

Michael C. Loui

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Education

B.S., Mathematics and Computer Science, Yale University, 1975
S.M., Electrical Engineering and Computer Science, Massachusetts Institute of Technology, 1977
Ph.D., Computer Science, Massachusetts Institute of Technology, 1980

Academic and Professional Appointments

University of Illinois at Urbana-Champaign

Visiting Assistant Professor of Electrical Engineering, 1981–82
Assistant Professor of Electrical Engineering, 1982–86
Associate Professor of Electrical and Computer Engineering, 1986–91
Professor of Electrical and Computer Engineering, since 1991
Campus Honors Faculty, since 1994
Associate Dean of the Graduate College, 1996–2000
Adjunct Professor of Educational Organization and Leadership, since 2007

National Science Foundation

Program Director, Theory of Computing Program, 1990–91

Carnegie Mellon University

Visiting Scientist, Computer Science Department, 2000–01

Honors

University Distinguished Teacher/Scholar, Univ. Illinois at Urbana-Champaign, 2001
Carnegie Scholar, Carnegie Foundation for the Advancement of Teaching, 2003
Fellow, Institute of Electrical and Electronics Engineers, 2006

Awards

Hertz Foundation Graduate Fellowship, 1975–80
Everitt Award for Teaching Excellence, College of Engineering, Univ. Illinois at Urbana-Champaign, 1984
Dow Outstanding Young Faculty Award, American Society for Engineering Education, 1985
Andersen Consulting / Accenture Award for Advising Excellence, College of Engineering, Univ. Illinois at Urbana-Champaign, 1989, 1992, 1993, 1994, 1995, 1996, 1997, 2003, 2004, 2006, 2007
Luckman Undergraduate Distinguished Teaching Award, Univ. Illinois at Urbana-Champaign, 1995
College of Engineering Teaching Award, Univ. Illinois at Urbana-Champaign, 1996
Amy L. Devine Recognition Award, Alpha Omega Epsilon (engineering sorority), Univ. Illinois at Urbana-Champaign, 2007

Administrative Experience

Graduate College, University of Illinois at Urbana-Champaign

Associate Dean, 1996–2000

Campus Research Standards Officer, 1998–2000

Recommended, implemented, communicated, and interpreted Graduate College policies; approved new and revised graduate courses and degree programs; counseled students and mediated conflicts; gave presentations on applying for graduate study and choosing an advisor;

handled allegations of research misconduct; managed people and resources at the Graduate College. Accomplishments:

- Created the Graduate College Outstanding Mentor Award, which celebrates exemplary efforts of the graduate faculty in advising and serving graduate students
- Eliminated the small Thesis/Project Grants, to allocate more funds for the Conference Travel Grant Program
- Simplified the course approval procedure
- Introduced expedited approval of experimental periods for new graduate programs as options within existing degree programs
- Began cross-training of the staff to ensure continuity of service for critical time-sensitive functions, such as appointments of doctoral committees
- Started annual performance reviews, with comments from everyone (360-degree reviews)
- Allocated funds for professional development for all Graduate College staff
- Nominated staff members for awards

National Science Foundation, Washington, D.C.

Program Director, Theory of Computing Program, 1990–91

Administered a budget of \$5.9 million. Evaluated about 80 new grant proposals, with mail and panel reviews. Processed about 50 continuing awards. Communicated extensively with the theory community, both with individuals and through presentations and newsletter articles.

Selected Committee Leadership Experience

Chair, Campus NCA Accreditation Subcommittee on Leadership for the 21st Century, 2007–09

With a diverse committee of seventeen faculty and administrators, prepared a chapter of the self-study report for the campus accreditation visit in 2009. The chapter explains how students' experiences outside the classroom prepare them for civic and professional leadership.

Chair, Provost's Ad Hoc Committee to Explore an Interdisciplinary Minor in Leadership Studies, 2006

Worked with ten colleagues across the campus over two months to define and justify an interdisciplinary undergraduate minor in leadership studies, with research-based foundational courses, experiential practicum and capstone courses, and rigorous assessment

Chair, Working Group on Theory of Computing, ACM Workshop on Strategic Directions in Computing Research, 1996

Chaired an international committee that negotiated and recommended research directions in algorithms and complexity theory

Chair, Computer Engineering Area Committee, Department of Electrical and Computer Engineering, 1986–88

Coordinated staffing of courses. Initiated modifications in the undergraduate computer engineering curriculum; replaced the required third semester of digital logic (ECE 391, now ECE 462) by data structures and software development (CS 225).

Research Interests

Computational complexity theory, ethics in engineering and computing, scholarship of teaching and learning

Book Chapters

- M. C. Loui and H. H. Abu-Amara, Memory requirements for agreement among unreliable asynchronous processes, *Advances in Computing Research*, ed. F. P. Preparata, vol. 4, pp. 163–183, JAI Press, Greenwich, Conn., 1987.
- M. C. Loui, Complexity theory, in *The Computer Science and Engineering Handbook*, ed. A. B. Tucker, pp. 250–276, CRC Press, Boca Raton, Fla., 1997.
- E. Allender, M. C. Loui, and K. W. Regan, Complexity classes, in *Algorithms and Theory of Computation Handbook*, ed. M. J. Atallah, pp. 27-1 to 27-23, CRC Press, Boca Raton, Fla., 1999.
- E. Allender, M. C. Loui, and K. W. Regan, Reducibility and completeness, in *Algorithms and Theory of Computation Handbook*, ed. M. J. Atallah, pp. 28-1 to 28-28, CRC Press, Boca Raton, Fla., 1999.
- E. Allender, M. C. Loui, and K. W. Regan, Other complexity classes and measures, in *Algorithms and Theory of Computation Handbook*, ed. M. J. Atallah, pp. 29-1 to 29-24, CRC Press, Boca Raton, Fla., 1999.
- E. Allender, M. C. Loui, and K. W. Regan, Complexity theory, in *Computer Science Handbook*, 2nd ed., ed. A. B. Tucker, pp. 5-1 to 5-30, CRC Press, Boca Raton, Fla., 2004.
- M. C. Loui, Moments of inertia: toward an agenda for sociological research on why engineering professors resist changes in pedagogy and curriculum, in *The Acceptance and Diffusion of Innovation: A Cross-Disciplinary Approach to Instructional and Curricular Change in Engineering*, ed. R. Spalter-Roth, N. Fortenberry, and B. Lovitts, pp. 71–77, American Sociological Association, Washington, D.C., 2007.
- M. C. Loui and K. W. Miller, Ethics and professional responsibility in computing, in *Wiley Encyclopedia of Computer Science and Engineering*, ed. B. W. Wah, Wiley, New York, 2008, dx.doi.org/10.1002/9780470050118.ecse909.
- M. C. Loui, How should the policy apply? Trustworthy decisions in the administration of graduate academic programs. *Ethics in Academic Administration in Higher Education*, ed. E. Englehardt, M. Pritchard, K. Romesburg, and B. Schrag, Springer, to appear.

