

Curriculum Vitae

HENRY MACKAY WALKER

March, 2010

Business Address

Dept. of Computer Science
Grinnell College
Grinnell, Iowa 50112-0806
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Legal Residence

1432 Summer Street
Grinnell, Iowa 50112
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5268 Meredith Drive
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Current Position

Samuel R. and Marie-Louise Rosenthal Professor of Natural Science and Mathematics, *2001-present*
Professor of Mathematics and Computer Science, *2006-present*
Chair, Department of Computer Science, *2006-present*
Professor of Mathematics and Computer Science, *1990-2006*
Chair, Department of Mathematics and Computer Science, *1990-1991*
Professor of Mathematics, *1987-1990*
Associate Professor of Mathematics *1980-1987*
Chair, Department of Mathematics, *1981-1983*
Assistant Professor of Mathematics, *1974-1980*
Grinnell College, Grinnell, Iowa

Sabbatical Positions

Visiting Professor, School of Computing and Information Technology
UNITEC Institute of Technology, Auckland, New Zealand, *April-May, 2003*
Senior Lecturer, Department of Computer Sciences, *1988-1989, Fall 1995;*
Summers 1990, 1991, 1992, 1993, 1996 University of Texas at Austin
Member of Technical Staff (MTS), *1980-1981*
Bell Telephone Laboratories, Piscataway, New Jersey

Previous Position

Lecturer, Department of Mathematics, *1973-74*
Massachusetts Institute of Technology, Cambridge, Mass.

Other Job Background

Computer Systems Analyst, Mobil Oil Corp., *Summer, 1969*
Undergraduate Teaching Assistant for the Computer Laboratory,
Williams College, *1968-69*
Independent Study in Mathematics under N.S.F., Wesleyan U., *Summer, 1968*

Education

UNIVERSITY OF IOWA, Iowa City, Iowa
M.S. in Computer Science, *June, 1979*
M.I.T., Cambridge, Mass., Ph.D. in Mathematics, *June, 1973*
Thesis title: Equivariant CW Complexes and Cohomology
Thesis advisor: Professor Franklin P. Peterson
Fellowships: N.S.F. Graduate Fellowship, Woodrow Wilson Fellowship,
N.S.F. Graduate Traineeship
WILLIAMS COLLEGE, Williamstown, Mass., A.B., Magna cum Laude with
Highest Honors in Mathematics, *June, 1969*

Honors Received

Sigma Xi, elected Associate Member, *1972*; elected Full Member, *1973*
Phi Beta Kappa, elected *1967-1968*
"Distinguished Graduate Award," Concord-Carlisle (MA) High School, *March, 1990*
Erastus C. Benedict First Prize in Mathematics, *1967*

