Linda M. Ott

Department of Computer Science
Michigan Technological University
Houghton, Michigan 49931

Phone: (906) 487-2315 (office)
          (906) 487-2209 (department)
          (906) 487-2283 (fax)
Email: linda@mtu.edu

Education

Ph.D.	Computer Science	Purdue University	1978	Advisor: M. H. Halstead
M.S.	Computer Science	Purdue University	1974	
B.S.	Computer Science	Purdue University	1972	

Bryn Mawr Institute for Women in Higher Education Administration, Summer 1993

Positions

9/99 – present **Professor of Computer Science**
Dept. of Computer Science, Michigan Technological University

- Teach graduate and undergraduate courses in software engineering and other areas of computer science.
- Conduct research in software engineering

1/12 – 4/12 **Fulbright Scholar**
Siberian State Aerospace University
Krasnoyarsk, Russia

- Taught a graduate level course in Software Engineering
- Worked with teachers of English in courses on interpretation in specialized fields and technical English
- Organized English Club for students desiring additional experience with a native English speaker, as well as cutural exchanges

6/11 – 7/11 **Visiting Scholar**
School of Information Technology, Beijing Normal University Zhuhai

- Taught *Ethical and Social Aspects of Computing to undergraduates*

8/97 – 6/10 **Chair**
Dept. of Computer Science, Michigan Technological University

- Responsible for administration of the Computer Science Department which grew to 15 tenured/tenure-track faculty and 1 Lecturer, 50 graduate students and 350 undergraduates
- Major accomplishments included conversion from a quarter to a semester curriculum, addition of a PhD in Computer Science program and new undergraduate degree programs in Computer Systems Science and Software Engineering, a five-fold increase in funded research, and planning and fund-raising for and overseeing construction of a new computer science building which was occupied in January 2005

8/96 – 7/97 **Interim Chair**

- Responsible for administration of the Computer Science Department consisting of 9 faculty, 30 graduate students and 270 undergraduates
- Conducted Departmental self-study in preparation for the University's reaccreditation review

9/93 – 9/94   **Special Assistant to the Provost**
Michigan Technological University

> Work closely with the Provost in everyday and special activities including:
>> Examining techniques for faculty evaluation.
>>
>> Orchestrating revision of Faculty Handbook including evaluation of on-line access.
>>
>> Participating in administrative forums such as Deans and Directors meetings.

9/86 – 8/99   **Associate Professor of Computer Science**
Dept. of Computer Science, Michigan Technological University

> Teach graduate and undergraduate courses in software engineering and other areas of computer science.
>
> Conduct research in software metrics, user interface development techniques, and parallel object-oriented languages.
>
> Co-implemented new faculty orientation program focused on teaching
>
> Co-author of a report on the climate for women at Michigan Tech.
>
> Chaired a revision of the computer science undergraduate curriculum.
>
> Director of Computer Science Undergraduate Studies, 1991, 1994–1997.
>
> Co-drafted Senate report on the evaluation of the University Administration.

9/91 – 7/92   **Visiting Scholar** (On Sabbatical Leave from MTU)
Dept. Of Computer Science, Colorado State University

> Formulated model for analyzing software cohesion metrics.
>
> Organized (with Jim Bieman of Colorado State University) the Quantitative Methods Subcommittee of the IEEE Computer Society Software Engineering Technical Committee.
>
> Founding editor of *Q Methods Report*.

11/84 – 8/87   **Coordinator of Computer Science**
Dept. of Mathematical & Computer Sciences, Michigan Technological University

> Chaired (in essence) the computer science component of the department, responsible for the budget, salary reviews, class scheduling, teaching assignments and representing the Computer Science area at College Council.
>
> Led the development of a proposal for a separate Computer Science Department.

6/82 – 8/82   **Consultant**
Xerox Corporation, Rochester, New York

> Investigated and documented appropriate software development technologies to be used in a software development environment for embedded microprocessor software.

8/78 – 8/86   **Assistant Professor of Computer Science**
Dept. of Mathematical & Computer Sciences, Michigan Technological University

> Taught a broad range of computer science courses and conducted software metrics research.
>
> Jointly developed and implemented a Masters Degree Program in Computer Science.
>
> Facilitated adoption of a university wide general education requirement as chair of Senate Curricular Policy Committee.
>
> Director of Computer Science Graduate Studies.
>
> Developed new courses – Discrete Simulation, Computers and Society (for CS majors), and Software Engineering.
>
> Redesigned the introductory programming course, getting cross-campus consensus for an increase in credit, reorganized the course so that graduate students could teach it, supervised the development of materials to upgrade the course from a batch to an interactive environment.