Videos

- J. H. Smith, S. P. Nichols, M. C. Loui, V. Weil, P. E. Ulmer, C. M. Skooglund, F. Suppe, E. W. LeFevre, and P. Harper, *Incident at Morales: An Engineering Ethics Story*, Video and Study Guide, National Institute for Engineering Ethics, Texas Tech University, Lubbock, Tex., 2003.
- M. C. Loui, Professional ethics in engineering, 2008, Online at http://www.youtube.com/view_play_list?p=746AE3CCB29B64B8.

Journal Publications

Combinatorial Algorithms

- M. C. Loui, Weighted derivation trees, *Communications of the ACM*, vol. 19, no. 9, pp. 509–513, September 1976. Second Prize in Forsythe Student Paper Competition, Association for Computing Machinery, 1976
- E. L. Lloyd and M. C. Loui, On the worst case performance of buddy systems, *Acta Informatica*, vol. 22, no. 4, pp. 451–473, October 1985.
- P. A. Peterson and M. C. Loui, The general maximum matching algorithm of Micali and Vazirani, *Algorithmica*, vol. 3, no. 4, pp. 511–533, 1988.

- B. Das and M. C. Loui, Reconstructing a minimum spanning tree after deletion of any node, *Algorithmica*, vol. 31, no. 4, pp. 530–547, 2001.
- S. Pae and M. C. Loui, Randomizing functions: simulation of a discrete probability distribution using a source of unknown distribution, *IEEE Transactions on Information Theory*, vol. 52, no. 11, pp. 4965–4976, November 2006.

Computational Complexity Theory

- M. C. Loui, A note on the pebble game, *Information Processing Letters*, vol. 11, no. 1, pp. 24–26, 29 August 1980.
- L. M. Adleman and M. C. Loui, Space-bounded simulation of multitape Turing machines, *Mathematical Systems Theory*, vol. 14, no. 3, pp. 215–222, July 1981.
- M. C. Loui, A space bound for one-tape multidimensional Turing machines, *Theoretical Computer Science*, vol. 15, no. 3, pp. 311–320, September 1981.
- M. C. Loui, Simulations among multidimensional Turing machines, *Theoretical Computer Science*, vol. 21, no. 2, pp. 145–161, November 1982. Preliminary version: *Proceedings of the Twenty-Second Annual Symposium on Foundations of Computer Science*, Nashville, Tenn., 1981, pp. 58–67.
- M. C. Loui, Optimal dynamic embedding of trees into arrays, *SIAM Journal on Computing*, vol. 12, no. 3, pp. 463–472, August 1983.
- M. C. Loui, Minimizing access pointers into trees and arrays, *Journal of Computer and System Sciences*, vol. 28, no. 3, pp. 359–378, June 1984.
- J. Y. Halpern, M. C. Loui, A. R. Meyer, and D. Weise, On time versus space III, *Mathematical Systems Theory*, vol. 19, no. 1, pp. 13–28, 1986.
- A. S. Hodel and M. C. Loui, Optimal dynamic embedding of X-trees into arrays, *Theoretical Computer Science*, vol. 59, no. 3, pp. 259–276, August 1988. Preliminary version: *Proceedings of the Twentieth Annual Conference on Information Sciences and Systems*, Princeton, N.J., 1986, pp. 322–327.
- J. L. Trahan, M. C. Loui, and V. Ramachandran, Multiplication, division, and shift instructions in parallel random access machines, *Theoretical Computer Science*, vol. 100, no. 1, pp. 1–44, 22 June 1992. Preliminary version: *Proceedings of the Twenty-Second Annual Conference on Information Sciences and Systems*, Princeton, N.J., 1988, pp. 126–130.
- M. C. Loui and D. R. Luginbuhl, The complexity of on-line simulations between multidimensional Turing machines and random access machines, *Mathematical Systems Theory*, vol. 25, no. 4, pp. 293–308, 1992.
- M. C. Loui and D. R. Luginbuhl, Optimal on-line simulations of tree machines by random access machines, *SIAM Journal on Computing*, vol. 21, no. 5, pp. 959–971, October 1992.
- D. R. Luginbuhl and M. C. Loui, Hierarchies and space measures for pointer machines, *Information and Computation*, vol. 104, no. 2, pp. 253–270, June 1993.
- J. L. Trahan, V. Ramachandran, and M. C. Loui, Parallel random access machines with both multiplication and shifts, *Information and Computation*, vol. 110, no. 1, pp. 96–118, April 1994. Preliminary version: The power of parallel random access machines with augmented instruction sets, *Proceedings, Structure in Complexity Theory: Fourth Annual Conference*, Eugene, Ore., pp. 97–103, 1989.
- M. C. Loui, Computational complexity theory, *Computing Surveys*, vol. 28, no. 1, pp. 47–49, March 1996.

Education

- M. C. Loui, Computer science is an engineering discipline, *Engineering Education*, vol. 78, no. 3, pp. 175–178, December 1987.
- M. C. Loui, The case for assembly language programming, *IEEE Transactions on Education*, vol. 31, no. 3, pp. 160–164, August 1988.
- R. B. Uribe, L. Haken, and M. C. Loui, A design laboratory in electrical and computer engineering for freshmen, *IEEE Transactions on Education*, vol. 37, no. 2, pp. 194–202, May 1994.

- M. C. Loui, Computer engineering at the University of Illinois at Urbana-Champaign, *IEEE Transactions on Education*, vol. 37, no. 3, pp. 322–327, August 1994.
- M. C. Loui, Computer science is a new engineering discipline, *Computing Surveys*, vol. 27, no. 1, pp. 31–32, March 1995.
- C. Glagola, M. Kam, M. C. Loui, and C. Whitbeck, Teaching ethics in engineering and computer science: a panel discussion, *Science and Engineering Ethics*, vol. 3, no. 4, pp. 463–480, October 1997. Preliminary version: Mini-conference on Ethics in Engineering and Computing, Sixth Annual Meeting of the Association for Practical and Professional Ethics, Washington, D.C., 1997.
- M. C. Loui, Fieldwork and cooperative learning in professional ethics, *Teaching Philosophy*, vol. 23, no. 2, pp. 139–156, June 2000. Preliminary version: Eighth Annual Meeting of the Association for Practical and Professional Ethics, Washington, D.C., 1999; International Conference on Ethics in Engineering and Computer Science, Cleveland, Ohio, 1999.
- M. C. Loui, Educational technologies and the teaching of ethics in science and engineering, *Science and Engineering Ethics*, vol. 11, no. 3, pp. 435–446, July 2005. Preliminary version: Twelfth Annual Meeting of the Association for Practical and Professional Ethics, Charlotte, N.C., 2003.
- M. C. Loui, Ethics and the development of professional identities of engineering students, *Journal of Engineering Education*, vol. 94, no. 4, pp. 383–390, October 2005. Preliminary version: *Proceedings of the Thirty-Fourth ASEE/IEEE Frontiers in Education Conference*, Savannah, Ga., October 20–23, 2004, pp. T2E-11 to T2E-12.
- M. C. Loui, Assessment of an engineering ethics video: *Incident at Morales*, *Journal of Engineering Education*, vol. 95, no. 1, pp. 85–91, January 2006. Preliminary version: *Proceedings of the Thirty-Fifth ASEE/IEEE Frontiers in Education Conference*, Indianapolis, Ind., October 19–22, 2005, pp. S3D-19 to S3D-20.
- G. Hashemian and M. C. Loui, Engineering courage: from “not my business” to positive responsibility. *Science and Engineering Ethics*, to appear. Preliminary version: *Proceedings of the Thirty-Fifth ASEE/IEEE Frontiers in Education Conference*, Indianapolis, Ind., October 19–22, 2005, pp. S3D-17 to S3D-18.
- M. C. Loui, What can students learn from an extended role-play simulation on technology and society? *Bulletin of Science, Technology & Society*, conditionally accepted. Preliminary version: *Proceedings of the Thirty-Eighth ASEE/IEEE Frontiers in Education Conference*, Saratoga Springs, N.Y., October 22–25, 2008, pp. T3F-1 to T3F-2.