- Publications** Author of regular columns on “Classroom Issues” and “Curricular Considerations” for *ACM Inroads*:
- Eight Principles of an Undergraduate Curriculum, Vol. 1, No. 1, March 2010, pp. 18-20
 - Wellness and the Classroom, Vol. 1, No. 1, March 2010, pp. 27-30.
- Editor, Vol. 42, No. 1 of the *SIGCSE Bulletin*, including author of all 8 articles
- Author of regular column on “Classroom Issues” for the *SIGCSE Bulletin*:
- Course Descriptions and Public Relations for Computer Science, Vol. 41, No. 2, June 2009, pp. 74-75.
 - Classroom issues: staying connected with the big picture, Vol. 40, No. 4, December 2008, pp. 18-20.
 - Advertising and Recruiting, Vol. 40, No. 2, June 2008, pp. 16-17.
 - What image do CS1/CS2 present to our students?, Vol. 39, No. 4, December 2007, pp. 18-19.
 - Reading and class work, Vol. 39, No. 2, June 2007, pp. 13-14.
 - Thoughts on Student Feedback to Help Teaching, Vol. 38, No. 4, December 2006, pp. 13-14.
 - Thoughts about Lecturing, Vol. 38, No. 2, June 2006, pp. 19-21.
 - What Should Be in a Syllabus?, Vol. 37, No. 4, December 2005, pp. 19-21.
 - Mathematics and CS Topics in the CS Classroom, Vol. 37, No. 2, June 2005, pp. 15-17.
 - Academic Honesty in the Classroom, Vol. 36, No. 4, December 2004, pp. 18-19.
 - What Teachers Should, Can, and Cannot Do, Vol. 36, No. 2, June 2004, pp. 20-21.
 - Do Computer Games Have a Role in the Computing Classroom, Vol. 35, No. 4, December 2003, pp. 18-19.
 - Lessons from the CUPM, Vol. 35, No. 2, June 2003, pp. 19-20.
 - Teaching and a Sense of the Dramatic, Act II, Vol. 34, No. 4, Dec. 2002, pp. 18-19.
 - Teaching and a Sense of the Dramatic, Vol. 33, No. 4, Dec. 2001, pp. 16-17.
 - Balancing the Forest and the Trees in Courses, Vol. 32, No. 4, Dec. 2000, pp. 17-18.
 - Notes on Grading, Vol. 32, No. 2, June 2000, pp. 18-19.
 - Guided Reading and Seminar Issues, Vol. 31, No. 4, Dec. 1999, pp. 27-28.
 - Finding Interesting Examples and Assignments for CS1.2 Assignments, Vol. 31, No. 2, June 1999, pp. 24-25.
 - The Balance Between Programming and Other Assignments, Vol. 30, No. 4, Dec. 1998, pp. 23a-25a.
 - Writing Within the Computer Science Curriculum, Vol. 30, No. 2, June 1998, pp. 24-25.
 - Finding Interesting Examples and Assignments for CS 1/2 Assignments, Vol. 31, No. 2, June 1999, pp. 24-25.
 - A Racquetball or Volleyball Simulation, Vol. 29, No. 4, Dec. 1997, pp. 22-23.
- with Charles Kelemen, On the Philosophy of Computer Science within the Liberal Arts, *ACM Transactions on Computing Education* (to appear, Spring 2010).
- Advisor and mentor on student posters presented at ITiCSE 2007, Dundee, Scotland 25-27 June 2007
- Christine Wang, Eric Omwega, Jonathan Tsu, Monica Ugwi, Automation of PE Recruiting Process, Vol. 39, No. 3 *SIGCSE Bulletin*, Sept. 2007, p. 350
 - ITiCSE 2007 Award: Outstanding Student Poster – Software Development
 - Christine Wang, Eric Omwega, Monica Ugwi, Jonathan Tsu, Development of an Online Campus Map, Vol. 39, No. 3 *SIGCSE Bulletin*, Sept. 2007, p. 351
 - ITiCSE 2007 Award: Outstanding Student Poster – Inclusive Technology

