**(4), pp. 293–306, May, 2008.

B58. "Efficient Execution in an Automated Reasoning Environment," with D. Greve, M. Kaufmann, P. Manolios, S. Ray, J. L. Ruiz-Reina, R. Sumners, D. Vroon, and M. Wilding, *Journal of Functional Programming*, **17**(01), pp. 15–46, January, 2008.

B57a. "A Mechanized Program Verifier," *Verified Software: Theories, Tools, Experiments*, (B. Meyer and J. Woodcock, editors), Springer LNCS 4171, pp. 268-276, 2008.

B57. "A Mechanical Analysis of Program Verification Strategies," with S. Ray, W. A. Hunt, J. Matthews, *Journal of Automated Reasoning*, **40**(4), pp. 245–269, May, 2008.

B56. "Integrating CCG analysis into ACL2," with M. Kaufmann, P. Manolios, J S. Moore, and D. Vroon, *Proceedings of The Eighth International Workshop on Termination* (part of *FLoC 2006*), pp. 64–68, 2006.

B55. "Integrating External Deduction Tools with ACL2," with M. Kaufmann, S. Ray, and E. Reeber, *Journal of Applied Logic* (Special Issue: *Empirically Successful Computerized Reasoning*), **7**(1), pp. 3–25, March, 2009. Also published online (DOI 10.1016/j.jal.2007.07.002). Preliminary version in: *Proceedings of the 6th International Workshop on the Implementation of Logics (IWIL 2006)* (C. Benzmller, B. Fischer, and G. Sutcliffe, editors), CEUR Workshop Proceedings Vol. 212, Phnom Penh, Cambodia, pp. 7-26, November 2006. http://ceur-ws.org/Vol-212/.

B54. "Verification Condition Generation via Theorem Proving," with J. Matthews, S. Ray, and D. Vroon, *Proceedings of the 13th International Conference on Logic for Programming (LPAR 2006)*, M. Hermann and A. Voronkov (Eds.), Springer-Verlag, November, 2006.

B53. "Double Rewriting for Equivalential Reasoning in ACL2," with M. Kaufmann, *Proceedings of the ACL2 Workshop 2006* P. Manolios and M. Wilding (Eds.), ACM Digital Library, August, 2006.

B52. "Proof Pearl: Dijkstra's Shortest Path Algorithm Verified with ACL2," with Q. Zhang, *TPHOLS 2005*, J. Hurd and T. Melham (Eds.), Springer Lecture Notes in Computer Science, **3603**, pp. 373–384, 2005.

B51. "Meta Reasoning in ACL2," with W. A. Hunt, M. Kaufmann, R. B. Krug, E. W. Smith, *TPHOLS 2005*, J. Hurd and T. Melham (Eds.), Springer Lecture Notes in Computer Science, **3603**, pp. 163–178, 2005.

B50. "Java Program Verification via a JVM Deep Embedding in ACL2," with H. Liu, *TPHOLS 2004*, K. Slind, A. Bunker, and G. Gopalakrishnan (Eds.), Springer Lecture Notes in Computer Science, **3223**, pp. 184–200, 2004.

B49. "Some Key Research Problems in Automated Theorem Proving for Hardware and Software Verification," with M. Kaufmann, *Spanish Royal Academy of Science (RACSAM)*, **98**(1), pp. 181–196, 2004.

B48. "Proof Styles in Operational Semantics," with S. Ray, *Formal Methods in Computer-Aided Design (FMCAD 2004)*, A. J. Hu and A. K. Martin (Eds.), Springer Lecture Notes in Computer Science, **3312**, pp. 67–81, 2004.

B47. "Inductive Assertions and Operational Semantics," *CHARME 2003*, D. Geist (Ed.), Springer Verlag LNCS 2860, pp. 289–303, 2003.

B46. "Linear and Non-Linear Arithmetic in ACL2," with R. Krug and W. A. Hunt, *CHARME 2003*, D. Geist (Ed.), Springer Verlag LNCS 2860, pp. 319–333, 2003.