Honors

- ACM SIGSOFT's Retrospective Impact Paper Award in 2010 for The Program Dependence Graph in a Software Development Environment (with K. J. Ottenstein), *SDE 1, Proceedings of the First ACM SIG-SOFT/SIGPLAN Symposium on Practical Software Development Environments*, April 23-25, 1984, Pittsburgh, PA.

Publications

- **L. M. Ott**, Object-Oriented Measurement of Software in J. Marciniak, editor, *Encyclopedia of Software Engineering*, Wiley, January 2002

- **Linda Ott**, Atte Kinula, Carolyn Seaman, Claes Wohlin. The Role of Empirical Studies in Process Improvement, *Empirical Software Engineering* 4(4): 381-386, December 1999.

- **L. M. Ott** and J. M. Bieman. Program Slices as an Abstraction for Cohesion Measurement, *Information and Software Technology*, 40, 1998, pp. 691-699.

- Dianne M. Marsh and **Linda M. Ott**. Distributed Processing: Requirements for an Object-Oriented Approach, *Proc. 30th Annual Hawaii International Conference on Systems Sciences*, January 1997.

- Peck Cho, Diana George, **Linda Ott**, William Predebon and Philip Sweany. New Faculty Orientation and Seminar Series: Emphasis on Teaching and Learning, *Proc. 1996 ASEE Annual Conference*, June 1996.

- Sue Beske-Diehl, **Linda Ott**, and Christine Anderson. Potential for Change: Going Beyond Recommendations in a Women's Climate Study, *Proc. 1995 Women in Engineering Program Advocate's Network National Conference*, June 4-6, Washington, D.C., pp. 189-194.

- **L. M. Ott**. The Early Days of Software Metrics: Looking Back After 20 Years, in A. Melton, editor, *Software Measurement: Understanding Software Engineering*, International Thomson Computer Press, 1995.

- J. M. Bieman, N. Fenton, D. A. Gustafson, A. Melton, and **L. M. Ott**. Fundamental Issues in Software Measurement, in A. Melton, editor, *Software Measurement: Understanding Software Engineering*, International Thomson Computer Press, 1995.

- **Linda M. Ott**, James M. Bieman, Byung-Kyoo Kang and Bindu Mehra. Developing Measures of Class Cohesion for Object-Oriented Software, *Proc. 7th Annual Oregon Workshop on Software Metrics*, June 1995.

- J. M. Bieman and **L. M. Ott**. Measuring Functional Cohesion, *IEEE Transactions on Software Engineering*, 20, 8 (August 1994) 644–657.

- **L. M. Ott** and J. J. Thuss. Slice Based Metrics for Estimating Cohesion, *Proc. IEEE-CS International Software Metrics Symposium*, Baltimore, May 21-22, 1993.

- **L. M. Ott** and J. M. Bieman. Effects of Software Changes on Module Cohesion, *Proc. Conference on Software Maintenance*, Orlando, November 9-13, 1992.

- **L. M. Ott**. Using Slice Profiles and Metrics during Software Maintenance, *Proc. 10th Annual Software Reliability Symposium*, Denver, June 25-26, 1992.

- **L. M. Ott** and J. J. Thuss. The Relationship between Slices and Module Cohesion, *Proc. 11th International Conference on Software Engineering*, Pittsburgh, May 15-18, 1989.

- T. G. Rauscher and **L. M. Ott**. *Software Development and Management for Microprocessor-based Systems*, Prentice-Hall, 1987.

- H. D. Longworth, **L. M. Ottenstein [Ott],** and M. R. Smith. The Relationship between Program Complexity and Slice Complexity during Debugging Tasks, *Proc. COMPSAC '86*, Chicago, 1986.

- W. P. Francis and **L. M. Ottenstein [Ott]**. An Evaluation of a CAI System for Teaching Fortran, *IEEE Trans. Ed. E-28*, 3 (August 1985).

- K. J. Ottenstein and **L. M. Ottenstein [Ott]**. The Program Dependence Graph in a Software Development Environment, ACM SIGSOFT/SIGPLAN Symposium on Practical Software Development Environments, April 23-25, 1984, Pittsburgh, PA..

- K. J. Ottenstein and **L. M. Ottenstein [Ott]**. Debugging Information Obtained via Program Transformations, Proc. IEEE Melecon, May 24-26, 1983, Athens, Greece.