**Publications,
continued**

- with the Liberal Arts Computer Science Consortium, A 2007 Model Curriculum for a Liberal Arts Degree in Computer Science, *Journal on Education Resources in Computing (JERIC)*, Vol. 7, Issue 2, Article 2.
- with Kevin Engel, Research Exercises: immersion experiences to promote information literacy, *Journal of Computing Sciences in Colleges*, Vol 21, Issue 4, April 2006, pp. 61-68
- with David Levine, XP practices applied to grading *SIGCSE Bulletin*, Vol 38, Issue 1, March 2006, pp. 173-177
- The Tao of Computing: A Down-to-earth Approach to Computer Literacy, Jones and Bartlett Publishers, 2005.
- with Kevin Engel, Research Exercises: A sequenced approach to just-in-time information literacy instruction, *Research Strategies*, Vol 19, Issue 2, July 2004, pp. 135-147
- with Weichao Ma and Dorene Mboya, Variability of Referees' Ratings of Conference Papers, *SIGCSE Bulletin*, Vol 34, No. 3, June 2002. 178-182.
- Notes on the Academic Job Market and Hiring Strategies, *SIGCSE Bulletin*, Vol. 30, No. 4, Dec. 2001
- with Weichao Ma and Dorene Mboya, Abstract of "On-line Paper Submission, Paper Reviewing, and Rating Variability", Joint Mathematics Meetings, January, 2001.
- with Paul Myers, The State of Academic Hiring in Computer Science: An Interim Review, *SIGCSE Bulletin*, Vol. 30, No. 4, Dec. 1998, pp. 32a-36a.
- Modules to Introduce Assertions and Loop Invariants Informally Within CS1: Exp. and Observations *SIGCSE Bulletin*, Vol. 30, No. 2, June 1998, pp. 31-35.
- with G. Michael Schneider, A Revised Model Curriculum for a Liberal Arts Degree in Computer Science, *Comm. of the ACM*, Vol. 39, No. 12, Dec. 1996, pp. 85-95.
- Collaborative Learning: A Case Study for CS1 at Grinnell College and UT-Austin, *SIGCSE Bulletin*, Vol. 29, No. 1, March 1997, pp. 209-213
- with Nell Dale, Abstract Data Types: Specification, Implementation, and Application, Jones and Bartlett, February 1996.
- with Vikram Subramaniam & Ivan Sykes, An Expert System to Place Incoming Students in Math and CS Classes, *J. of CS Ed.*, Vol. 5, pp. 137-148 (1995).
- with Nell Dale, A Classification of Data Types, *Journal of Computer Science Education*, Vol. 3, No. 3., 1992, pp. 223-232.
- The Limits of Computing, Jones and Bartlett Publishers, Inc., 1994
- with Nell Dale, A Classification of Data Types, University of Texas at Austin Technical Report, *TR-90-17*, June, 1990
- Computer Science 2: Principles of Software Engineering, Data Types, and Algorithms, Little, Brown/Scott, Foresman, 1989
- Pascal: Problem Solving and Structured Program Design with Instructor's Manual and Transparency Masters, Little, Brown & Co., 1987
- Introduction to Computing and Computer Science with Pascal and accompanying Instructor's Manual, Little, Brown and Co., 1986
- Developing and Teaching an Advanced Placement Computer Science Course
Invited address: 1985 World Conf. on Comp. in Ed., Norfolk, VA, July, 1985
- Facilitating the Transition from High School Programming to College Computer Science. Presented at the 1985 Computer Science Conference (CSC)
- CS Curricula for Diverse Groups of Students. 1984 CSC
- with David Reiner, Staffing a Computers in Society Course 1983 CSC
- with David Reiner, Computers in Society vs. Social Issues in Computing. 1983 CSC
- Administering a Distributed Data Base Management System, *SIGMOD Record*, Vol. 12, No. 3, April 1982, pp. 86-99.

- Publications, continued**
- An Interdisciplinary Approach to Introductory Programming Courses, *SIGCSE Bulletin*, Vol. 13, No. 3, *September 1981*, pp. 40-44.
- Problems for Computer Solutions Using BASIC (Winthrop Publishers, Inc., Cambridge, Mass.), *February, 1980*.
- Problems for Computer Solutions Using FORTRAN (Winthrop Publishers, Inc., Cambridge, Mass.), *March, 1980*.
- An Equivariant Serre Spectral Sequence, *A.M.S. Notices*, Vol. 21, No. 3, *April, 1974*, pp. A-405.
- An Equivariant Serre Spectral Sequence (Preprint)
- Equivariant Classifying Spaces and Obstruction Theory, *A.M.S. Notices*, Vol. 20, No. 6, *October, 1973*, page A-609.
- Equivariant Cellular Homology and Cohomology and Classifying Spaces (Preprint)
- Equivariant CW Complexes and Cohomology. (Thesis) M.I.T., *1973*.
- Visiting Lecturer Programs**
- Pew Midstates Mathematics and Science Consortium, Speaker Series
Visit to Carthage College (3 talks and consultation), *February 15-16, 2007*.
- Visiting Professor, School of Computing and Information Technology
UNITEC Institute of Technology, Auckland, New Zealand, *April-May, 2003*
- Invited Lecturer and Guest at various secondary schools, speaking with teachers and to various mathematics and computer science classes:
Glenbrook (IL) School High Schools *1985*, New Hampton (IA) High School *1988*, Lamar Junior High (Austin, TX) *1988, 1989*, Turkey Valley (IA) Community Schools *1990–1992*, Concord-Carlisle (MA) High School *1990*, Montezuma Schools *1991, 1994*, Grinnell Schools *1993, 1997*, Trinity School (Minneapolis, MN), *2003*
- Invited Lecturer on “Can Computers Think?”, Linda-Hall Library, Kansas City, December 1999.
- Participant, Grinnell-Nanjing Faculty Exchange Program, May-June, 1995
- Lecturer for the Iowa Section of the M.A.A., *1975-1980*
- Lecturer for the Visiting Mathematicians Program of the Associated Colleges of the Midwest, *1976, 1977, 1978-1980*
- Reviewing Activities**
- Reviewer of textbooks for several publishers
Addison Wesley Longman (computer science), *1997-2000*
Little, Brown and Company (computer science), *1982-1988*
HarperCollins/Harper and Row (computer science), *1983-1996*
D.C. Heath and Company: (comp. sci.) *1985-1995*; (math), *1986-1995*
Jones and Bartlett Publishers (computer science), *1989-present*
McGraw-Hill Publishers (computer science), *1996-2000*
Reston Publishing Inc. (computer science), *1981-1985*
Winthrop Publishers Inc. (computer science), *1980-1983*
W.W. Norton & Co., (mathematics), *1975, 1976*
- Referee of computer science papers
National Educational Computing Conference, *1985-present*
SIGCSE Technical Symposium in CS Education, *1986-present*
- Referee of mathematics papers
The American Mathematical Monthly, *1985-1986*
Advances in Topology, *1976*