Ethics

- E. Doss and M. C. Loui, Ethics and the privacy of electronic mail, *The Information Society*, vol. 11, no. 3, pp. 223–235, July 1995. Preliminary version: Fourth Annual Meeting of the Association for Practical and Professional Ethics, Crystal City, Va., 1995.
- W. Bakker and M. C. Loui, Can designing and selling low-quality products be ethical? *Science and Engineering Ethics*, vol. 3, no. 2, pp. 153–170, April 1997. Preliminary version: Fifth Annual Meeting of the Association for Practical and Professional Ethics, St. Louis, Mo., 1996.
- M. C. Loui, Commentary on “Better communication between engineers and managers: some ways to prevent many ethically hard choices” (Davis), *Science and Engineering Ethics*, vol. 3, no. 2, pp. 215–216, April 1997.
- D. Lin and M. C. Loui, Taking the byte out of cookies: privacy, consent, and the Web, *Computers and Society*, vol. 28, no. 2, pp. 39–51, June 1998. Preliminary version: Seventh Annual Meeting of the Association for Practical and Professional Ethics, Dallas, Tex., 1998.
- M. C. Loui, The engineer’s responsibility for quality, *Science and Engineering Ethics*, vol. 4, no. 3, pp. 347–350, July 1998. Reprinted in *Chemtech*, vol. 29, no. 1, pp. 7–8, January 1999.
- M. C. Loui, Commentary on “The greening of engineers: a cross-cultural experience” (Ansari), *Science and Engineering Ethics*, vol. 7, no. 1, pp. 125–127, January 2001.

- M. C. Loui, Seven ways to plagiarize: handling real allegations of research misconduct, *Science and Engineering Ethics*, vol. 8, no. 4, pp. 529–539, October 2002. Preliminary version: Eleventh Annual Meeting of the Association for Practical and Professional Ethics, Cincinnati, Ohio, 2002.
- M. C. Loui, Commentary on “An analytical hierarchy process model to apportion co-author responsibility” (Sheskin), *Science and Engineering Ethics*, vol. 12, no. 3, pp. 567–570, July 2006.
- C. Graeff and M. C. Loui, Ethical implications of technical limitations in geographic information systems. *IEEE Technology and Society Magazine*, conditionally accepted. Preliminary version: IEEE International Symposium on Technology and Society, New York, N.Y., 2006.

Parallel and Distributed Computation

- M. C. Loui, The complexity of sorting on distributed systems, *Information and Control*, vol. 60, no. 1, pp. 70–85, January 1984. Preliminary version: *Proceedings of the 1984 Conference on Information Sciences and Systems*, Princeton, N.J., pp. 318–322.
- M. C. Loui, T. A. Matsushita, and D. B. West, Election in a complete network with a sense of direction, *Information Processing Letters*, vol. 22, no. 4, pp. 185–187, 17 April 1986. Corrigendum: *Information Processing Letters*, vol. 28, no. 6, p. 327, 29 August 1988. Preliminary version: *Proceedings of the Nineteenth Annual Conference on Information Sciences and Systems*, Baltimore, Md., 1985, p. 316.
- A. M. Schwartz and M. C. Loui, Dictionary machines on cube-class networks, *IEEE Transactions on Computers*, vol. C-36, no. 1, pp. 100–105, January 1987. Preliminary version: *Proceedings of the 1985 International Conference on Parallel Processing*, St. Charles, Ill., pp. 210–216.
- M. M. Wu and M. C. Loui, An efficient distributed algorithm for maximum matching in general graphs, *Algorithmica*, vol. 5, no. 3, pp. 383–406, 1990.
- M. C. Loui and M. A. Sohoni, An algorithm for load balancing in multiprocessor systems, *Information Processing Letters*, vol. 35, no. 5, pp. 223–228, 28 August 1990.
- M. M. Wu and M. C. Loui, Modeling robust asynchronous communication protocols with finite-state machines, *IEEE Transactions on Communications*, vol. 41, no. 3, pp. 492–500, March 1993.

Research Policy

- A. Condon, F. Fich, G. N. Frederickson, A. Goldberg, D. S. Johnson, M. C. Loui, S. Mahaney, P. Raghavan, J. E. Savage, A. Selman, and D. B. Shmoys, Strategic directions in research in theory of computing, *Computing Surveys*, vol. 28, no. 4, pp. 575–590, December 1996. Also *SIGACT News*, vol. 28, no. 3, pp. 75–93, September 1997.

Conference Publications¹

- M. C. Loui and A. S. Willsky, Efficient multiplication in semisimple algebras, *Proceedings of the 1978 Conference on Information Sciences and Systems*, Baltimore, Md., pp. 61–65.
- E. Gafni, M. C. Loui, P. Tiwari, D. B. West, and S. Zaks, Lower bounds on common knowledge in distributed algorithms, in *Distributed Algorithms on Graphs: Proceedings of the First International Workshop on Distributed Algorithms on Graphs*, ed. E. Gafni and N. Santoro, Ottawa, Canada, 1985, Carleton University Press, 1986, pp. 49–67.
- P. Tiwari and M. C. Loui, Simulation of chaotic algorithms by token algorithms, in *Distributed Algorithms on Graphs: Proceedings of the First International Workshop on Distributed Algorithms on Graphs*, ed. E. Gafni and N. Santoro, Ottawa, Canada, 1985, Carleton University Press, 1986, pp. 143–152.
- J. E. Burns, R. I. Cruz, and M. C. Loui, Generalized agreement between concurrent fail-stop processes, *Proceedings of the Seventh International Workshop on Distributed Algorithms*, Lausanne,

¹ This list excludes preliminary versions of journal publications.