- K.J. Ottenstein and **L. M. Ottenstein [Ott]**. High-level Debugging Assistance via Optimizing Compiler Technology, Extended abstract, Proceedings of the ACM SIGSOFT/SIGPLAN Software Engineering Symposium on High-level Debugging, Pacific Grove, CA, March 1983, published as *ACM SIGPLAN Notices 18*, 8 (August 1983) and *ACM Software Engineering Notes 8*, 4 (August 1983) 152-154.

- **L. M. Ottenstein [Ott]**. Predicting Software Development Errors Using Software Science Parameters, 1981 ACM Workshop/Symposium on Measurement and Evaluation of Software Quality, *Performance Evaluation Review 10*, 1, 157-167.

- **L. M. Ottenstein [Ott]**. Quantitative Estimates of Debugging Requirements, *IEEE Transactions on Software Engineering SE-5*, 9 (Sept. 1979) 504-514.

- **L. M. Cornell [Ott]** and K.J. Ottenstein. Further Investigations into a Software Science Relationship, *Proceedings of the Computer Measurement Group VII Conference*, Atlanta, Georgia, November 1976.

Papers Presented, Panel Discussions, Etc.

- Opening and Closing Remarks, 2009 Michigan Celebration of Women in Computing, April 3-4, 2009, Hickory Corners, MI.

- Invited Participant, NSF sponsored workshop on Empirical Research in Software Engineering, June 29-30, 1998, Greenbelt, MD.

- Measuring the Cohesion of Software, Invited Presentation, Series on Software Measures, Oregon Center for Advanced Technology Education, May 1995.

- Developing Measures of Class Cohesion for Object-Oriented Software (with James M. Bieman, Byung-Kyoo Kang and Bindu Mehra), 7th Annual Oregon Workshop on Software Metrics, June 1995 (See Publications).

- Sliced Based Metrics for Estimating Cohesion (with J. Thuss), IEEE-CS International Software Metrics Symposium, Baltimore, May 21-22, 1993 (See Publications).

- Effects of Software Changes on Module Cohesion (with J. Bieman), Conference on Software Maintenance 1992, November 9-12, 1992 (See Publications).

- Arguments for Developing and Accepting Multiple Paradigms for Software Maintenance, Panel on Paradigms for Maintenance, Conference on Software Maintenance 1992, November 9-12, 1992.

- Using Slice Profiles and Metrics during Software Maintenance, 10th Annual Software Reliability Symposium, Denver, June 25–26, 1992 (See Publications).

- History of, and Transitions in, Software Metrics Research and Usage, 1992 CSC Workshop on Software Metrics: Understanding Software Engineering, March 1992.

- Participant, Workshop on Directions on Software Engineering Education, 13th International Conference on Software Engineering, Austin, Texas, May 1991.

- Use of Serpent for Software Engineering Education at Michigan Technological University (with K. Dietz), Software Engineering Institute Affiliates Symposium 1990, Carnegie Mellon Institute, September 1990.

- The Relationship between Slices and Module Cohesion (with J.J. Thuss), 11th International Conference on Software Engineering, May 1989 (See Publications).

- Using Slice Based Metrics for Measuring Module Cohesion (as L.M. Ottenstein with H. D. Longworth), 9th Minnowbrook Workshop on Software Performance Evaluation, Aug. 1986.

- Slices, Debugging and Complexity Metrics (as L.M. Ottenstein with H. D. Longworth and M. R. Smith), 8th Minnowbrook Workshop on Software Performance Evaluation, July 1985.

- High-level Debugging Assistance via Optimizing Compiler Technology (as L.M. Ottenstein with K. J. Ottenstein), ACM SIGSOFT/SIGPLAN Symposium on High-level Debugging, Pacific Grove, CA, March 1983 (See Publications).

- Debugging Information Obtained via Program Transformations (as L.M. Ottenstein with K.J. Ottenstein), Melecon '83, Athens, Greece, May 24–26, 1983 (See Publications).

- Panelist, Software Engineering: Participant's Views, 5th Minnowbrook Workshop on Software Performance Evaluation, July 1982, Minnowbrook, NY.

- Predicting Software Development Errors Using Software Science Parameters, 1981 ACM Workshop/Symposium on Measurement and Evaluation of Software Quality (as L.M. Ottenstein), March 25–27, 1981, University of Maryland (See Publications).

- Panelist, The Status of Software Science in 1981, COMPSAC 81, November 1981, Chicago, IL.

- Panelist, Current and Future Tools for Debugging, ACM79, October 29–31, 1979, Detroit, MI.

- Further Investigations into a Software Science Relationship (as Linda M. Cornell with K. J. Ottenstein), Computer Measurement Group VII Conference, November 1976, Atlanta, Georgia.