**Teaching
Experience**

Taught Tutorials on Computers; Intro. to BASIC Programming; Problem Solving and Computing (with LOGO); An Algorithmic and Social Overview of Computer Science, Intro. to Pascal Programming; Intro. to Computer Science (with Pascal); Fundamentals of Computer Science I and II; Computers in Society; Programming Language Concepts; Imperative Problem Solving and Data Structures; Representation, Storage Management, and C Programming; Software Design; Algorithms and Data Structures; Computer Architecture and Operating Systems; Parallel Algorithms; X Windows and C Programming; Theory of Computation; Operating Systems and Parallel Algorithms; Data Representation, Storage Management, and Formal Methods; Databases and Web Application Design; Algebra and Trigonometry; Calculus I/II; Calculus and Probability I/II; Linear Algebra; Differential Equations; Abstract Algebra I and II; Complex Analysis; Topology; Real Analysis; Problem-Solving;

Independent projects in Numerical Analysis, Compilers, Software Engineering, Data Bases, the Theory of Computation, Artificial Intelligence, Expert Systems, Neural Networks, Process Communication Using Sockets, Personal Desk Assistants (PDAs), Computer Networks, Neural Computation, User-centered Software Design, Drupal-based Web Development at Grinnell College, *1974-1980, 1981-1988, 1989-2002, 2004-present*

Lectured on Extreme Programming, Expert Systems, Neural Networks, Pedagogy for Teaching Research Methods, and Computer Literacy at UNITEC Institute of Technology, Auckland, New Zealand, *April-May, 2003*

Taught Data Structures (1988-89, Summer 1993, Fall 1995), Analysis of Programs (1988-1989 and Summer, 1990), Prog. Lang. (Summers, 1991, 1992, 1996), and Abstract Data Types (Fall, 1995) at the Univ. of Texas at Austin