- Switzerland, 1993, Lecture Notes in Computer Science, vol. 725, ed. A. Schiper, Springer-Verlag, Berlin, pp. 84–98.
- N. M. Amato and M. C. Loui, Checking linked data structures, *Proceedings of the Twenty-Fourth International Symposium on Fault-Tolerant Computing*, Austin, Tex., 1994, pp. 164–173.
- S. P. Nichols, J. H. Smith, and M. C. Loui, Incident at Morales: a video/DVD case study in professional responsibility, *Proceedings of the 2003 ASEE Annual Conference and Exposition*, Nashville, Tenn., June 22–25, 2003, CD-ROM.
- M. C. Loui, E. W. LeFevre, S. P. Nichols, C. M. Skooglund, J. H. Smith, F. Suppe, P. E. Ulmer, and V. Weil, Incident at Morales: an engineering ethics video, *Proceedings of the Thirty-Third ASEE/IEEE Frontiers in Education Conference*, Westminster, Colo., November 5–8, 2003, pp. S1H-1 to S1H-2.
- R. Chmiel and M. C. Loui, An integrated approach to instruction in debugging computer programs, *Proceedings of the Thirty-Third ASEE/IEEE Frontiers in Education Conference*, Westminster, Colo., November 5–8, 2003, pp. S4C-1 to S4C-6.
- R. Chmiel and M. C. Loui, Debugging: from novice to expert, *Proceedings of the Thirty-Fifth ACM Technical Symposium on Computer Science Education*, Norfolk, Va., March 3–7, 2004, pp. 17–21. (90 accepted / 320 submissions)
- S. Pae and M. C. Loui, Optimal random number generation from a biased coin, *Proceedings of the Sixteenth Annual ACM-SIAM Symposium on Discrete Algorithms*, Vancouver, Canada, January 23–25, 2005, pp. 1079–1088. (135 accepted / 487 submissions)
- I. Liao and M. C. Loui, Work-in-progress: do women score lower than men on computer engineering exams? *Proceedings of the Thirty-Fifth ASEE/IEEE Frontiers in Education Conference*, Indianapolis, Ind., October 19–22, 2005, pp. T3D-7 to T3D-8.
- J. T. Longino, M. Loui, and C. Zilles, Student misconceptions in an introductory logic design course, *Proceedings of the 2006 ASEE Annual Conference and Exposition*, Chicago, Ill., June 18–21, 2006, CD-ROM.
- K. Goldman, P. Gross, C. Heeren, G. Herman, L. Kaczmarczyk, M. C. Loui, and C. Zilles, Identifying important and difficult concepts in introductory computing courses using a Delphi process, *Proceedings of the Thirty-Ninth ACM Technical Symposium on Computer Science Education*, Portland, Ore., March 12–15, 2008, pp. 256–260. (100 accepted / 324 submissions)
- D. E. Goldberg, A. C. Cangellaris, M. C. Loui, R. L. Price, and J. B. Elliott-Litchfield, iFoundry: engineering curriculum reform without tears, *Proceedings of the 2008 ASEE Annual Conference and Exposition*, Pittsburgh, Pa., June 22–25, 2008, to appear.
- G. L. Herman, L. Kaczmarczyk, M. C. Loui, and C. Zilles, Proof by incomplete enumeration and other logical misconceptions. *Proceedings of the Fourth International Workshop on Computing Education Research*, Sydney, Australia, September 6–7, 2008, pp. 59–70. (16 accepted / 46 submissions)
- M. C. Loui and B. A. Robbins, Work-in-progress: assessment of peer-led team learning in an engineering course for freshmen, *Proceedings of the Thirty-Eighth ASEE/IEEE Frontiers in Education Conference*, Saratoga Springs, N.Y., October 22–25, 2008, pp. F1F-7 to F1F-8.

Technical Reports

- M. C. Loui and K. S. Narendra, Comparison of learning automata operating in nonstationary environments, Becton Center Technical Report CT-65, Yale University, May 1975.
- M. C. Loui, Efficient multiplication in semisimple algebras, Technical Report R-700, Electronic Systems Laboratory, M.I.T., November 1976.
- M. C. Loui, Minimum register allocation is complete in polynomial space, Technical Memorandum TM-128, Laboratory for Computer Science, M.I.T., March 1979.
- M. C. Loui, The space complexity of two pebble games on trees, Technical Memorandum TM-133, Laboratory for Computer Science, M.I.T., May 1979.
- M. C. Loui and G. Bilardi, The correctness of Tison’s method for generating prime implicants, Technical Report R-952, Coordinated Science Laboratory, Univ. Illinois at Urbana-Champaign, February 1982.

- D. N. Jayasimha and M. C. Loui, The communication complexity of parallel algorithms, CSRD Report No. 629, Center for Supercomputing Research and Development, Univ. Illinois at Urbana-Champaign, January 1987.
- R. Pasquini and M. C. Loui, A fault tolerant distributed algorithm for minimum-weight spanning trees, Technical Report UILU-ENG-94-2210 (ACT-131), Coordinated Science Laboratory, Univ. Illinois at Urbana-Champaign, March 1994.
- K. Goldman, P. Gross, C. Heeren, G. Herman, L. Kaczmarczyk, M. C. Loui, and C. Zilles, Identifying important and difficult concepts in introductory computing courses using a Delphi process, Technical Report UIUCDCS-R-2007-2917, Department of Computer Science, Univ. Illinois at Urbana-Champaign, November 2007.

