

Oberta A. Slotterbeck

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Department of Computer Science

Hiram College

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FORMAL EDUCATION AND DEGREES

Ph.D. (1969) The University of Texas at Austin, Mathematics: Group Theory

M.A. (1966) The University of Texas at Austin, Mathematics: Topology

B.S. (1958) Ohio State University, Majors: History, Psychology

PROFESSIONAL EXPERIENCE

Hiram College (1974-):

Professor and Chair, Computer Science Department (2000-

Professor of Mathematical Sciences/Computer Science (1982-2000)

Associate Professor of Mathematical Sciences/Computer Science (1977-82)

Assistant Professor of Mathematical Sciences/Computer Science (1974-77)

Chair Mathematical Sciences Department (1986-1989)

System Administrator for department workstations (1990-2000)

University of Texas at Austin (1983-84):

Sabbatical leave from Hiram College, Visiting Professor of Computer Science.

University of Florida (1969-73):

Assistant Professor of Mathematics (1970-73)

Postdoctoral Research Fellow in Mathematics (1969-70)

Member of the Graduate Faculty in Mathematics (1970-73).

University of Texas at Austin (1964-69):

Teaching Associate of Mathematics (1967-69)

Teaching Assistant of Mathematics (1964-67)

Computer-Assisted Instruction Project Programmer, Education Department (1964-67)

Freelance programming for various professors (1966-69)

Union County Regional High School District #1, Springfield, New Jersey (1960-64):

Teacher of mathematics and gifted program (1962-64)

Educational Testing Director (1962-64).

Teacher and founder of educable program (1960-62)

Columbus Public School System, Ohio (1958-60):

Teacher of junior high educable class.

GRANTS

CERIAS Security Bootcamp for Professors, grant to attend 4 day workshop, conducted by Cisco Systems and the Critical Infrastructure Assurance Group, Purdue University, summer, 4 days, 2004.

Fiat Lux Grant, "Investigating a Computer Art Minor at Hiram College", \$5000, June, 2001, with Ellen Walker and Linda Bourassa.

National Science Foundation, CCLI-A&I, "Extending Software Engineering Teamwork Beyond Physical and Curricular Boundaries", June 1, 2000 - May 31, 2002, PIs Oberta A. Slotterbeck and Ellen L. Walker, \$69,140.

SEED Program, Rational Software, received Rational Suite software package worth \$14,995, May 1999

Additional equipment of one DECStation 3100, 5 VT1200 Monochrome X-windows terminals and 1 VT1300 Color X-windows terminal supplied by DEC as a grant when Hiram College purchased a DECStation 3100 and a VaxStation 3100 for graphics work, 1990.

Grant from Digital Equipment Corporation for 5 DEC GIGI 8-color graphics machines (estimated worth of \$3500 X 5 = \$17,500) plus software (estimated worth of \$15,000), 1981.

National Science Foundation CAUSE, "Science Curriculum Development Through Computer Methodology", \$249,900 granted to Hiram College, PI Wendell Johnson. Served as Faculty Workshop Director, 1982, 1983.

Numerical Analysis and Computer Symbolic Computation", PIs Richard Varga and Paul Wang, Kent State University. Served as consultant for summers of 1981, 1982.

PUBLICATIONS

(With Ellen L. Walker) "Integrated Research Components: A Practical and Effective Alternative to Senior Projects" *Journal of Computing Sciences in Colleges*, Volume 22, Number 1, pp. 72-83, October 2006.

(With Ellen L. Walker) "Supporting Large Projects in a Small College Computer Systems Management Program," *Journal of Computing Sciences in Colleges*, Volume 19, Number 1, pp 113-121. October 2003.

(With Ellen L. Walker) "[Incorporating Realistic Teamwork into a Small College Software Engineering Curriculum.](#)" *Journal of Computing in Small Colleges* , Volume 17, Number 6, pp. 115-123, May 2002.

(With J. W. Baker and R. Aron) "Computing the Tsirelson Space Norm", Computer Aided Proofs in Analysis, edited by K. R. Meyer and D. S. Schmidt, IMA Volumes in Mathematics and its Applications (Volume 28), Springer-Verlag, 1991, p. 12-21.

(With J. W. Baker and R. Aron) "An Algorithm for Computing the Tsirelson's Space Norm", published as Appendix B (44 pages) in Tsirelson's Space by P. Casazza and T. Shura, Lecture Notes in Mathematics, 1989.

(With J. W. Baker) "Providing a Complex Number Environment for MACSYMA and VAXIMA", Proceedings of the 1984 MACSYMA Conference, 1984, General Electric, Schenectady, New York. p. 39-49.

(With S. Ligh and B. McQuarrie) "On Near Fields", Journal of the London Mathematical Society (2) 5 (1972), 87-90.

"Finite Factor Coverings of Groups", Journal of Algebra, 17 (1971), 67-73.

PRESENTATIONS

(With Ellen L. Walker) "Integrated Research Components: Ensuring That All Students Can Have a Research Experience," SIGCSE Technical Symposium on Computer Science Education, Norfolk, VA. Poster presentation. March 2006.

"Parallel Computing: A Bigger Ox or More Oxen", Presentation to *Connecting with Science Freshmen Seminar*, Hiram College, November 2004.

"Using the Internet for Genealogical Research", Invited to present two workshops during the winter break for the Boca Grande Woman's Club, Boca Grande, Florida, December 2003.

"CyberTerrorism," Presentations in two of Greg Szulgit's courses "Bioterrorism & Biowarfare", a Freshmen Seminar classes, Hiram College, March 2003, 2002

Panel participant (invited): "Encouraging Undergraduate Research in Computer Science", SIGCSE Technical Symposium on Computer Science Education, SIGCSE, February, 2002, Covington, KY.