- General** Contributor to MAA Committee on Consultants
- Consulting** Writer of LaTeX template for reports of external reviewers, for MAA Report, *Guidelines for Serving as a Consultant in the Mathematical Sciences*, Spring, 2009.
- Activities** Member of the MAA Committee on the Profession, 2003-2009
 Member of the Ad-Hoc Committee to Draft an MAA Ethics Statement, 2005-2007
 Member of the NSF-funded Faculty Recruitment and Retention Study Group, organized by the Computing Research Association, 2001-2002
 Contributor to *Computing Curriculum 2001* by ACM/IEEE-CS
 Member of the Task Force on Mathematics and Science, 1999-2000
 Chair of Pedagogy Focus Group 2, Supporting Courses, 1999-2001
 Consultant to Kalamazoo College regarding computer science program and personnel, with support from the Pew Midstates Consortium, *November, 1997*
 Reviewer of new computer science curriculum for Pepperdine University, *Fall, 1997*
 Consultant to the Chancellor of the University of Maine System regarding a new computer science major, proposed by the University of Maine at Farmington.
 Panelist for Review of N. S. F. Proposals:
 CCD Proposals: July 1994; CCD/UFE Proposals: July 1995;
 ILI Proposals: January 1996
 CCLI Proposals: January 1999, August 1999, July 2000, July 2004, July 2005
 CSEMS Proposals: May 2001
 Outside Reviewer/Evaluator:
 Math/CS Dept., Hendrix College, Conway, AR *January, 2010*
 CS Dept., Hamilton College, Clinton, NY *Spring, 2009*
 CS Program, Nebraska Wesleyan University, Lincoln, NE *Spring, 2009*
 Math/CS Dept., University of the South, Sewanee, TN *Fall, 2008*
 CS Dept., Colby College, Waterville, ME *Spring, 2008*
 CS Dept., Willamette University, Salem, OR *Fall, 2007*
 CS Dept., Washington and Lee University, Lexington, VA *Spring, 2007*
 Math/CS Dept., Moravian College, Bethlehem, PA *Fall, 2006*
 Math/CS Dept., Wheaton College, Norton, MA *Fall, 2005*
 Math/CS Dept., Stetson University, DeLand, FL, *Spring, 2005*
 Math/CS Dept., Southwestern University, Georgetown, TX, *Spring, 2005*
 CS Program., Franklin and Marshall College, Lancaster, PA, *Fall, 2004*
 Math/CS Dept., Creighton University, Omaha, NE, *Spring, 2004*
 Math/CS Dept., Concordia College, Moorhead, MN, *Spring, 2004*
 CS Dept., College of St. Benedict and St. John's Univ., Collegeville, MN, *Spring, 2003*
 CS Dept., Univ. of Hawaii at Hilo, HI, *Fall, 2002*
 Math/CS Dept., St. Olaf College, Northfield, MN, *Spring, 2002*
 Math/CS Dept., Loras College, Davenport, IA, *Spring, 2002*
 Math/CS Dept., Dickinson College, Carlisle, PA, *November, 2001*
 Math/CS Dept., Kalamazoo College, Kalamazoo, MI, *April, 2001*
 Math/CS Dept., Bates College, Lewiston, ME, *March, 2001*
 Math/CS Dept., Hendrix College, Conway, AR, *October, 2000*
 Math/CS Dept., University of San Diego, *February, 2000*
 CS Dept., University of Northern Iowa, *February, 2000*
 Math/CS Dept., Juniata College, Huntingdon, PA, *Fall, 1997*
 Math/CS Dept., Wheaton College, Wheaton, IL, *Fall, 1996*
 Math/CS Dept., Gustavus Adolphus College, St. Peter, MN, *Fall, 1994*
 Math/CS Dept., Ursinus College, Collegeville, PA, *Winter-Spring, 1993*
 CS Dept. Anderson University, Anderson, IN, *Winter-Spring, 1991*