Other Publications

- M. C. Loui, ed., *New Engineering Educator's Survival Kit*, American Society for Engineering Education, June 1984.
- M. C. Loui, Conference report: Midwest Consortium for Theoretical Computer Science, *SIGACT News*, vol. 18, no. 2, p. 46, Fall 1986.
- M. C. Loui, Theoretical computer science at the University of Illinois at Urbana-Champaign, *SIGACT News*, vol. 19, no. 3, pp. 37–38, Fall 1988.
- M. C. Loui, NSF Reports, *SIGACT News*, vol. 21, no. 4, pp. 11–13, Fall 1990; vol. 22, no. 1, pp. 13–14, Winter 1991; vol. 22, no. 2, pp. 18–20, Spring 1991; vol. 22, no. 3, p. 5, Summer 1991.
- M. C. Loui, Theory of computing: achievements, challenges, and opportunities, *SIGACT News*, vol. 22, no. 3, pp. 41–48, Summer 1991.
- M. C. Loui, My year at NSF, *ASEE Prism*, vol. 1, no. 10, p. 52, June 1992.
- M. C. Loui, What do we teach when we teach? Ethical values in the classroom, *The Interface*, IEEE, pp. 1–2, November 1997.
- M. C. Loui, Letter to the editor: response to the Computing Research Association's "Best Practices Memo," *Computing Research News*, vol. 11, no. 5, pp. 3, 20, November 1999.
- M. C. Loui, Review of *Internet Ethics* by D. Langford, *IEEE Spectrum*, vol. 37, no. 11, pp. 15–16, November 2000. Reprinted in *Ethics and Information Technology*, vol. 4, pp. 167–168, 2002.
- M. C. Loui, Review of *Collaboration, Reputation, and Ethics in American Academic Life* by G. Oakes and A. J. Vidich, *Library Quarterly*, vol. 72, no. 1, pp. 129–131, January 2002.
- M. Loui, True confessions of a volunteer novice children's choir director, *UUMN Notes*, vol. 21, no. 1, p. 3, February/March 2003.
- M. C. Loui, Association for Computing Machinery, in *Encyclopedia of Science, Technology, and Ethics*, pp. 125–126, Thomson Gale, Farmington Hills, Mich., 2005.
- M. C. Loui, Teaching students to dream, *College Teaching*, vol. 54, no. 1, p. 58, Winter 2006.
- M. C. Loui, The development of research questions and methodology in studying the effects of ethics instruction on the development of professional identities [of] engineering students, *Annals of Research on Engineering Education*, <www.areeonline.org>, vol. 2, no. 1, Winter 2006.
- M. C. Loui, Courage in the classroom, *College Teaching*, vol. 54, no. 2, p. 221, Spring 2006.
- M. C. Loui, Love, passion, and the amateur teacher, *College Teaching*, vol. 54, no. 3, p. 285, Summer 2006.
- M. C. Loui, Assessment of an engineering ethics video: Incident at Morales, *Annals of Research on Engineering Education*, <www.areeonline.org>, vol. 2, no. 2, Summer 2006.
- Reviews of five articles and four books, *Computing Reviews*, 1988–92.

Work in Preparation

- M. C. Loui, Ethical issues in peer review and publication of engineering research. Invited module for a course on responsible conduct of research for graduate students in engineering, ed. J. Borenstein.

Grants

- Access time versus storage space in information retrieval systems, National Science Foundation, IST-8012242, 1982–83. Replaced S. Swamy as Principal Investigator.
- Redundant data representations for efficient on-line access, National Science Foundation, MCS-8217445, 1983–85. Principal Investigator.
- New faculty incentive grant, Eastman Kodak Company, 1983–87.
- The communication complexity of graph problems on distributed systems, Office of Naval Research, N00014-85-K-0570, 1985–87. Co-Principal Investigator with D. B. West.
- Graph-theoretic methods for distributed algorithms, Office of Naval Research, N00014-85-K-0570, 1987–90. Co-Principal Investigator with D. B. West.
- Fault-tolerant concurrent access to data structures, Campus Research Board, Univ. Illinois at Urbana-Champaign, 1988–89.
- Theory of algorithms for modifying solutions to network optimization problems, Campus Research Board, Univ. Illinois at Urbana-Champaign, 1990–91.
- The computational complexity of random access machines, National Science Foundation, CCR-8922008, 1990–93. D. J. Brown replaced me as Principal Investigator when I was at NSF.
- Course development award: Engineering ethics, Program for the Study of Cultural Values and Ethics, Univ. Illinois at Urbana-Champaign, 1992.
- Theory of program checking and fault-tolerant software, National Science Foundation, CCR-9315696, 1994–96. Principal Investigator.
- Collaborative moral problem solving: a multidisciplinary approach to teaching professional ethics, with J. D. Wallace, Campus Course Development Awards, Univ. Illinois at Urbana-Champaign, 1996.
- Magnets, electricity, and energy conversion (equipment for demonstrations at Yankee Ridge School), Electrical / Electronics Grants, Central Illinois Section, IEEE, 1997.
- Preparing future professors through communities of scholars, Provost's Initiative on Teaching Advancement, Univ. Illinois at Urbana-Champaign, 1999.
- Redesign of the computer engineering core for the new millennium, College of Engineering, Univ. Illinois at Urbana-Champaign, 2002–03.
- National Institute for Engineering Ethics video project: a sequel to *Gilbane Gold*, National Science Foundation, SES-0138309, 2002–05. Co-Principal Investigator with J. H. Smith (PI), W. D. Lawson, S. P. Nichols, P. Ulmer, and V. Weil.
- Development of concept inventories for computer science, National Science Foundation, DUE-0618589, 2006–09. Co-Principal Investigator with C. Zilles (PI), C. Heeren, K. J. Goldman, and L. Kaczmarczyk.
- Role-play scenarios for teaching responsible conduct of research, National Science Foundation, EEC-0628814, 2006–09. Principal Investigator. Co-Principal Investigator: C. K. Gunsalus.
- Assessment of student teams in a freshman engineering course, College of Engineering, Univ. Illinois at Urbana-Champaign, 2008–09. Principal Investigator.
- The responsible conduct of computational modeling and research, National Science Foundation, IIS-0832843, 2008–2011. Principal Investigator. Co-Principal Investigators: H. Dankowicz, S. Wilson. Collaborator: M. Keefer.

Teaching Experience

Undergraduate Courses

- CHP 395 (formerly 295), Professional Ethics (*new*)
- CHP 396, Technology, Communication, and Contemporary Society (*new*)
- ECE 101 (formerly 199 JL), Exploring Digital Information Technologies (*new*)
- ECE 110, Introduction to Electrical and Computer Engineering (*new, for freshmen*)

ECE 290, Computer Engineering I (*digital systems, computer organization*)
ECE 316 (formerly 216), Engineering Ethics (*new*)
ECE 390 (formerly 291), Computer Engineering II (*assembly language, real time computing*)

Advanced Undergraduate/Graduate Courses

ECE 411 (formerly 312), Computer Organization and Design
ECE 428 (formerly 328), Computer Networks and Distributed Systems (*new*)
ECE 462, Logic Design (formerly ECE 391, Switching Theory)
ECE 477 (formerly 371 MCL), Formal Methods for Software Development (*new*)

Graduate Courses

ECE 490 V, Combinatorial Algorithms Seminar
ECE 497 L, Combinatorial Optimization (*new*)
ECE 579 (formerly 479), Computational Complexity (*new*)
EOL 585 (formerly 490 TC), College Teaching and Academic Careers

New Courses Designed but Taught by Others

ECE 271 PE, Professionalism and Ethics in Engineering (*new*)
ECE 498–499 (formerly 298–299), Senior Research Project – Senior Thesis (*new*)

Presentations at Campus Faculty Retreats on Teaching and Learning

Teaching with cases, September 15, 1995
Applications of learning styles in lecturing, January 19, 1996
Groups and teams in science and engineering, February 5, 1998
From novice to expert in solving problems, February 12, 2002
Helping students develop the habit of thinking, May 17, 2002

Speeches at Annual Graduate Teacher Certificate Ceremonies

Ethical values in the classroom, April 28, 1997
Love, passion, and the amateur teacher, April 27, 1998
Courage in the classroom, April 26, 1999
Teaching students to dream, April 24, 2000

Panelist/presenter, various seminars and workshops for faculty on teaching, advising students, and applying for grants, since 1989.