"Internships in Computer Science," Panel presentation with E. Walker, M. Atwah and students), Hiram College ACM, Hiram College, September 2001.

(With Ellen L. Walker) "Extending Software Engineering Teamwork Beyond Physical and Curricular Boundaries," SIGCSE Technical Symposium on Computer Science Education, Charlotte, NC. Invited poster presentation as part of the NSF CCLI Project Showcase, February 2001.

Hiram College Library Forum talk entitled "Software Engineering in an Undergraduate Environment", 1999.

“A Smart Graduate School Application,” Panel presentation with Ellen and Maher Atwah), Hiram College ACM, Hiram College, 1999

“Conversing with a Computer: Dealing with a Modern Day Tower of Babel”, admissions talk, Hiram College, invited, yearly in the period 1990-1998.

Mathematics Colloquium, Universidad De Seville, Department of Mathematics, Seville, Spain. "A Computer Algorithm for Calculating the Tsirelson Space Norm", September, 1992. (Invited)

Computer Algebra Conference, sponsored by Universidad Politecnica de Madrid and Universidad De Alcada, Madrid, Spain. Presented: "Adding a Complex Number Environment to MACSYMA", September, 1992. (Invited)

"Computing the Tsirelson Space Norm- An Update", Conference in Computer Aided Proofs in Analysis, University of Cincinnati, May, 1989 (With J. W. Baker and R. Aron) (Invited)

"Computing the Tsirelson Space Norm", International Conference on Banach Spaces and Classical Analysis, Special Session on Using Computers in Mathematical Research, Kent State University, Summer, 1985 (With J. W. Baker and R. Aron) (Invited)

"A Computer Algorithm for the Tsirelson Space Norm", Mathematical Association of America Sectional Meeting, Special Section on Scientific Computing, University of Akron, Spring, 1985 (With J. W. Baker and R. Aron) (Invited)

"Providing a Complex Number environment for MACSYMA", Mathematical Association of America Sectional Meeting, Special Section on Scientific Computing, University of Akron, Spring, 1985 (With J. W. Baker) (Invited)

"Computer Algebra Systems: Multidisciplinary Research Tools", Colloquium of the Computer Sciences Department, University of Texas at Austin, May, 1984. (Invited)

"A Computerized Society: Utopia or Nightmare?", Humanities Address, Ohio Junior Science and Humanities Symposium, Ohio University, 1983. (Invited)

"How Computers are Changing Our Lives", Hermit Club, Cleveland, 1983. (Invited)

Hiram College Library Forum talk entitled "A Bigger Ox? Or More Oxen : An Introduction to Parallel Computing", 1983.

"Creating a Complex Number Environment for VAXIMA", Computer Science Colloquium, Kent State University, 1982. (Invited)

"A Complex Domain Simplifier", Computer Science Colloquium, Kent State University, 1982. (Invited)

"On Probabilistic Algorithms", Computer Science Colloquium, Kent State University, 1979. (Invited)

"Recent Developments on the Residually Central Problem in Groups", Mathematics Colloquium, Penn State University, 1975. (Invited)

"Groups with Special Systems of Subgroups", Mathematics Colloquium, Cleveland State University, 1974. (Invited)

"Monolithic Hypercentral Groups", presented at American Mathematical Society Winter Meeting, Dallas, Texas, 1973 (Abstract: AMS Notices, #701-20-28)

"Wreath Products and Saturated Formations", presented at American Mathematical Society Regional Meeting, Auburn University, 1971 (Abstract: AMS Notices #689-A42)

"Near Fields and N-Systems" (with S. Ligh and B. McQuarrie), 1971 (Abstract: AMS Notices #71T-A202)

"Residually Central Groups", Mathematics Colloquium, University of Miami, 1970. (Invited)

"Free Products of Some Generalized Nilpotent and Generalized Solvable Groups", presented at American Mathematical Society Winter Meeting, San Antonio, Texas, 1970 (Abstract: AMS Notices #672-359)

"Factor Coverings of Groups", presented at Mathematical Association of America Regional meeting, Rollins College, Florida, 1970.

"Finite Factor Coverings of Groups", Mathematics Colloquium, University of Florida, 1969 (Invited)

"On Finite Factor Coverings of Groups", presented at American Mathematical Society Winter Meeting, New Orleans, 1969. (Abstract: AMS Notices #663-557)

"New Directions in Teaching High School Trigonometry", National Council of Mathematics Teachers National Conference, Houston, Texas, 1966. (Invited)

"Concepts in the 'New' Trigonometry Courses", Conference for the Advancement of Science and Mathematics Teaching, Austin, Texas, 1965.

"Individually-tailored Programs for the Slow Learner and the Gifted Child in Union County", Regional Conference of the Council for Exceptional Children, Summit, New Jersey, 1961. (Invited)

"Exciting Vocational Experiences for the Slow Learner in Junior High School", Regional Conference of the Council for Exceptional Children, Columbus, Ohio, 1959.