B45. "Memory Taggings and Dynamic Data Structures," *ACL2 Workshop 2003*, M. Kaufmann, W. A. Hunt, Jr., and J S. Moore (Eds.), Boulder, Co., July, 2003.

B44. "Executable JVM Model for Analytical Reasoning: A Study," with H. Liu, *ACM SIGPLAN 2003 Workshop on Interpreters, Virtual Machines and Emulators*, San Diego, CA, June 12, 2003.

B43. "Proving Theorems about Java and the JVM with ACL2," in *Models, Algebras and Logic of Engineering Software*, M. Broy and M. Pizka (Eds.), IOS Press, Amsterdam, pp. 227–290, 2003.

B42. "The Apprentice Challenge," with G. Porter, *ACM TOPLAS*, **24**(3), pp. 1–24, May, 2002.

B41. "A Computational Logic for Applicative Common LISP," with M. Kaufmann, *A Companion to Philosophical Logic*, D. Jacquette (Ed.), Blackwell Publishing, Oxford, pp. 724–741, 2002.

B40. "A Grand Challenge Proposal for Formal Methods: A Verified Stack," *Formal Methods at the Crossroads: from Panacea to Foundational Support, 10th Anniversary Colloquium of UNU/IIST, the International Institute for Software Technology of The United Nations University*, B. K. Aichernig and T. Maibaum (Eds.), Springer-Verlag LNCS 2757, pp. 161–172, 2003.

B39. "On the Desirability of Mechanizing Calculational Proofs," with P. Manolios, *Information Processing Letters*, **77**(2-4), February, 2001, pp. 173–179.

B38. "Finite Set Theory in ACL2," in *Proceedings of TPHOLs 2001*, R. J. Boulton and P. B. Jackson (Eds.), Springer-Verlag LNCS 2152, pp. 313–328, 2001.

B37. "Partial Functions in ACL2," with P. Manolios, *Journal of Automated Reasoning*, Kluwer, 31(2), pp. 107-127, 2003.

B36. "An Executable Formal Java Virtual Machine Thread Model," with G. Porter, *Proceedings of Java Virtual Machine Research and Technology Symposium,* USENIX, April, 2001.

B35. "Rewriting for Symbolic Execution of State Machine Models," in *Proceedings of CAV 01*, G. Berry, H. Comon, and A. Finkel (Eds.), Springer-Verlag LNCS 2102, pp. 411-422, 2001.

B34. "Towards a Mechanically Checked Theory of Computation: The ACL2 Project," in J. Minker, ed., *Logic and Artificial Intelligence*, pp. 545–575, Kluwer, 2000.

B33. "Single-Threaded Objects in ACL2," with R. S. Boyer, S. Krishnamurthi, C. R. Ramakrishnan (Eds.) *PADL 2002*, LNCS 2257, pp. 9–27, 2002.

B32. "Proving Theorems about Java-like Byte Code," in E.-R. Olderog and B. Steffen (Eds.) *Correct System Design – Recent Insights and Advances*, LNCS 1710, pp. 139–162, 1999.

B31. "Structured Theory Development for a Mechanized Logic," with M. Kaufmann, *Journal of Automated Reasoning*, **26**(2), pp. 161–203, 2001.

B30. "A Mechanically Checked Proof of a Comparator Sort Algorithm," with B. Brock, in C. A. R. Hoare, D. Harel, and M. Broy (Eds.) *Engineering Theories of Software Intensive Systems*, Springer NATO Science Series, **195**, pp. 141–175, 2005.

B29. "A Mechanically Checked Proof of a Multiprocessor Result via a Uniprocessor View," *Formal Methods in System Design*, **14**(2), March, 1999, pp. 213–228.