Numerous presentations on research ethics, engineering ethics, applying for graduate study, and choosing a thesis advisor, since 1994.

Leadership certificate coach for C. Fabbri (finished 2004), E. Cartwright (2006), W. Tjen (2007), E. Echevarria (2009, expected), M. Bai (2009, expected), J. Wayer (2010, expected).

Thesis and Project Students²

B.S. Students

P. Everhardt, Average case behavior of distributed extrema-finding algorithms, August 1984.
P. A. Peterson, The general maximum matching algorithm of Micali and Vazirani, August 1985.
I. Chang, Wait-free generalized agreement protocols, June 1993.
E. Doss, Ethics and the privacy of electronic mail, September 1993.
R. Pasquini, A fault tolerant distributed algorithm for minimum-weight spanning trees, March 1994.
D. Deavours, Implementing a program checker for linked lists, August 1995.

² Many theses have led to journal publications on which the student was the sole author.

- W. Bakker, Can designing and manufacturing low-quality products be ethical? February 1996.
 G. Hashemian, Engineering courage: from “not my business” to positive responsibility, May 2005.
 E. Echevarria, Penetrating the mystery behind the fabulous fabrication of unbiased bits, August 2005.
 C. Graeff, Ethical implications of biases and errors in geographic information systems, May 2006.

M.S. Students

- T. A. Matsushita, Distributed algorithms for selection, July 1983 (Co-advisor: D. B. West).
 A. M. Schwartz, Dictionary machines for cube-class networks, March 1985.
 H. H. Abu-Amara, Memory requirements for agreement among asynchronous processes, May 1985.
 J. L. Trahan, Simulations among multidimensional iterative arrays, iterative tree automata, and alternating Turing machines, January 1986.
 A. S. Hodel, Optimal dynamic embedding of X-trees into arrays, May 1986.
 M. M. Wu, An efficient distributed algorithm for maximum matching in general graphs, January 1987.
 M. L. Prastein, Precedence-constrained scheduling with minimum time and communication, May 1987.
 M. J. Lloyd, Token execution strategies for distributed algorithms: simulation studies, August 1987.
 M. A. Sohoni, Scaling of linear programs, May 1988.
 G. K. Harms, The application of competitive bidding and genetic algorithms to the scheduling and management of computer integrated manufacturing systems, January 1990 (Co-advisor: M. J. Shaw).
 K. J. Rouborn, Message efficient distributed deadlock detection, May 1990.
 R. I. Cruz, Generalized agreement between concurrent fail-stop processes, August 1992.
 K-H. Mak, Speedup of deterministic multi-dimensional Turing machines by alternating multi-dimensional Turing machines, August 1992.
 D. J. Lin, Taking the byte out of cookies: privacy, consent, and the Web, April 1998.
 J. M. Overturf, An efficient distributed algorithm for leader election in rings, July 1999.
 S. Thite, Optimum binary search trees on the hierarchical memory model, November 2000.
 R. J. Chmiel, An integrated approach to instruction in debugging computer programs, April 2004.
 I. Liao, Do women score lower than men on computer engineering examinations? May 2005.
 J. T. Longino, Boolean blunders: identification and assessment of student misconceptions in a digital logic course, July 2006 (Co-advisor: C. Zilles).

Ph.D. Students and Their Affiliations

- P. Tiwari, The communication complexity of distributed computing and a parallel algorithm for polynomial roots, July 1986. IBM T. J. Watson Research Center, 1986–90, 1994–99; University of Wisconsin–Madison, 1990–93. C-Cube Microsystems, 1999–2001; Multimedia Communication Systems, 2002–04; Indian Institute of Technology Delhi, since 2004.
 D. N. Jayasimha, Communication and synchronization in parallel algorithms, August 1988 (Co-advisor: D. H. Lawrie). Ohio State University, 1988–96; Intel Corporation, Santa Clara, Calif., since 1996.
 H. H. Abu-Amara, Fault-tolerant distributed algorithms for agreement and election, August 1988. IBM T. J. Watson Research Center, 1988–89; Texas A&M University, 1989–95; Bell-Northern Research/Nortel, Dallas, 1996–2000; Yotta Networks, Richardson, Tex., 2000–02; University of Texas at Dallas, since 2003.
 J. L. Trahan, Instruction sets for parallel random access machines, August 1988. Louisiana State University, since 1988.
 D. R. Luginbuhl, Computational complexity of random access models, January 1990. Air Force Institute of Technology, 1990–93; Air Force Office of Scientific Research, 1994–97, since 2006; U.S. Department of Energy, 1997–2001; Western Carolina University, 2001–06.
 M. M. Wu, Asynchronous algorithms for shared memory machines, January 1992. Kuck and Associates, Champaign, Ill., 1992–95; AT&T Bell Laboratories/Lucent Technologies, Naperville, Ill., since 1995.
 D. S. Atkinson, Scaling and interior point methods in optimization, July 1992 (Co-advisor: P. Vaidya). University of Illinois at Urbana-Champaign, 1992–93; Western Kentucky University, 1993–95; American States Insurance, Indianapolis, since 1995.

- K-H. Mak, The power of parallel time, May 1995. Nominated by the Department of Computer Science for the ACM Distinguished Dissertation Award.
- B. N. Das, Spanning tree algorithms for connectivity and routing in communication networks, August 1997. Lucent Technologies, Naperville, Ill., since 1997.
- S. Pae, Random number generation using a biased source, May 2005. Korea Institute for Advanced Study, 2005–07; Hongik University, since 2007.

Current Students

- B. Brummel, research assistant on assessment of role-play scenarios project
- G. Herman, Ph.D. Thesis on concept inventories for computer science (Co-advisor: C. Zilles)
- K. Kristich, research assistant on assessment of role-play scenarios project
- B. Robbins, undergraduate project to assess the supervised study sessions in ECE 110
- M. Rosulek, Ph.D. Thesis on cryptography and computational complexity (Co-advisor: M. Prabhakaran)
- S. Seiler, research assistant on assessment of role-play scenarios project
- K. Shruti, undergraduate project on ethical issues in computational modeling and research

Professional Activities

Journals

- Editor, Theory of Computation category, *Computing Reviews*, 1987–97.
- Member, Board of Editors, *Information and Computation*, 1997–2008.
- Guest editor, *Science and Engineering Ethics*, October 1997, April 1998.
- Member, Editorial Board, *Accountability in Research*, since 1999.
- Member, Editorial Board, *Teaching Ethics*, since 2002.
- Executive Editor, *College Teaching*, since 2006; consulting editor, 2005–06. Created the journal's policy on plagiarism and duplicate publication.