PROFESSIONAL SERVICE

- 2004-7 Hiram College AAUP Secretary
- 2000-7 Judge, Undergraduate Research Competition at SIGCSE, except for 2003, 2005, 2006
- 2006 Judge, Graduate Research Competition at SIGCSE
- 2003 Grand Award Judge, International Science Fair, Cleveland, OH
- 2000 Organized delegation to Grace Hopper Celebration of Women in Computing (with Ellen Walker)
- 1999 Supervised Mike John's graphics work for the opening sequence at the Kent State University Fashion Show, April
- 1997 Organized delegation to Grace Hopper Celebration of Women in Computing (with Ellen Walker)
- 1996 Organizer and moderator for Computer Ethics Panel at Deemer Symposium, Hiram College
- 1975-96 Cuyahoga Valley Association for Computing Machinery (CVACM) Local chapter:
 - 1978-96 Executive Committee
 - 1978-96 Database Manager
 - 1984-96 Professional Development Organizing Committee
 - 1982-83 President
 - 1981-82 Vice-President
 - 1979-81 Newsletter Editor
 - 1975 Charter member
- 1980-96 Science Fairs, sponsored by Ohio Academy of Science
 - 1993-96 Executive Steering Committee for District #5 Science Fairs
 - 1988-96 Judge, State of Ohio Science Fair
 - 1984-94 Judge, All Portage County Science Fair
- 1994 Project Excel Participant, Hiram College and Trumbull County Teachers
- 1992 Junior Academy of Science National Meeting, February, Chicago, IL.
Visiting Scientist presentation for high school students.
- 1992 Ohio Junior Symposium on Science and Humanities, March, University of Toledo, Ohio. Visiting Scientist presentation for high school students
- 1991 Faculty panel for Multicultural Preschool Workshop, September, Hiram College
- 1989 Organizer and moderator for convocation, "Women in Science", October, Hiram College
- 1989 Panel Participant in Computer Science and Mathematics, National Science Foundation, Teacher Preparation and Enhancement Program, Washington, D.C.
- 1982-83 CAUSE workshop organizer and teacher, Hiram College, summers
- 1978-79 Women in Science Workshop, contact person and participant, Oberlin College, Ohio.
- 1978 Head Judge, ACM Programming Contest, East Central Regional Contest.

Numerous committees at Hiram College:

- 2006- Core Curriculum Course Subcommittees: Category 7: Understanding Diversity at Home and Category 8: Meaning, Ethics, and Social Responsibility
- 2005-06 Developing Goals for General Education: Knowing Through Scientific Inquiry

2005- Institutional Research Advisory Committee
 2005 Technology Advisory Committee
 2002 Faculty Classroom Observation Program
 2000-03 Admission Faculty Recruiting Committee
 1999-02 ICIS (Integrated College Information System) Committee, the Hiram College SCT
 Banner Project
 1998-99 Presidential Committee to Investigate Administrative Software
 1996-03 Weekend College Advisory Board
 1997-02 WWW Advisory Board
 1995-00 Retention and Enrollment Management Committee
 1996-97 College Web Development Committee
 1996-97 Information Technology Presidential Advisory Committee
 1992-94 Appointments, Tenure, and Promotion Committee
 1992 Chair, Committee on Committees
 1991-93 Committee on Committees
 1991-92 College Life and Affirmative Action Committee
 1990-93 Executive Steering Committee
 1990 Priorities for Capital Campaign Committee
 1989-93 Environmental Studies Board
 1989-90 Partners in Education, Crestwood School System and Hiram College
 1988-92 Chair, College Life and Affirmative Action Committee
 1988-92 Minorities Board
 1986-89 Logistics Task Force
 1982-86 Appointments, Tenure, and Promotion Committee
 1982-83 Medical Science Board
 1982 Academic Dean Selection Committee
 1980-82 Presidential Scholarship Committee
 1979-80 Academic Dean's Ad Hoc Committee for Establishing Interdisciplinary Courses
 1979 Business Manager's Ad Hoc Committee for Reviewing Computer Facilities
 1978-82 Faculty Life Committee
 1978-82 Chair, Salary Subcommittee of Faculty Life
 1977-83 American Association of University Women Hiram College Corporate Delegate
 1977-79 Chair, Activities Unit Board
 1977-79 Committee for Selecting Faculty Research Summer Grants
 1977-78 Educational Planning and Policy Committee
 1977 Chair, Subcommittee of EPPC to Study Activity Units
 1976 Faculty Senate (1 quarter until it was abolished)
 1975-85 Computer Studies Advisory Board
 1975-76 Career Development Committee
 1974-75 Presidential Task Force for Developing a Computer Science Major

Club Advising:

1984- Computer Club, ACM Student Chapter, Hiram College
 1977-83 Computer Club, ACM Student Chapter (chartered August, 1979), Hiram College
 1988-92 Advisor Equestrian Team, Hiram College
 1984-97 Advisor to programming team, Hiram College

- 1983-84 Co-Advisor to programming team, University of Texas at Austin
1982-83 Advisor to Hiram College's National Scholastic Programming Contest team,
2nd place winner in the region, competing at the ACM Winter Meeting, Orlando,
Florida
1978-83 Advisor to programming team, Hiram College

ADDITIONAL EDUCATION – non-degree

University courses:

1983-84: University of Texas at Austin. Audited graduate level computer science courses while on sabbatical. Areas of concentration: artificial intelligence, expert systems, operating systems, graphics, and automatic theorem proving.

1969-73: University of Florida. Audited computing-related courses while on the faculty due to an interest in this emerging discipline.

1964-69: University of Texas at Austin. Audited computing courses offered in various departments at the time.

1961-64: Rutgers: The State University of New Jersey. Courses in undergraduate mathematics.

1963: Montclair State College, New Jersey. Summer courses in graduate mathematics education.

1960-62: New Jersey State Teachers College, New Jersey, Summer and evening courses in graduate mathematics education.

1962: University of Illinois, Urbana-Champaign, Illinois, Summer courses in graduate mathematics education.