- General** Interviews on *The Limits of Computing*:
Consulting *Drive Time Des Moines*, WHO Radio, October 12, 1994
Activities, *Talk of Iowa*, WOI Radio, October 29, 1994;
Continued Christian Science Monitor: for February 16, 1994 article
- Professional Meetings** Regularly attend ACM/SIGCSE Technical Symposia on CS Education
 Chair for Workshops and Tutorials, 1991 and 1994; for Panels, 1995
 Program Chair for SIGCSE 2000
 Symposium Chair for SIGCSE 2001
 Database Administrator and Software Consultant for SIGCSE 2002-present
 Regularly attend ACM/SIGCSE Conference on Innovation and Technology in
 Computer Science Education (ITiCSE)
 Chair for Tips and Techniques for ITiCSE 2003
 Chair for First-timer Activities for ITiCSE 2004
 Chair for Tutorials for ITiCSE 2005
 Chair for Student Posters for ITiCSE 2006, ITiCSE 2007, ITiCSE 2008
 Database Administrator and Software Consultant for ITiCSE 2005-present
 Participant, Rebooting Computing Summit, Mountain View, CA, January 2009
 Panelist, “Advanced Placement Computer Science: The Future of Tracking
 the First Year of Instruction”, SIGCSE 2009, the SIGCSE Bulletin,
 Vol. 41, No. 1, March 2009.
 CS2 Workshop for Computer Science Faculty, Denison University, June 16-17, 2008,
 funded by the Andrew Mellon Foundation.
 Keynote Speaker, “CS2: Why, What, and How?”
 Panelist, “Why Computer Games should be BANNED
 in the Undergraduate CS Curriculum”
 Panelist, “A Lab-based Introduction to Computer Science
 that Emphasizes Collaboration”
 Panelist, “Games: Good/Evil”, a debate on the role of computer games in the
 undergraduate curriculum, SIGCSE 2008, the SIGCSE Bulletin, Vol. 40, No. 1,
 March 2008.
 Invited Participant, Education Summit of the Computing Research Association,
 January 4-5, 2007, Atlanta, GA
 Attendee, ACM/SIGCSE International Computing Education Research Workshop
 ICER 2005: Oct. 1-2, 2005, University of Washington, Seattle, WA
 ICER 2006: Sept. 2-10, 2006, University of Kent, Canterbury, UK
 Invited Participant, Department Chairs Conference, Macalaster College,
 October 20-22, 2006.
 Invited Participant, NSF Integrative Computing Education and Research
 Workshop - Midwest Region, December 2-3, 2005 Chicago, IL
 Panelist, “A 2003 Model Curriculum for a Liberal Arts Degree in Computer
 Science”, CCSC-Midwest 2003 and SIGCSE 2004
 Invited speaker, “Getting Published in CS Education Conferences”,
 CCSC-Midwest 2003, October 3, 2003, and Iowa Undergraduate Computer
 Science Consortium meeting, October 25, 2003.
 Invited speaker (talks on three different topics), Macalaster College,
 November 18-19, 2003.
 Panelist, “Serving as a Department Head”, SIGCSE 2003
 Panelist on invited panels on “Math Educators, CS Educators: Working Together”,
 at Joint Mathematics Meetings, January 2003 and SIGCSE 2003.

- Conference on Computer Science in the Next Decade at Hope College,
November 15-17, 2002, sponsored by the Pew Midstates Consortium
Keynoter, *Faculty Development Workshop on Computer Science
in the Next Decade*,
Invited Speaker *Challenges for Faculty Recruitment in Computer Science*
Panelist, “Writing a Textbook”, ITiCSE 2002.
- Invited Panelist, “Faculty Isolated by Discipline”, Joint Math. Meeting, Jan. 2001
Panel Organizer, “The State of Academic Hiring in Computer Science”, SIGCSE ’99.
Regularly attend meetings of the Iowa Undergraduate Computer Science Consortium
Consortium Organizer, 1994; Program Facilitator, 1994, 1999, 2002
Invited Panel Organizer, “Issues Faced by Departments with an Undergraduate Focus”,
CRA-Snowbird Conference for Computer Science Department Heads, July, 1998.
Panel Organizer, “Approachers for Encouraging High School/College Faculty
on Interaction,” SIGCSE ’98.
- Invited Participant, Working Group on “Computer Mediated Communication
in Collaborative Educational Settings” at SIGCSE Conference on Integrating
Technology into Computer Science Education, Uppsala Sweden, June 1997
Keynote Speaker on “Formal Methods in the CS Curriculum” at CCNY Conf.
on “Formal Methods in the Early CS Curriculum at CCNY”, Sept. 1995.
Invited Speaker on the CS major within a liberal arts setting at Midwest Small College
Computing Conference, Sept. 1995 and at three universities in 1995-1996.
Co-organizer, Curricular Development Workshop on “Formal Methods in CS”
Hamilton College, Summer 1994 and Summer 1996, as part of NSF Grant.
Panel Organizer, “CS Education in the People’s Republic of China,” SIGCSE ’95
Panel Organizer, “The CS Major within a Liberal Arts Environment,” SIGCSE ’94.
Panel Organizer, “The Role of Rigorous Methods and Mathematics
in the Undergraduate CS Curriculum,” SIGCSE ’94.
- Organizer, Iowa Undergraduate CS Consortium, *Winter-Spring, 1994*
Organizer and Leader of Tutorial and Workshop on “Program Verification,”
ACM Technical Symposium on CS Education, *February, 1990, March, 1991*
Invited Participant, Workshop on Computer Science in the Liberal Arts, Williams
College, *July, 1987* and *August 2001*; Washington & Lee College, *July, 1988*
and *June, 1993*; Hamilton College *June, 1989*; Calvin College *July, 1990*;
Swarthmore College *June, 1994*; Dartmouth College *July, 1996*; Dickinson
College *June 1998*; Oberlin College *June 1999*, Bowdoin College, *June 2000*;
RIT *August 2005*; Creighton University *August 2006*;
SUNY Geneseo, *July 2007*, Pomona College, *July 2008*
Organizer for Grinnell College Meetings, *June, 1991; August, 2002*;
Program Chair for meetings at SUNY-Geneseo, *June, 1992*,
Calvin College *August 2003*
- Organizer and Leader on Workshop on “Program Verification,” SIGCSE ’90 and ’91
Panelist on “Faster, Fairer, and More Consistent Grading, Using Techniques
from the Advanced Placement Reading,” SIGCSE 1990
Participant in St. Olaf Conference on “Computers in Calculus,” Oct. 1989
Invited Speaker for Four Talks, Illinois Council of Teachers of
Mathematics, Champaign-Urbana, *October, 1987*
Organizer and Chair, Session on “Joint Majors in Computer Science”, SIGCSE 1987
Invited Participant and Speaker, Sloan Workshop on Computer Science
in the Liberal Arts, Allegheny College, *July, 1986*
Invited Participant, Sloan Workshop on a CS Major Curriculum
for Liberal Arts Colleges, Colgate University, *June, 1985*
Invited Participant, Panel on “A Model Curriculum for a Liberal Arts
Degree in CS,” Joint Math. Meetings, New Orleans, *January, 1986*