Professional Organizations

- Member, Long Range Planning Committee, ACM Special Interest Group on Algorithms and Computation Theory, 1993–97.
- Member, Advisory Board, Online Ethics Center for Engineering and Science, 1995–2007.
- Organizer, successful nomination of J. Y. Halpern and Y. Moses for the ACM-SIGACT/EATCS Gödel Prize for the best paper in theoretical computer science published in the last six years, 1997.
- Member at Large, Executive Board, National Institute for Engineering Ethics, 1997–2008; Distinguished Life Member, since 2008.
- Member, Graduate Standards Committee, Midwestern Association of Graduate Schools, 1998–2001.
- Organizer, successful nomination of A. L. Selman for the ACM-SIGACT Distinguished Service Award, 2002.
- Member, Board of Governors, IEEE Society on Social Implications of Technology, 2002–2004, 2005–2007. Chair, Publications Committee, since 2003. Chaired search committees for editor of *IEEE Technology and Society Magazine*, 2003, 2006.
- Member, Advisory Group, Online Ethics Center of the National Academy of Engineering, since 2007.
- Distinguished Lecturer, IEEE Society on Social Implications of Technology, since 2008.
- Member of American Society for Engineering Education, Association for Computing Machinery, Association for Practical and Professional Ethics, Institute of Electrical and Electronics Engineers (Fellow), International Society for the Scholarship of Teaching and Learning, Sigma Xi, Society for Ethics Across the Curriculum.

Invited Presentations

- Invited presenter, The engineer's responsibility for quality, Engineering Foundation Conference on Ethics for Science and Engineering Based International Industries, Durham, N.C., September 16, 1997.

Keynote speaker, How to succeed in teaching ethics without really trying, Conference on Integrating Ethics into Technical Education, Raritan Valley Community College, Somerville, N.J., June 3, 1999.

Invited presenter, Ethics and the Internet: emerging issues, Conference on Ethics and Social Responsibility in Engineering and Technology, Coeur d'Alene, Idaho, May 31–June 1, 2001.

Invited presenter, Professional responsibility for software quality, Conference on Ethics and Social Responsibility in Engineering and Technology, Coeur d'Alene, Idaho, May 23–24, 2002.

Invited presenter, Educational technologies and the teaching of ethics in science and engineering, Web-based Ethics Curriculum Workshop, Bloomington, Ind., June 10–11, 2002.

Invited panelist, Internet ethics and research collaborations between industry and universities, Internet2 Meeting, Los Angeles, Calif., October 28–30, 2002.

Invited presenter, Educational technologies and the teaching of ethics in science and engineering, Twelfth Annual Meeting of the Association for Practical and Professional Ethics, Charlotte, N.C., February 27–March 1, 2003.

Invited presenter, Responsible Conduct of Research workshop, Northern Illinois University, DeKalb, Ill., April 9, 2004.

Visiting scholar, six lectures on various topics, Western Carolina University, Cullowhee, N.C., February 1–3, 2006.

Invited participant, Moments of inertia: toward an agenda for sociological research on why engineering professors resist changes in pedagogy and curriculum, Workshop on Social Dynamics of Campus Change: Creating an Interdisciplinary Research Agenda, National Academy of Engineering, Washington, D.C., April 26–27, 2006.

Invited panelist, Special Session on Research Ethics, Federated Computing Research Conference, San Diego, Calif., June 8–16, 2007.

Conferences and Workshops

Organizer, Third Midwest Theory of Computation Day, September 10, 1981.

Conference co-chair, Twenty-Fourth and Twenty-Fifth Annual Allerton Conferences on Communication, Control, and Computing, Monticello, Ill., October 1–3, 1986, and September 30 – October 2, 1987.

Program Committee, 1986 Fall Joint Computer Conference, Dallas, Tex., November 1986.

Panelist, Computer science vs. computer engineering, 1989 Annual Meeting of the Association of Computer Science and Computer Engineering Chairs, Louisville, Ky., February 21, 1989.

Panelist, Is computer science an engineering discipline? Computing Research Board Department Chairs' Program, ACM Computer Science Conference, Washington, D.C., February 21, 1990.

Organizer, session on concurrent and distributed computation, Twenty-Eighth Annual Allerton Conference on Communication, Control, and Computing, Monticello, Ill., October 4, 1990.

Program Committee, Second Workshop on Algorithms and Data Structures, Ottawa, Canada, August 1991.

Organizer and moderator, session on tenure and promotion, New Engineering Educators Division, 1992 Annual ASEE Conference, Toledo, Ohio, June 23, 1992.

Panelist, Evaluation of the GRE advanced test in computer science, Snowbird Conference '92, Computing Research Association, Snowbird, Utah, July 14, 1992.

Presenter, workshop on using motivation and cognition strategies to improve lectures, 1993 Annual ASEE Conference, Urbana, Ill., June 22, 1993.

Organizer and presenter, Workshop on Effective Teaching in Computer Science and Engineering, Computing Research Association, Snowbird, Utah, June 7–9, 1995. This workshop drew 30 participants who had recently begun academic careers. Sessions on learning styles, effective lecturing, advising thesis students, instructional objectives, creative problem solving in groups, and evaluation.

Program Committee, Fourth Workshop on Algorithms and Data Structures, Ottawa, Canada, August 1995.

Chair, Working Group on Theory of Computing, ACM Workshop on Strategic Directions in Computing Research, Cambridge, Mass., June 14–15, 1996.

Chair, Organizing Committee, Mini-conference on Ethics in Engineering and Computing, Sixth Annual Meeting of the Association for Practical and Professional Ethics, Washington, D.C., March 8–9, 1997.

Panelist, Conference on Managing Research Integrity, Ann Arbor, Mich., February 10, 1998.

Panelist, *IEEE Spectrum* roundtable on education in engineering ethics, Dallas, Tex., March 1, 1998. W. Sweet, Educating ethical engineers, *IEEE Spectrum*, vol. 35, no. 6, pp. 51–61, June 1998.

Organizer and moderator, dialogue session on privacy and community on-line, Second Annual Summit of the Communitarian Network, Washington, D.C., February 28, 1999.

Co-organizer, panel on ethics and design, International Conference on Ethics in Engineering and Computer Science, Cleveland, Ohio, March 23, 1999.

Co-moderator, *IEEE Spectrum* roundtable on ethics, intellectual property, and information technology, Cleveland, Ohio, March 24, 1999. J. R. Herkert and M. Loui, The ethics of intellectual property and the new information technologies, *IEEE Spectrum*, vol. 36, no. 8, pp. 29–37, August 1999.

Director, Science and Engineering Education Scholars Program, Urbana, Ill., June 26–30, 2000. This program helped 23 participants from nine universities prepare for academic careers in science and engineering. Sessions on academic duties and careers at different kinds of institutions, on learning styles, on teaching portfolios, on instructional objectives and course design, on innovative approaches to teaching and teaching with technology, on assessment, on finding an academic job, and on balancing personal and professional lives.