1958-60: Ohio State University. Graduate work in psychology. Completed all work for an M.S. except for a thesis.

Professional Development Courses, Workshops and On-Line Seminars: (Not including ones at professional meetings which I failed to track.)

2004-05 ACM Professional Development Centre on line courses:

- Advanced Object-Oriented Programming
- J2SE(TM) Internals and Troubleshooting
- The Designing Graphical User Interfaces in Java[tm] Technology
- Security on the Apache Web Server
- Applying Secure Commerce Concepts
- The Basics of Security and Cryptography
- Learning About Security on the Web
- Programming Java[tm] Based Servlets
- Managing Within the Law
- Protecting Your Workplace

- Working on Global Teams
- Working on Matrix Teams
- Working on Virtual Teams
- 2003-04 ACM Professional Development Center on line courses:
 - Client/Server Fundamentals
 - Network Security and Firewalls Fundamentals
 - Design Patterns
 - UML Fundamentals
- 1986 CVACM Professional Development Seminar, Device Independent Computer Graphics, presenter: George Carson (GSC Associates), May.
- 1985 CVACM Professional Development Seminar, Concurrent and Distributed Programming, presenter: Arthur Bernstein (Computer Science Department, SUNY at Stony Brook), (1 day)
- 1983 CVACM Professional Development Seminar, Structured Programming and Design, presenter: Michael Marcotty, (1 day)
- 1982 ACM Workshop, Probabilistic Algorithms, University of New Hampshire, summer, (5 days) Partially financed by NSF.
- 1982 ACM Symposium on LISP and Functional Programming, August, Carnegie Mellon. (3 days)
- 1982 CVACM Professional Development Seminar, Local Area Computer Networks, presenter: David C. Wood, (1 day)
- 1981 ACM Symposium on Symbolic and Algebraic Computation, Snowbird, Utah (5 days)
- 1981 CVACM Professional Development Seminar, Software Science: Applications to Software Project Costing, presenter: Victor Schneider (Wang Laboratories, Inc.), (1 day)
- 1980 COACM Symposium, New Dimensions in Computer Graphics, Columbus, Ohio (1 day)
- 1980 CVACM Professional Development Seminar, Using a Data Base Correctly, presenter: Robert J. Tufts (Analytic Sciences Corporation) (1 day)
- 1979 COACM Symposium, Software Engineering, Columbus, Ohio (1 day).
- 1977 Numerical Analysis Short Course, AMS Winter Meeting, Atlanta, Georgia (1 day).
- 1975 MAA Operations Research Short Course, Youngstown State University (1 day).

MASTER THESIS DIRECTION AND GRADUATE COMMITTEE WORK

Note: The first three were started under my direction when I was at Kent State University on a research leave from Hiram College. The students requested that I continue as an unofficial thesis director even though an outside professor cannot officially chair a supervisory committee at KSU. Consequently, a KSU professor was listed as the official chair.

Steven J. Talus, Parallel Approaches to the Zero-One Knapsack Problem, August, 1988, M.A. Supervisory Committee (unofficially thesis director) Kent State University, Computer Science.

John C. Michalakes, Staran-VAX Interface Under Berkeley UNIX 4.3 BSD, December, 1988, M.A. Supervisory Committee (unofficially thesis director), Kent State University, Computer Science.

Julia Lee, Developing Parallel SIMD Algorithms for the Traveling Salesperson Problem, November, 1989, M.A. Supervisory Committee (unofficially thesis director), Kent State University, Computer Science.

Rick C. Massie, Parallelism of a Maximum Clique Algorithm: Vectorization on the CRAY-MP of an Application Program for Matching Chemical Structures, May, 1988, M.A. Supervisory Committee, Kent State University, Computer Science.

Mohamed Omar Rayes, Developing a Complex Number Environment Within MACSYMA, Spring, 1988, M.A. Supervisory Committee, Kent State University, Computer Science.

From the University of Florida:

Michael Weinstein, M.A. Thesis Director and Chair of Supervisory Committee, 1972, University of Florida, Mathematics.

Roy Dubourg, M.A. Thesis Director and Chair of Supervisory Committee, 1972, University of Florida, Mathematics.

Tushar Ghosh, Ph.D. Supervisory Committee, 1971, University of Florida, Electrical Engineering.

Frederick Showers, Ph.D. Supervisory Committee, 1971, University of Florida, Mathematics Education.

Patricia Casey, M.A. Supervisory Committee, 1971, University of Florida, Mathematics Education.

Au-Pang Wu, M.A. Supervisory Committee, 1971, University of Florida, Mathematics.

CONSULTING

Financial Analysis Services, Hiram, Ohio. Systems analysis consulting, 1976-80.