B28. "Symbolic Simulation: An ACL2 Approach," in G. Gopalakrishnan and P. Windley (Eds.) *Proceedings of the Second International Conference on Formal Methods in Computer-Aided Design (FMCAD'98)*, Springer-Verlag LNCS 1522, pp. 334–350, November, 1998.

B27. "An ACL2 Proof of Write Invalidate Cache Coherence," in A. J. Hu and M. Y. Vardi (Eds.) *Computed Aided Verification: 10th International Conference, CAV '98*, Springer-Verlag LNCS 1427, pp. 29–38, 1998.

B26. "Mechanized Formal Reasoning about Programs and Computing Machines," with R. S. Boyer, in R. Veroff (Ed.) *Automated Reasoning and Its Applications: Essays in Honor of Larry Wos*, MIT Press, 1996.

B25. "ACL2 Theorems about Commercial Microprocessors," with B. Brock and M. Kaufmann. In M. Srivas and A. Camilleri (Eds.) *Proceedings of Formal Methods in Computer-Aided Design (FMCAD'96)*, Springer-Verlag, pp. 275–293, 1996.

B24. "A Mechanically Checked Proof of the Correctness of the Kernel of the $AMD5_K86$ Floating-Point Division Algorithm," with T. Lynch and M. Kaufmann, *IEEE Trans. Comp.*, **47**(9), pp. 913–926, Sep. 1998.

B23. "An Industrial Strength Theorem Prover for a Logic Based on Common Lisp," with M. Kaufmann, *IEEE Transactions on Software Engineering*, **23**(4), April, 1997, pp. 203–213.

B22. "The Boyer-Moore Theorem Prover and Its Interactive Enhancement," with R. S. Boyer and M. Kaufmann. In *Computers and Mathematics with Applications*, **5**(2) (1995) 27–62.

B21. "A Formal Model of Asynchronous Communication and Its Use in Mechanically Verifying a Biphase Mark Protocol." In *Formal Aspects of Computing*, **6**(1) (1994) 60–91.

B20. "Introduction to the OBDD Algorithm for the ATP Community." In *Journal of Automated Reasoning*, **6**(1) (1994) 33–45.

B19. "Functional Instantiation in First Order Logic," with R. S. Boyer, D. M. Goldschlag, and M. Kaufmann. In V. Lifschitz, (Ed.), *Artificial Intelligence and Mathematical Theory of Computation: Papers in Honor of John McCarthy*, Academic Press, 1991, pp. 7–26.

B18. "MJRTY – A Fast Majority Vote Algorithm," with R. S. Boyer. In R. S. Boyer (Ed.), *Automated Reasoning: Essays in Honor of Woody Bledsoe, Automated Reasoning Series*, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1991, pp. 105–117.

B17. "The Use of a Formal Simulator to Verify a Simple Real Time Control Program," with R. S. Boyer and M. W. Green, in W. H. J. Feijen, A. J. M. van Gasteren, D. Gries, and J. Misra" (Eds.), *Beauty is Our Business: A Birthday Salute to Edsger W. Dijkstra*, Springer-Verlag Texts and Monographs in Computer Science, 1990, pp. 54–66.

B16. "Special Issue on System Verification," with W. R. Bevier, W. A. Hunt, and W. D. Young. *Journal of Automated Reasoning*, **5**(4) (1989) 461–492.

B15. "A Mechanically Verified Language Implementation." In *Journal of Automated Reasoning*, **5**(4) (1989) 461–492.

B14. "The Addition of Bounded Quantification and Partial Functions to A Computational Logic and Its Theorem Prover," with R. S. Boyer. In *Journal of Automated Reasoning*, **4**(2) (1988) 117–172.

B13. "Integrating Decision Procedures into Heuristic Theorem Provers: A Case Study of Linear Arithmetic", with R. S. Boyer. In *Machine Intelligence*, **11**, Oxford University Press, 1988.

B12. "Program Verification," with R. S. Boyer. *Journal of Automated Reasoning*, **1**(1) (1985) 17–23.