Organizing Committee, Complexity, Logic, and Computation Symposium, Boston, Mass., June 15, 2001.

Program Committee and organizer, panel on ethical and social issues criteria in academic accreditation, IEEE International Symposium on Technology and Society 2001, Stamford, Conn., July 6–7, 2001.

Program Committee, IEEE International Symposium on Technology and Society 2002, Raleigh, N.C., June 6–8, 2002.

Organizer, Regional Meeting of the IEEE Society on Social Implications of Technology, Urbana, Ill., April 4, 2003.

Program Committee, IEEE International Symposium on Technology and Society 2004, Worcester, Mass., June 17–19, 2004.

Panelist, Weaving SoTL into students' lives, Inaugural Conference of the International Society for the Scholarship of Teaching and Learning, Bloomington, Ind., October 21–24, 2004.

Program Committee, track on computer ethics and human values, Twenty-First ACM Symposium on Applied Computing, Dijon, France, April 23–27, 2006.

Program Committee, IEEE International Symposium on Technology and Society 2006, New York, N.Y., June 9–10, 2006.

Session synthesizer, Clickers (student response systems), 2006 Conference of the International Society for the Scholarship of Teaching and Learning, Washington, D.C., November 9–12, 2006.

Panelist, Ethics in higher education administration, Sixteenth Annual Meeting of the Association for Practical and Professional Ethics, Cincinnati, Ohio, February 22–25, 2007.

Program Committee, Workshop on Philosophy and Engineering, Delft, The Netherlands, October 29–31, 2007.

Presenter, Pedagogical demonstration: role-play scenarios for teaching responsible conduct of research (with B. J. Brummel, C. K. Gunsalus, K. L. Kristich), Seventeenth Annual Meeting of the Association for Practical and Professional Ethics, San Antonio, Tex., February 21–24, 2008.

Co-presenter, Development and assessment of role-play scenarios for teaching responsible conduct of research (with B. J. Brummel, C. K. Gunsalus, K. L. Kristich), First Biennial Responsible Conduct of Research Education, Instruction, and Training Conference, St. Louis, April 17–19, 2008.

Public Service

Interviewer for Hertz Foundation graduate fellowships, January 1990, December 1991, December 1992.

Panelist, Research Initiation Awards, Division of Computer and Computation Research, National Science Foundation, March 1990, March 1992.

Site visitor, to evaluate a project at Southern Connecticut State University for the National Science Foundation, April 1994.

Panelist, NSF Young Investigator Awards, Directorate for Computer and Information Science and Engineering, National Science Foundation, May 1994.

Appraisals consultant, Ontario Council on Graduate Studies, to evaluate a proposed M.Sc. program in Computer Science at McMaster University, May 1995.

Member, Committee of Visitors, Division of Computer and Computation Research, National Science Foundation, July 1996.

Member, review team, graduate program in Computer Science, Loyola University Chicago, February 1999.

Consultant, Tennessee Board of Regents, to evaluate a proposed Ph.D. program in Computer and Information Systems Engineering at Tennessee State University, June 1999.

Member, review team, graduate and research programs in College of Engineering, Michigan State University, October 2000.

Chair, review team, graduate program in Computer Science, Indiana University Purdue University Indianapolis, February 2001.

Panelist, Research Experiences for Undergraduates Site Awards, Directorate for Computer and Information Science and Engineering, National Science Foundation, December 2001.

Panelist, Course, Curriculum, and Laboratory Improvement Program, National Science Foundation, July 2002, July 2003.

Panelist, Nanoscale Science and Engineering Centers Program, National Science Foundation, December 2003.

Panelist, Nanoscale Interdisciplinary Research Teams and Nanoscale Exploratory Research, National Science Foundation, March 2004, March 2006.

Panelist, Societal and Educational Implications of Scientific and Technological Advances on the Nanoscale, National Science Foundation, January 2005.

Member, review committee, *On Being a Scientist*, The National Academies, since 2007.

Current Service on Campus (2008–09)

Campus Honors Program Advisory Committee, Center for Writing Studies Advisory Committee, Leadership Center Coordinating Committee, Leadership Center Integrity Program (co-lead facilitator), Center for Professional Responsibility in Business and Society Faculty Advisory Committee, NCA Accreditation Subcommittee on Leadership for the 21st Century (chair), College Teaching Effectiveness Network (faculty advisor)

Selected Previous Service on Campus³

Chair, Computer Engineering Area Committee, Department of Electrical and Computer Engineering, 1986–88. Initiated changes in the computer engineering curriculum.

Produced the first brochure for the Department of Electrical and Computer Engineering, 1987.

Organizer, “Science, Technology, and Cultural Values” panel series, Program for the Study of Cultural Values and Ethics, 1993–94.

Chair, Teaching Evaluation and Awards Committee, Department of Electrical and Computer Engineering, 1993–96. Created the department’s faculty teaching award.

Organizer, First and Second Undergraduate Research Symposia, Department of Electrical and Computer Engineering, 1995, 1996.

Chair, Teaching Evaluation and Improvement Subcommittee, College of Engineering, 1994–96.

Convener, Policy and Planning Committee, Coordinated Science Laboratory, 1996.

³ I have served as a member of many committees at the department, college, and campus levels. In the service activities listed here, I took a leadership role.

Associate Dean of the Graduate College, 1996–2000. Recommended and implemented policies; approved graduate courses and degree programs; counseled students and mediated conflicts; handled allegations of research misconduct; and managed people and resources at the Graduate College. Created the Outstanding Mentor Award, launched the Preparing Future Professors project, simplified the course approval process, and started cross-training and annual performance reviews of the staff. Organizer and presenter, “Successful Groups and Teams in the Classroom,” 2001. A series of workshops for faculty on cooperative learning techniques.

Consultative Committee to Assist in the Selection of a President, 2005.

Chair, Senate Library Committee, 2005.

Chair, Ad Hoc Committee to Explore an Interdisciplinary Minor in Leadership Studies, 2006.

Other

Member of more than sixty doctoral committees since 1983.

Reviewer for scholarly journals, conferences, publishers, and research funding agencies.

Reference for numerous faculty candidates and candidates for promotion.

Civic and Community Activities

M.I.T. Community Players: Boatswain in *HMS Pinafore*, stage manager for two one-act plays, 1980.

Illinois Opera Theater: chorus member in *The Magic Flute* and in *Amahl and the Night Visitors*, 1981.

Science Committee, Yankee Ridge School PTA: demonstrations and experiments, 1993–97.

Children’s Choir, Unitarian-Universalist Church of Champaign-Urbana: volunteer pianist and music arranger, 1999–2000, 2001–02; volunteer director, since 2002.

University Laboratory High School: taught week-long Agora Days classes on ballroom dance and on professional ethics, since 2002; parent representative to Parent-Faculty Organization, 2003–04.

September 24, 2008