PROFESSIONAL MEETINGS ATTENDED

2007 SIGCSE '07, Covington, KY

2006 WORLDCOMP'06, World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, NV

2006 ACM SIGCSE 2006, Houston, TX

2004 Computer Science Chairs meeting at Snowbird, UT

2004 ACM SIGCSE 2004, Norfolk, VA

2004 IPDPS 2004, International Parallel and Distributed Processing Symposium, Santa Fe, NM

2003 IPDPS 2003, International Parallel and Distributed Processing Symposium, Nice, France

2003 Computer Science Chairs meeting at Snowbird, UT, summer

2002 SIGGRAPH 2002, San Antonio, TX

2002 Computer Science Chairs meeting at Snowbird, UT

2002 ACM SIGCSE 2002, Covington, KY
 2001 IPDPS 2001, International Parallel and Distributed Processing Symposium, San Francisco, CA
 2001 ACM SIGCSE 2001, Charlotte, NC
 2001 IEEE Computer Society Conference on Software Engineering Education and Training, Charlotte, NC
 2000 Software Engineering Education, March, Austin, TX.
 2000 ACM SIGCSE 2000, March, Austin, TX.
 2000 Grace Hopper Celebration of Women in Computer Science, September, Hyannis, MA.
 1999 Software Engineering Education, February, New Orleans, LA.
 1999 ACM SIGCSE 1999, February, New Orleans, LA.
 1998 International Conference on Parallel Processing, Minneapolis, MN
 1997 Grace Hopper Conference on Women in Computing, October, San Jose, CA
 1997 International Conference on Parallel Processing, August, Oconomowoc, WI
 1997 IASTED International Conference on Parallel and Distributed Systems, October, George Washington University.
 1996 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '96), August, Sunnyvale, CA.
 1996 International Conference on Parallel Processing, August, Oconomowoc, WI
 1995 International Conference on Parallel Processing, August, Oconomowoc, WI
 1995 The American Mathematical Society Regional Meeting, chaired a special session on Foundations and Mathematical Aspects of Computer Science, November, Kent State University, OH
 1993 Ohio Academy of Science Spring Meeting, April, University of Akron. OH
 1993 DECUS Regional Meeting, Cleveland, OH, October.
 1992 Ohio Academy of Science Spring Meeting, University of Akron, OH
 1992 The Fourth Symposium on the Frontiers of Massively Parallel Computation, October, Goddard Space Flight Center, McLean, Virginia.
 1992 American Association for the Advancement of Science Annual Meeting, February, Chicago, IL
 1991 International Conference on Parallel Processing, August, St. Charles, IL
 1991 ACM Annual Computer Science Conference, February, San Antonio, TX
 1991 Ohio Academy of Science, April Centennial Meeting, Ohio State University, OH
 1990 International Conference on Parallel Processing, August, St. Charles, IL
 1990 The Third Symposium on Frontiers of Massively Parallel Computation, October, University of Maryland, MD
 1989 International Conference on Parallel Processing, August, St. Charles, IL
 1989 11th Annual International Joint Conference on Artificial Intelligence, Detroit, MI
 1989 ACM-CSC '89 Annual Computer Science Conference, February, Louisville, KY
 1989 Computer Aided Proofs in Analysis, University of Cincinnati, OH
 1989 4th Annual SIAM Conference on Parallel Processing for Scientific Computing, Chicago, IL
 1988 Second Symposium on the Frontiers of Massively Parallel Computation, IEEE and NASA/Goddard Flight Center sponsored, October, George Mason University.
 1988 Spring DECUS U.S. Symposium, Artificial Intelligence, Special Interest Group, Cincinnati, OH.

1986 ACM Annual Computer Science Conference, February, Cincinnati, OH
 1986 ACM-IEEE Computer Society Fall Joint Computer Conference, Dallas, TX.
 1985 ACM Annual Computer Science Conference, February, New Orleans, LA.
 1985 MAA Sectional Meeting, University of Akron, OH
 1984 Computer Algebra as a Tool for Research in Mathematics and Physics, New York
 University and Courant Institute of Mathematical Sciences, New York, NY
 1984 MACSYMA Users' Conference, July, General Electric Corporate Research and
 Development Center, Schenectady, NY.
 1983 Computing and the Information Age, Centennial Symposium, University of Texas at
 Austin, TX
 1983 ACM Annual Computer Science Conference, February, Orlando, FL
 1982 ACM 82 Annual Conference, February, Dallas, TX
 1979 MACSYMA Users' Conference, Washington, D.C.
 1979 International Banach Space Conference, Kent State University, OH
 1979 SIGCSE Conference, Dayton, OH
 1979 ACM 79 Annual Conference, February, Detroit, MI
 1977 Denison University Algebra Conference, Denison University, OH
 1977 National Computer Conference, Dallas, TX.
 1977 Regional ACM Conference of SIGCSE, Columbus, OH
 1977 NSF Regional Conference on Banach Spaces, Kent State University, Oh
 1976 NSF Regional Conference on Banach Spaces, Kent State University. OH
 1975 Conference on Computers in Undergraduate Curricula, Texas Christian University, TX
 1975 Charlotte Topology Conference, Charlotte, SC
 1974 International Congress of Mathematicians, Vancouver, British Columbia, Canada.
 1973 American Mathematical Society Winter Meeting, Dallas, TX
 1973 Symposium on Approximation Theory, University of Texas, TX
 1973 Finite Group Theory Conference, co-chaired the organizational committee, University of
 Florida, FL
 1972 Ottawa Algebra Symposium, Carleton University, Canada. (By invitation only).
 1972 Texas Symposium on Computer Systems, University of Texas. TX
 1971 American Mathematical Society Winter Meeting, Atlantic City, N.J. Chaired a Group
 Theory session.
 1971 American Mathematical Society Regional Meeting, Auburn University
 1970 American Mathematical Society Winter Meeting, San Antonio, TX. Chaired a Group
 Theory session.
 1970 Mathematical Association of America, Regional meeting, Rollins College, FL
 1969 Mini Conference on Group Theory, Rice University. Chaired a session on Group Theory
 (By invitation only).
 1969 NSF Regional Conference on Nilpotent Groups, University of Texas. Chaired a session.
 1969 American Mathematical Society Winter Meeting, New Orleans. LA
 1967 ACM Symposium on Interactive Systems for Experimental Applied Mathematics,
 Washington, D.C.
 1966 ACM Symposium on Symbolic and Algebraic Manipulation, Washington, D.C.
 1974-77 Numerous local chapter meetings of DPMA
 1978-96 Numerous local chapter meetings of ACM

REFEREEING ACTIVITIES

2003- Panels and papers – for SIGCSE 2003, SIGCSE 2004, SIGCSE 2005, SIGCSE 2006, SIGCSE 2007

Numerous computer science books for

Addison Wesley (1978-)

McGraw Hill (1976 -)

Prindle, Weber, Schmidt (1976-1980)

Houghton Mifflin (1975-1980)

Prentice Hall (1900-)

Referee for the Mathematical Monthly, Mathematical Association of America (1972-74)

COURSES TAUGHT

Hiram College: (Freshman - Senior Level, 1974 -; an asterisk denotes courses no longer in the curriculum. Most of these were developed by me.)