Grants

CPATH CDP: Integrating Sustainability Into Undergraduate Computing Education, National Science Foundation, July 2008 - June 2010, Budget: $144,554. Co-Principal Investigator. (Yu Cai, Principal Investigator.)

Course Development: Safety Critical Programming in C, Smiths Aerospace, $19,859. June 2007 (with Charles Wallace).

Women in Computer Science Summer Program for High School Girls, IBM, $15,000. July 2007 (with Chris Anderson)

Women in Computer Science Summer Program for High School Girls, IBM, $15,000. July 2006 (with Chris Anderson)

Women in Computer Science Summer Program for High School Girls, IBM, $15,000. July 2005 (with Chris Anderson)

Graduate Teaching Fellows in Copper Country Schools, National Science Foundation, September 1999 - August 2002, Budget: $1,146,968. Co-Principal Investigator. (B. J. Baartmans, Principal Investigator).

Improving Software Risk Management, Chicago Board of Exchange, March 1999 - November 1999, Budget: $20,419. (Co-Principal Investigator: Jim Northey).

CSNET Services (RUI), awarded April 1985, NSF Computer Science Section, Budget: $8,000 (Principal investigators: D. Poplawski and K. Ottenstein), based on 4 research projects including The Program Dependence Graph in a Software Development Environment (with K. Ottenstein) (NSF DCR-8511439).

RUI: Equipment for Computer Science Research, awarded May 1984, NSF Computer Science Section, Budget: $90,281 (Co-principal investigator with K. Ottenstein and D. Poplawski) (NSF DCR-8404909).

The Evaluation of the PLATO LDEC Fortran 77, awarded June 1983, Control Data Corporation Equipment Grant, Approximate Value: $19,000 (with W. Francis).

Other Professional Activities

Program Committee Chair for Michigan Celebration of Women in Computing, 2007, 2011 and 2013

Conference Chair for 2009 Michigan Celebration of Women in Computing

Program Committee for 2006 International Symposium on Empirical Software Engineering

Program Committee for 2005 International Software Metrics Symposium

General Chair for 2004 International Software Metrics Symposium

Program Committee for 1999 ICSE Workshop on Empirical Studies of Software Development and Evolution

Program Committee for 1999 International Software Metrics Symposium

Program Co-Chair for 1997 International Software Metrics Symposium

Editor, **Q-Methods Report**

Vice-chair, IEEE Computer Society Technical Council on Software Engineering Committee on Quantitative Methods

International Software Metrics Symposium Steering Committee, 1993–

Publicity Chair and Program Committee for 1993 International Software Metrics Symposium

Program Committee for Fifteenth Minnowbrook Workshop on Software Engineering

Program Committee for 1992 CSC Workshop on Software Metrics: Understanding Software Engineering, March 1992

Referee for *IEEE Transactions on Software Engineering*, *Computer*, *ACM Transactions on Software Engineering and Methodology*, *Journal of Computer and Software Engineering*, *Software Engineering Journal*, *Information and Software Technology*, *Journal of Systems and Software*, *Software Practice and Experience*, *Empirical Software Engineering*, International Test Conference, ISSRE '93, 10th Annual Software Reliability Symposium, Supercomputing '89, International Conferences on Software Engineering, COMPSAC, Harper Collins College Publishers, West Publishing Co., CBS College Publishing, Benjamin Cummings Publishing Co., DC Heath, PWS-Kent Publishing Co.,

Reviewer for National Science Foundation

Program Committee for 1981 ACM Sigmetrics Workshop/Symposium on Measurement and Evaluation of Software Quality

Consultant to U.S. Forest Service Grant to Michigan Tech. Forestry Center

Consultant to NSF Grant (NSF MCS-8203487) (K.J. Ottenstein, princ. investigator)

Member of ACM and IEEE Computer Society

M.S. Theses Supervised

Herbert D. Longworth	*Slice Based Program Metrics*, January 1985
Jeffrey J. Thuss	*An Investigation into Slice Based Cohesion Metrics*, February 1988
Kevin Dietz	*A Comparison of User Interface Development Techniques*, July 1990
Dianne Marsh	*Parallel Programming: Requirements for an Object-Oriented Approach*, September 1992
Sakari Karstu	*An Examination of the Behavior of Slice-Based Cohesion Measures*, July 1994
Janne Leminen	*Slicing and Slice-Based Measures for the Assessment of Functional Cohesion of Z Operation Schemas*, May 1994
Bindu Mehra	*A Critique of Cohesion Measures in the Object-Oriented Paradigm.* March 1997
Teresa Hale	*Slice-Based Cohesion Measures*, February 1999
Jeff Winters	*A Measure of C++ Object-Oriented Parametric Const Correctness*, February 1997
Supriya Ghorpadkar	*Refinement of Slice-based Cohesion Measures*, August 2000
Christine Reid	*Comparing Defect Detection Techniques*, May 2002
Matthew Scaer	*Assessing the Role of Experience in the Estimating of Risk: A Quantitative Approach*, May 2002

I have also served on numerous M.S. and Ph.D. committees for students in numerous disciplines.