B11. "A Mechanical Proof of the Turing Completeness of PURE LISP," with R. S. Boyer. In W. W. Bledsoe and D. W. Loveland, (Eds.), *Contemporary Mathematics*, **29**, *Automated Theorem Proving: After 25 Years*, American Mathematical Society, Providence, Rhode Island, 1984, pp. 133–168.

B10. "Proof-Checking, Theorem-Proving, and Program Verification," with R. S. Boyer. In W. W. Bledsoe and D. W. Loveland, (Eds.), *Contemporary Mathematics*, **29**, *Automated Theorem Proving: After 25 Years*, American Mathematical Society, Providence, Rhode Island, 1984, pp. 119–132.

B9. "A Mechanical Proof of the Unsolvability of the Halting Problem," with R. S. Boyer. *Journal of the Association for Computing Machinery*, **31**(3) (1984) 441–458.

B8. "Proof Checking the RSA Public Key Encryption Algorithm," with R. S. Boyer. *American Mathematical Monthly*, **91**(3) (1984) 181–189.

B7. "A Verification Condition Generator for FORTRAN," with R. S. Boyer. In R. S. Boyer and J S. Moore, (Eds.), *The Correctness Problem in Computer Science*, Academic Press, London, 1981.

B6. "Metafunctions: Proving Them Correct and Using Them Efficiently as New Proof Procedures," with R. S. Boyer. In R. S. Boyer and J S. Moore, (Eds.), *The Correctness Problem in Computer Science*, Academic Press, London, 1981.

B5. "A Mechanical Proof of the Termination of Takeuchi's Function," *Information Processing Letters*, **9**(4) (1979) 176–181.

B4. "A Fast String Searching Algorithm," with R. S. Boyer. *Communications of the Association for Computing Machinery*, **20**(10) (1977) 762–772.

B3. "Introducing Iteration into the Pure LISP Theorem-Prover." *IEEE Transactions on Software Engineering*, **SE-1**(3) (1975) 328–338.

B2. "Proving Theorems about LISP Functions," with R. S. Boyer. *Journal of the Association for Computing Machinery*, **22**(1) (1975) 129–144.

B1. "The Sharing of Structure in Theorem-proving Programs," with R. S. Boyer. In B. Meltzer and D. Michie, (Eds.), *Machine Intelligence*, **7**, Edinburgh University Press, 1972, pp. 101–116.

Other Publications

C26 "Automation of Mathematical Induction as part of the History of Logic," with C. P. Wirth, unpublished, pp. 1–108, January, 2014.

C25 "Strategic Information Technology Advisory Committee, Report and Recommendations," http://www.utexas.edu/vp/it/sitac/Final SITAC Report - 20August 2009.pdf

C24 "Final Report of the Gender Equity Task Force," Provost's Task Force on Gender Equity, J Strother Moore and Gretchen Ritter (co-chairs), University of Texas at Austin, November, 2008.

C23 "String Searching over Small Alphabets," with M. Sustik, TR-07-62, Department of Computer Sciences, University of Texas at Austin, December, 2007.

C22 "Maintaining the ACL2 Theorem Proving System," with M. Kaufmann. Invited talk. *Proceedings of the FLoC'06 Workshop on Empirically Successful Computerized Reasoning, 3rd International Joint Conference on Automated Reasoning*, (G. Sutcliffe, R. Schmidt, and S. Schulz, eds.), CEUR Workshop Proceedings, **192**, Seattle, August, 2006.

C21. "Interactive Symbolic Visualization of Semi-automatic Theorem Proving," with C. Bajaj, S. Khandelwal, V. Siddavanahalli, Technical Report TR-03-37, Department of Computer Sciences, University of Texas at Austin, August 2003.

C20. "University-Industry Sponsored Research Agreements," with L. Snyder and P. A. Bernstein, CRA Best Practices Memo, July, 2003.