CPSC 481: Independent Research and Study

CPSC 480*: Senior Seminar (replaced in 1995 by 387, 386, and 388 as courses requiring preliminary proposals, journal style papers, and oral presentations)

CPSC 466: Theory of Computation

CPSC 465: Design and Analysis of Algorithms

CPSC 400-401 Integrated Research Components, requiring preliminary proposals, journal style papers, and oral presentations in the areas of
Design and Analysis of Algorithms
Computer Simulation
Compiler Design
Graphics

CPSC 388 (formerly 353) Compiler Design and Construction

CPSC 387 (formerly 365) Graphics

CPSC 386 (formerly 355) Artificial Intelligence

CPSC 381: Multimedia

CPSC 380*: Junior Seminar

1985-86 Expert Systems

1984-85 Artificial Intelligence: Vision and Perception

1982-83 Concurrent Programming

1981-82 Advanced Graphics

1980-81 Designs of Operating Systems

CPSC 375: Software Engineering

CPSC 367: Parallel Computing

CPSC 363: Computer Networks

CPSC 361: Computer Simulation

CPSC 356: Database Design (formerly 370)

CPSC 359: Systems Analysis and Design

CPSC 354: Systems Administration

CPSC 352: Computer Security

CPSC 351: Programming Languages

CPSC 350*: Data Structures

CPSC 345: Operating Systems
 CPSC/MATH 325: Numerical Analysis
 CPSC 252: Computer Organization
 CPSC 253*: Introduction to Computer Organization II: Assembly Language
 (replaced by single course, CPSC 252)
 CPSC 252*: Introduction to Computer Organization I: Architecture (replaced by
 single course, CPSC 252)
 CPSC 250*: Computer Programming Techniques and Applications
 CPSC 241*: Management Information Systems (Weekend College only)
 CPSC 223: Software Engineering: Project Management
 CPSC 221: Software Engineering: Testing and Verification
 CPSC 240: Computer Ethics
 CPSC 205: Systems Programming
 CPSC 201: Data Structures and Algorithm Design
 CPSC 192*: Introduction to Data Structures: Pascal
 CPSC 191*: Introduction to Programming: Pascal
 CPSC 172: Introduction to Programming: C++
 CPSC 171: Introduction to Computer Science (laboratory based)
 CPSC 170: Java Supplement (1 hour)
 CPSC 154: FORTRAN (1 hour)
 CPSC 153: C (1 hour)
 CPSC 152: LISP (1 hour)
 CPSC 151: COBOL (1 hour)
 CPSC 150*: Introduction to Programming: FORTRAN
 CPSC 165: The Information Age and Computers
 CPSC 160: Computers and Society
 CPSC 145*, 146*, 147*: Introduction to Business Programming I, II, III (Weekend
 INTD 390 (Team-taught with Linda Bourassa) Computers and the Visual Arts
 INTD 390 Computers and the Visual Arts – not team taught
 MATH 466: Abstract Algebra
 MATH 218: Linear Algebra
 MATH 217: Discrete Mathematics
 MATH 198, 199, 200: Calculus- entire sequence

DIRECTION OF UNDERGRADUATE PROJECTS

I. Senior Seminars (1974-1995)

From 1974 until 1995, all computer science majors at Hiram College designed and implemented a major research project and presented it to the faculty and other students both orally and in a paper. I directed over two-thirds of the projects during that time. To list all the projects would require many pages. Below I have shown a representative sample of some of those projects, namely ones from 1985-86, by giving the title and a very brief description of the work.

John Choma, "Automatic Theorem Proving".

Converted an INTERLISP theorem prover of W. Bledsoe to COMMON LISP and used the prover to demonstrate automatic theorem proving techniques.

William Filion, "Story Generating Programs".

Wrote a story generator using agendas.

Pat Gintert, "Collecting and Analyzing Experimental Data".

Interfaced an Apple IIe to several physics laboratory experiments to automatically collect and analyze experimental data.

Chad Hegerty:, "Robotic Arm Movements".

Investigated the geometric constraints of robotic arm movements and compared theoretical work in this area with existing industrial robotic arms.

Howard Kimney, III, " Analyzing the Performance of an Operating System"

Conducted an investigation of the campus VAX-VMS operating system as configured and suggested improvements.

Christopher Kovach, "Shading and Lighting in Graphics Displays".

Compared several models for lighting and shading by using greytoneing techniques on a GIGI.

Sandra Marxen, "Software Reliability and Technical Problems of Star Wars"

Translated the technical problems of software reliability into terms that the general public can understand.

Greg Merz, "Proving Programs Correct".

Demonstrated many of the basic techniques by proving several programs correct.

Karen Muehlhauser, "Poetry Generation- A Comparison of Current Techniques"

Wrote a poetry generator in COMMON LISP. The output was highly praised by our resident poet, Professor Hale Chatfield.