Invited address on “Developing and Teaching an Advanced Placement Computer Science Course”, World Conf. on Comp. in Ed. Norfolk, VA, *July, 1985*
 ACM Special Interest Group Conferences on Databases: *1982 and 1983*;
 Programming Languages: *1980*; Compiler Construction: *1979*
 Regularly attend the Midwest Topology Conference, 1974-1978
 Regularly attend Iowa Section, M.A.A. Meetings
 Organizer of Session on Professional Ethics, *April 2007*
 Paper on Teaching Introductory Programming, *April, 1980*
 Attended Carleton Conference on Artificial Intelligence, *1984*
 Attended Fifth Berkeley Workshop on Distributed Data Management and Computer Networks, *February, 1981*
 Attended A.M.S.-M.A.A. National Mathematics Meetings, *January, 1977; January, 1980; January, 1986; January, 1987; January, 2001 - 2008*
 Attended conference on Undergraduate Computer Science Curricula at the University of Iowa, *October, 1976*
 Organized Topology Seminar at M.I.T., *Fall, 1972 and 1973*

Grants

Furbush Faculty Scholar, Grinnell College, 2002-2003.
 Author and co-PI for Preparing Future Faculty (PFF) Program grant to a consortium of 5 Iowa Colleges and Universities for the improved training of computer science graduate students for academic careers, 1999-2001.
 Author and Program Director for \$19,394 grant from the Roy J. Carver Charitable Trust to develop and lead a summer workshop for high-school, computer-science teachers, June 1997
 Author and Program Director for \$90,000 Noyce Foundation Grant to develop workshops for high-school, computer-science teachers to improve CS education in secondary schools; 252 registrants in 8 workshops, 1995-1997
 Co-Author & Senior Investigator for NSF Grant CDA 9214874, *Integrating Object-Oriented Programming and Formal Methods into the Computer Science Curriculum*.
 Co-Director, NSF Grant CSI-8750715 and Grants from the Culpeper and Keck Foundations to Grinnell College for *Using Powerful Computer Software in a Laboratory Environment to Develop Mathematical Insight.*, 1987-1988.
 Annual grants from the Grinnell College Grant Board for publishing expenses
 Grants from Little, Brown and Company for release time for writing textbooks, *1984-1986, 1987-1988*
 Support from Grinnell College’s Exxon Educational Foundation grant for secretarial expenses for textbook preparation *1985-1986*

Experience in Industry

Bell Laboratories, Facility Assignment and Control Systems (FACS)
 Worked on the development of a large, commercial, distributed data base management system, concentrating in the areas of system and data base administration. Responsibilities included: definition of the tasks needed to administer the system, review of software to perform the tasks, design of the documentation to support these tasks, writing major parts of manuals, monitoring component systems for consistency and usability from standpoint of system and data base administration.
 Mobil Oil Corporation
 Investigated the feasibility of incorporating Computer-Assisted Instruction (CAI) into the corporate training programming.