C19. "Model Language for Patent and Licensing Agreements for Industrially Sponsored University Research in Information Technology," CRA Best Practices Memo (supporting material), June, 2003.

C18. "Design Goals of ACL2," with M. Kaufmann. CLI Technical Report 101, Computational Logic, Inc., 1717 West Sixth Street, Suite 290, Austin, TX 78703, 1994.

C17. "Should We Begin a Standardization Process for Interface Logics?," with M. Kaufmann. CLI Technical Report 72, Computational Logic, Inc., 1717 West Sixth Street, Suite 290, Austin, TX 78703, 1992.

C16. "Mechanically Verified Hardware Implementing an 8-Bit Parallel IO Byzantine Agreement Processor." NASA CR-189588, 1992.

C15. "The Mechanical Verification of a FORTRAN Square Root Program," with R. S. Boyer. CSL Report, SRI International, 1981.

C14. "Text Editing Primitives – The TXDT Package." Technical Report CSL-81-2, Xerox Palo Alto Research Center, 1981.

C13. "Program Verification: An Approach to Reliable Hardware and Software," with L. Lamport. *Transactions of the American Nuclear Society, American Nuclear Society*, **35** (1980) 252–253.

C12. "A Theorem-Prover for Recursive Functions," with R. S. Boyer. *Software Engineering Notes*, Association for Computing Machinery, **5**(3) (1980) 26–27.

C11. "The FORTRAN Verification System," with R. S. Boyer. *Software Engineering Notes*, Association for Computing Machinery, **5**(3) (1980) 16–17.

C10. "A Statement of Position." *Software Engineering Notes*, Association for Computing Machinery, **5**(3) (1980) 23–24.

C9. "A Theorem-Prover for Recursive Functions: A User's Manual," with R. S. Boyer. Technical Report CSL-91, Computer Science Laboratory, SRI International, 1979.

C8. "A Guided Tour Through a Working Theorem Prover." *Proceedings of the Fourth Work shop on Artificial Intelligence*, Institut fur Informatik, Universitat Bonn, 1979, pp. 89–97.

C7. "A Lemma Driven Automatic Theorem Prover for Recursive Function Theory," with R. S. Boyer. *Proceedings of the 5th International Joint Conference on Artificial Intelligence*, 1977, pp. 511–519.

C6. "The INTERLISP Virtual Machine Specification." Technical Report CSL-76-5, Xerox Palo Alto Research Center, 1976.

C5. "Primitive Recursive Program Transformation," with R. S. Boyer and R. E. Shostak. *Proceedings of the Third ACM Symposium on Principles of Programming Languages*, Association for Computing Machinery, Atlanta, 1976.

C4. "Automatic Proof of the Correctness of a Binary Addition Algorithm." *SIGART Newsletter*, Association for Computing Machinery, **52** (1975) 13–14.

C3. "Computational Logic: Structure Sharing and Proof of Program Properties." Ph.D. Thesis, Department of Computational Logic, University of Edinburgh, 1973.

C2. "The 77-Editor," with R. S. Boyer and D. J. M. Davies. Technical Report 62, Department of Computational Logic, University of Edinburgh, 1973.

C1. "The GSS Package." Technical Report 51, Department of Computational Logic, University of Edinburgh, 1972.

Recent Professional Service

- 2015 – present – member, United Kingdom Computing Research Committee (UKCRC)

- 2013 – 2015 – elected Chair of the Board of Directors of the Computing Research Association (CRA) the CRA is a non-profit organization of all PhD-granting computer science departments in the US and Canada and all the major industrial research labs

- 2011 – 2013 – Co-Chair, National Science Foundation Computer & Information Science (NSF CISE) Advisory Board

- 2009–2013 – editor of Viewpoints opinion column in the *Communications of the ACM*, the flagship publication of the Association for Computing Machinery (ACM)

- 2008 – present – member, ACM Educational Policy Committee

- 2005–2015 – member, Computing Research Association (CRA) Board of Directors;