Paul Stephan, "Parallel Sorting Algorithms".

Compared and analyzed the complexity of parallel sorting algorithms.

Robert Switalski, "Expert System Generating Using OPS5"

Implemented an expert system for identifying chemical compounds in a beginning chemistry laboratory. Worked with a chemistry professor to test the system.

Robert Vance, "Implementing Languages as Threaded Code".

Implemented FORTH on the VAX 11-780.

Catherine Vishnevsky, "Fractals:.

Investigated the mathematical foundations of fractal geometry and demonstrated the use of 2D fractals by generating graphics displays.

II. Project Courses

I introduced "project courses" in artificial intelligence, graphics, and compiler writing. These courses required each student to design and implement a major research project and present it to the faculty and other students both orally and in a paper. In 1995, we decided to require each student to take two of these courses instead of a senior seminar. I have included the listing of the talks for the artificial intelligence course in 1995 as representation of these projects.

You are invited to the 3rd Artificial Intelligence Seminar presented by the students in CPSC 355: Artificial Intelligence. At the two evening sessions, students will present, discuss, and demonstrate prototype artificial intelligence systems that they have built during the quarter.

The following is the schedule for the talks on Tuesday and Wednesday of this week:

Tuesday, March 7: Talks: 7-9:30, H-203

7:00 John L. Fleming

Solving a problem using a neural network.

7:30 Adam P. Taylor

Using blind searches to traverse a maze.

8:00 Jacalyn M. Halle

An expert system for playing interactive Pente.

8:30 Kelley A. Pellini

Using frames to explore simple relationships between characters in a story, "Gone With the Wind".

9:00 Darren T. Mancuso

An expert system for choosing first aid remedies.

Wednesday, March 8: Talks 7-9:00, H-203

7:00 Steve J. Haley

A genetic algorithm for solving the knapsack problem.

7:30 S. Daniel Toth

Simplifying group theory expressions using a beam search and production rules.

8:00 Vaughn M. Evert

A system for playing 3-dimensional tic-tac-toe.

8:30 Noelle R. Walter

An expert system for playing Connect 4.e

III. Integrated Research Components (IRCs)

In 1995, Ellen Walker and I replaced senior seminars with IRCs that were attached to major courses. These were designed to provide research opportunities early in an undergraduate's career. Each IRC requires a formal proposal, a literature search, a major implementation, a journal style paper, and a formal application. Here are the IRCs I have directed:

Fall, 2005: Parallel Computing

Yowa Kimura “Parallel Algorithms for Unweighted Graphs—Maximum Clique”
Nathan Calapa “Graphical Representation of Several Interconnection Networks”
Azmi Al-Asali, “Parallel Sorting Algorithms: Implementation, and Comparison
 between Traditional, and Parallel Sorting Algorithms”

Fall, 2005: Graphics (completing an incomplete due to health problems)

Casey Dombos, “Multiple Fractal Trees with Shadow Implementation”

Spring, 2005: Graphics

Adam A. Busony “Modeling of Planetary Bodies from an Orbital Perspective”
Matt J. Boggus “Collision Detection: Bounding Volumes, with No Limit to
 the Fun”

Jacob B. Vigeveno “Particle System Fountain”
Jeffrey B. Adair “Voxel Modeling Software”
John J. Zimmerman “Fractal Trees in a Nature Environment”
Brandon J. Haines “Simulating Smoke with a Particle System”
Jason Wray “Modeling of a Deformable Human Hand in Real-Time
 Using Bezier Surfaces”

Arthur J. Geigel “Monkey Spunk! Tilted World Labyrinth Style Game”
Jason D. Kiss “Light and Transparency Utilizing Texture Blending
 Techniques”

Azmi Al-Asali “Graphical Representation of an Electro Magnetic Pulse”
Yowa Kimura “Simple Modeling of Tsunami Wave” Poster presentation
 at the April 2005 Ohio Celebration of Women in
 Computing

Daniel J. Klinzing “Modeling a Unique 3-Dimensional Waterfall in OpenGL”
Jaina Sangtani “‘The Making of the Boddy Mansion’ Poster presentation
 at the April 2005 Ohio Celebration of Women in
 Computing

Spring, 2004: Graphics (incomplete finished)

Timothy Ciano “A Computer-generated Kenya Landscape”

Spring, 2003: Computer Simulation

Adam Busony “Simple Warehouse Facility and Dealing with Design
 Abstraction”

Hani Abu-Ghazaleh “An Airport Bag-Screening System”
Michael J. Wade “Ohio's Power Grid: An Independent Study”

Kunal Gupta	“Garrettsville Dominos—Behind the Scenes, Upfront and Close”
Kodei Matsumoto	“A Simulation of a Convenience Store”
Brianna K. Tracy	“Computer Simulation as an Efficiency Manager in Relation to Fast Food Restaurants”

Spring, 2003: Design and Analysis of Algorithms

Luke Hodginkson	“Unification Algorithms and Automated Deduction”
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Fall, 2002: Graphics

P. Corey Boyer	“Integrating Modern Terrain Generation Techniques
Stephen D. Byrne	“A Dark Castle”
Joseph L. Allen	“A Racing Simulation in OpenGL”
Luke M. DeCesare	“A Graphic Skyline Using OpenGL”
J. Michael Van Heyde	“A Particle System Tornado”
John J. Groselle	“Our Own 3D World with FPS Characteristics”
David F. Dembinski	“Cel-shaded 3-Dimensional Models or Zen and The Art of Cartoon Rendering”
Mathew Linnell	“A Graphics Rendering of Atlantis”