Activities to Support Secondary School Education	<p>Member, Development Committee for Advanced Placement Computer Science Examination, 2009-present</p> <p>Reader in Computer Science for the Advanced Placement (AP) Tests of the Education Testing Service (ETS), 1984-1995, 1999-present; Question Leader, 1986, 1992, 1995, 2009; Table Leader, 1985, 1987, 1988, 2005, 2006, 2007, 2008</p> <p>Reader in Mathematics for the AP Tests of ETS, 1975-1977, 1979-1980, 1982</p> <p>Member, AP Computer Science Development Committee, 2009-present</p> <p>Chair, AP Computer Science Course and Exam Review Commission, 2008-2009</p> <p>College Board Consultant in Mathematics and Computer Science, 1983-present</p> <p>Member of the Iowa Advanced Place Advisory Council, 1997-2004</p> <p>SIGCSE Representative to the Ad Hoc Advisory Committee on Future Directions for Advanced Placement Computer Science, 1999-2000.</p> <p>Leader of Advanced Placement Computer Science Workshop for high school teachers, organized by Ohio Society for Technology in Education, <i>June-July, 1998</i></p> <p>Developer and Leader of Summer Computing Workshop for High School Teachers, sponsored by the Roy J. Carver Charitable Trust, <i>June, 1997</i></p> <p>SIGCSE Representative to the Ad Hoc Advisory Committee for the transition of Advanced Placement Computer Science from Pascal to C++, 1995-1996.</p> <p>Developer and Leader of Workshops on Computing for High School Teachers, sponsored by the Noyce Foundation: General Workshops: Austin TX, <i>October 1994</i>; Des Moines IA, <i>March 1995</i> Edinburg TX, Cedar Rapids IA, El Paso TX, <i>March 1996</i>; Houston TX, <i>September 1996</i>; Advanced Workshops: Ames IA, <i>April 1996</i>, Austin TX, <i>October 1996</i></p> <p>Developer and Leader of Workshop on Advanced Placement Computer Science for High School Teachers, sponsored by UT-Austin and Texas Instruments, Dallas, TX, <i>February, 1992</i></p>
Programming Languages	<p>Experience in programming in each of the following languages: Ada, Algol, BASIC, C, C++, FORTRAN, Java, LISP, LOGO, ML, Modula-2, Pascal, Prolog, Scheme, UNIX Shell Language, various assembly and machine languages, JavaScript, VBScript, ASP, PHP, and related Web-based scripting languages MIL and SDL (on Burroughs B1700), SNOBOL (SPITBOL on IBM 360)</p>
Professional Societies	<p>Association for Computing Machinery (ACM)</p> <p>Special Interest Groups in: Computer Science Education (SIGCSE) Chair, 2001-2007; Immediate Past Chair, 2007-2010 Secretary/Treasurer, 1993-2001</p> <p>Software Engineering (SIGSOFT)</p> <p>Iowa Software Association, 1997-present</p> <p>Iowa Undergraduate Computer Science Consortium, Founder/member: 1995-present</p> <p>Mathematical Association of America (MAA)</p> <p>Computer Professionals for Social Responsibility (CPSR)</p>
Other Professional Affiliations	<p>Member, Liberal Arts Computer Science Consortium, 1985-present</p> <p>Hosted Consortium meeting, Summer 1991, Summer 2002</p> <p>Program Chair and Convener, 1991-1992, 2002-2003</p> <p>Reviewer, Report of the ACM/IEEE Joint Curriculum Task Force, 1988-1991</p> <p>Member, MAA/ACM/IEEE Task Force on the Teaching of Computer Science within Mathematics Departments, 1986-1988</p>