- 2011–2012 – member, College of Natural Sciences Dean Search Committee, University of Texas at Austin

- 2001–2009 – chair, University of Texas at Austin, Department of Computer Science; as chair in addition to the usual things, I focused on keeping the department competitive and enabling interdisciplinary research (in part by obtaining a building to bring us together from our then current 6 buildings) and on increasing diversity among minority and women students. I reinvigorated the Friends of Computer Science industrial partners program, Women in CS student organization, organized CS Road Shows, the First Bytes Summer Camps for High School Girls and for High School Computer Science Teachers, the EL Alliance student organization, the Breakfast Bytes Saturday CS Club (for middle- and high-school students) and other programs; these initiative involved proposals to numerous private foundations, industrial organizations, and federal, and state agencies. Our new $120 million building complex, the Bill & Melinda Gates Computer Science Complex, containing Dell Computer Science Hall, was opened in April, 2013.

- 2009 – proposal to the Simonyi Foundation to fund the Robert W. Taylor Graduate Fellowship in the University of Texas at Austin Graduate School was endowed at $100,000

- 2009 – arranged and organized, with the Graduate School and the LBJ School, the visit of Bob Taylor, an internet visionary and UT alumnus who led the effort to create the ARPANET, created Xerox Palo Alto Research Center and DEC System Research Lab, and shaped computing as we know it by leading the team that developed personal networked computers

- 2009 – member, selection committee for the Computing Innovation Fellowships, a new NSF program administered by the Computing Research Association (CRA) to select 60 new PhDs to receive post-docs in Computer Science

- 2009–2011 – member, Computing Research Association (CRA) Executive Committee

- 2009 – proposal to the Bill & Melinda Gates Foundation for the Bill & Melinda Gates Computer Science Complex funded at $30 million

- 2008 – one of 2 candidates nominated for the Presidency of Association for Computing Machinery (ACM), the 87,000 member international organization for computing professionals; I was not elected; the other candidate was Professor Wendy Hall, University of Southampton, England.

- 2008 – co-chair of the biennial CRA Conference at Snowbird, 2008, the flagship conference for academic and research laboratory administrators interested in computing research issues

- 2008–09 – member, University of Texas at Austin President's Strategic Information Technology Advisory Committee (SITAC)

- 2008–10 – co-chair, Academic Alliance of National Center for Women in Information Technology (NCWIT); the Academic Alliance consists of the universities who are members of NCWIT

- 2007–09 – co-chair of the University of Texas at Austin Provost's Task Force on Faculty Gender Equity

- 2008 – arranged and organized the visit of Bill Gates, founder and CEO of Microsoft, to the University of Texas at Austin

- 2007 – member, Stanford University, Department of Computer Science External Review Committee

- 2007 – chair, University of Texas at Dallas, Department of Computer Science External Review Committee

- 2007 – organized the Dell Distinguished Lecture Series for the University of Texas at Austin and arranged the visit of the first speaker, Narayana Murthy, Chairman of the Board and Co-Founder of Infosys Technologies, Bangalore

- 2006 – proposal to the Clare Booth Luce Foundation to fund the Clare Booth Luce Professorship was funded at $600,000, allowing us to recruit Kristen Grauman as a new faculty member

- 2006–2011 – member, University of Texas at El Paso, Department of Computer Science Advisory Board

- 2006 – proposal to Michael and Susan Dell Foundation for the funding of the Dell Computer Science Hall funded at $10 million with $20 million match by the Board of Regents

- 2005 – member, University of Texas Board of Regent's Presidential Selection Advisory Committee

- 2005 – member, National Center for Women in Information Technology (NCWIT), a coalition of more than 170 prominent corporations, academic institutions, government agencies, and non-profits working to increase women's participation in information technology

- 2004–2011 – member, New Mexico State University at Las Cruces, Department of Computer Science Advisory Board

- 2002–2011 – member, Texas A&M University at Prairie View, Department of Computer Science Advisory Board