Courses Taught

CS100	Computer Science Orientation
CS110	Introduction to Programming (Fortran)
CS200	Introduction to Computer Science (PL/I, Pascal)
CS211	Programming Techniques (Pascal)
CS220	Introduction to Numerical Methods with FORTRAN
CS299	Elementary Programming Projects
CS310	Data Structures and Algorithms
CS320	Computers and Society (for CS Majors)
CS3000	Ethical and Social Aspects of Computing
CS341	Systems Software Project
CS3141	Team Software Project
CS400	Senior Projects
CS4000	Senior Seminar
CS410	File System Organization
CS420	Programming Languages
CS465/CS4711	Introduction to Software Engineering
CS4790/CS4791/CS4792	Senior Design Project
CS480	Discrete Simulation
CS499/CS4099	Directed Study in Computer Science
CS500/CS5990	Graduate Research in Computer Science
CS550/CS5711	Advanced Software Engineering
CS590/CS5090	Software Metrics Seminar
CS590	Object-oriented Programming Seminar

Other Instructional Activities

Undergraduate Advisor
First-year Student Mentor
Summer programs for junior high and high school students
    Summer Institute for Women in Computer Science
    Women in Engineering
    Minorities in Engineering
    American Indian Science and Mathematics
Faculty Advisor
    NOW student chapter
    ACM Student Chapter
    WICS (Women in Computer Science)
Faculty Sponsor, ACM Programming Contest Team, 1989–1992

Committee Assignments

University

Strategic Faculty Hiring Initiative – 2008–2009
Blue Ribbon Information Technology Needs Commission – 2004 – 2005
Strategic Planning Working Group, September 2002 – August 2004
Center for Integrated Learning and Information Technology Building Committee, 1999 – 2005
Center for Teaching, Learning and Faculty Development Steering Committee, 1996–1998
Committee to Develop New Faculty and GTA Orientation Program, 1994–1996
Presidential Commission for Women, 1992–, Chair, 1992–1993
Ad hoc Committee on Teaching Evaluation, 1994–1996
Faculty Handbook Revision Steering Committee, Chair, 1993–1996
TQE Team on Advising, 1994–1995
President's Cabinet, 1992–1994
Academic Women's Caucus Steering Committee, 1990–1991, Coordinator, 1990–1991
Director of Information Technology Search Committee, 1993–1994
Interim Affirmative Action Officer Search Committee, 1993
National Technical University Computer Science and Engineering Faculty Representative, 1987–
Graduate School Seed Grant Committee, 1990–1991
Freshmen Mentor Program Advisory Committee, 1989–1990
University Admissions Liaison Committee, 1987–1991
Academic Computing Services Director Search Committee, 1987
Committee for Campus Enrichment, 1986–1989, 1995–
University CAPON Committee (Committee to Advise on Priority of Needs), 1982–1989
General Education Committee, 1985–1986
University Faculty Development Committee, 1982–1984
Mark Eugene Howard Art and Technology Committee, 1981–1982

University Senate

Senate Elections Committee, Chair, 1995–1996
Commission to Evaluate the University Administration, 1991
Senate Secretary, 1984–1985
Senator, 1982–1985
Senate Alternate, 1985–1987, 1995–1996
Senate Curricular Policy Committee, Chair, 1982–1987
Senate Retrenchment Policy Committee, 1984–1985

College

College Tenure and Promotion Committee 1989–1991, Chair, 1992–1993
Center for Experimental Computation Steering Committee, 1986–1987

Department

Computer Science Recruitment Committee, 1979–1991, 1992–1997, Chair, 1979–1986, 1996–1997, 2011
Computer Science Headship Search Committee, 1986–1992
Computer Science Graduate Committee, 1980–1991, Chair, 1980–1985
Computer Science Undergraduate Recruitment and Retention Committee, 1987–1991
Computer Science Undergraduate Committee, 1978–1987, 1993–1997, Chair, 1993– 1997
Computer Science Promotion, Tenure, and Reappointment Committee, 1986–1991, 1992–1996, 2010–
Mathematical and Computer Sciences Department Coordinating Committee, 1982–1986