Spring, 2001: Simulation

Gregory P. Hodge	“Simulating a Small Business Using Arena”
Stephen Byrne	“Simulating a Theme Park Transportation System”
Gaurav Rana	“Simulating an Automated Guided Vehicle”
Luke M. DeCesare	“A Simulation of an Assembling Plant”
John R. Groselle	“Milking Parlor”
Timothy Ciano	“Powering Kenya in the New Millennium”
Cameron Sowa	“Nursing Home Simulation”
Joseph L. Allen	“A Simulation of Hifi.com”
J. Michael Van Heyde	“McDonald’s Simulation”
Jennifer M. Williams	“Simulation of a Pizza Shop”

Fall, 2000: Graphics

Donald Beesing	“The Modeling of an Historical Baseball Stadium”
Brent J. Pliskow	“Next Year in Jerusalem: This Year a Virtual Tour”
Ankur Gupta	“When Worlds Collide: Modeling the Destruction of the Earth Using OpenGL”
Kristopher J. Haines	“A Walk Through a Hallway”
Altai Otgonyin	“Computers and Water”
Derrick S. Bray	“Derrick’s Dorm Room”
Andrew J. Walker	“The Simulation of Fire in OpenGL Using a Correlated Particle”
Gregory S. Nilsen	“A Black Box Exploration: Football Game Graphics”
Robert W. Gotschall	“A Flight through the Hiram College Campus”
Nicholas Kelson	“Design of a Weight Room”
David Pleet	“Racing Cars”
Diana C. Kirby	“At the Mall”

Dean L. Wilhelm	“An Underwater Scene”
Jeffrey E. Hodge	“A Walk Around Jacobs Field”
Jacob E. Misencik	“The Simulation of Waves”
Mathew Friedlander	“Car Simulation”

IV. Capstone Projects for the Computer Systems Management Major in the Weekend College

Each student in the WEC CSM Major is required to complete a capstone project (i.e. senior project). These require a proposal, a project, a paper, and an oral presentation that are designed to exhibit a student’s computer science, management, and communication skills. Students are individuals working on a B.A. degree while working. Some are already in the IT field; others are hoping to change to it.

All projects were jointly directed jointly with Ellen Walker (Computer Science) and Jane Rose (Management)

Spring, 2005

Jonathan Price	“The Master Schedule Database Development Project for Saint Gobain Crystals– What Not to Do”
Michelle Stewart	“ Reporting Point Solutions Capstone Project”
Christopher Krysinski	“Database System for Irene’s Health Bakery, Inc.”
Eric Pelle	“RoHS /Analyzer Tool Development & Transition Process Using FIFO Techniques,

Fall, 2004

Karen Skrobut	“Patch Management”
Leslie A. White	“Software License Management System A.K.A. SLiMS”
Robert Hoffman	“Web-Based Scheduling Software”
Don Fisher	“Disaster Recovery Plan Used for Outsourcing”
Janet Roberts	“Resurrection and Evolution of SDR”
Judy Williams	“The Byas and Heating Concepts Database Project”

Spring, 2003

Robert Allen	“The Board Marking System for Printed-Circuit Boards”
Peter Balint	“Enhancing Job Posting Procedures at the Lerner Research Institute”
Theresa Ann McGhee	“QT Pomeranian Database”
Kevin Nichol	“Rebuilding the Call Report System at General Electric as a Web-Based Application”
Mishael A. Reese	“Migrating Legacy Data into Oracle”
Neal Sabo	“DCS Meter Testing Software to SAP Interface”

Eric A. Yeager "Managing a Preventative Maintenance Management Software Installation"

Lynda Canty "The Women's Initiatives in Leadership Database Project"

Allen Harshbarger "The Integration of the Weekend College Database with Banner"

Scott A. McDole "Palm Pilot Interface to the Biology Department Phenology Study Database"

Theresa (Tess) Palmer "The Implementation of the Skin Zone Database"

Walter Pechenuk "Paper, Plastic, or Both? – Exploring a Way of Presenting Office-Hours Information"

Tracey Elizabeth Guice "Creating a User-Friendly Interface to a Database Designed to Track Minority Students at the University of Chicago"

Spring, 2002

John Shanahan "Helping a Small Business Stay Competitive"

Denise Morenz "Tracking Defects for the Special Lines Team at Progressive Insurance"

Melissa Fransko "Resource Assistance Database for Progressive Insurance"

William Finzel "A System Monitoring Tool Upgrade - Focus on Sun Remote Services"

Rick Decker "Using the Test Lead Website as an Effect Communication and Cost Saving Tool".

Margaret Carney "The FedExNet Integrated Messaging Migration Project"

Doug Barstow "A Database for Local Restaurants"

Fall, 2001

Brian A. Barile "Implementing a Freight Database for Alcan"

Dan Gress "Rapid Specification Development: A Lean Enterprise Technique for Reducing Product Development Time"

Spring, 2001

Amy Feichtner "Remedy vs TrackIT-Which Help Desk Application is Best for Hiram College?"

Amy Bultinck "Restructuring a Website as a Pro-Active Communication Tool"

Lucretia May "Modifying the Ordering and Billing System at Edgepark Surgical, Inc."

Elizabeth C. Zieber "Corporate Firewall Re-Design Implementing Check Point FW-1 and Nokia Network Appliances"

Fall, 2000

Robert Trinnes "Six Sigma Defect Cost Database for Rockwell Automation"

Spring, 2000

Patrica Bowman "Developing a Web Interface for Engineers and Management to use the Advanced Automation Services Database at ABB Automation, Inc"

