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EDUCATION

Boston Latin School, graduated June, 1964.
Brandeis University: B.A., Cum Laude with Honors in Mathematics, June, 1967.
M.A. (Mathematics), June, 1969; Ph.D. (Mathematics), May, 1974.
New York University School of Law: J.D., February, 1978.
Also attended: University of Notre Dame, 1967-1968; Bates College, 1963-1965.

TEACHING EXPERIENCE

Humboldt State University, Professor of Mathematics, 1993-present.
Associate Professor of Mathematics, 1986-1993; Assistant Professor, 1981-1986.

HSU Math Contest Co-Director, 1983 - present.
Kieval Lecture Committee, Chair, 1983-1991, 1992-2002.
Colloquium Chair, 1982-1991.
Redwood Area Math Project Advisory Committee, 1984-91.
Math Club Advisor (founder), 1982-1987.
Math Department Prize and Scholarship Committee Chair, 1998-present.
I have served on numerous university committees, including the Graduation Writing Proficiency Exam (GWPE) committee, the University Library Committee, the Educational Policy Committee, the University Center Board of Directors, and as advisor to the Chess Club and the Jewish Student Union.

Bard College, Assistant Professor of Mathematics, 1975 - 1981.
Department Chair: January, 1978 - June, 1980.
Director of Academic Computing, Spring, 1979 - June, 1981.

OTHER TEACHING EXPERIENCE

University of California, Berkeley, Visiting Assistant and Associate Professor, Summers, 1986-1990, 1992.
University of Toronto, Visiting Professor, Fall, 1988.
College of the Redwoods, Assitant. Professor., part time, Spring, 1983-Spring, 1987.
University of San Francisco, Visiting Lecturer, Summer, 1984.
Baruch College, CUNY, Adjunct Assistant Professor of Mathematics, 1974-1975.
Mount Holyoke College, Instructor of Mathematics, 1971-1972.
Brandeis University Upward Bound, Teacher, Consultant, Tutor, 1967, 1970, 1973, 1974.
Brandeis University, Teacher of Undergraduate Mathematics, 1968-1971, 1972-1973.
University of Notre Dame, Teaching Assistant, 1967-1968.

A Partial List of Courses Taught

For syllabi and materials of my current courses see <http://www.humboldt.edu/~mef2/>
and for older courses see <http://www.humboldt.edu/~mef2/Courses/oldcourses/courses.html>

Developmental Courses:

Intermediate Algebra
Geometry

Lower division Courses:

Pre-calculus (with Trigonometry)
Finite Mathematics
Contemporary Mathematics

- ▶ *For All Practical Purposes*
 - ▶ A Visual Approach to Math
- Course Materials Available on-line.

Calculus I, II, and III
Calculus for the Biological Sciences &
Natural Resources
Calculus for Business and Economics
Elements of Linear Algebra
Introduction to Mathematical Proofs

Upper Division Courses and Tutorials:

Introduction to Algebraic Structures
Abstract Algebra II
Linear Algebra
Advanced Calculus
Complex Variables
Differential Equations
Topology
Problem Solving Seminar

Geometry (Projective and Euclidean)
Mathematical Logic and Set Theory
History of Mathematics
Philosophy of Mathematics
Tutorial in Writing Proofs
Computer Programming in APL/ Fortran
Game Theory

PROFESSIONAL ACTIVITY

Yale University Mathematics Department Visiting Fellow, Fall, 1980. Course work in Mathematical Economics and Game Theory. Working Seminar on Nonstandard Analysis. N.E.H. Fellow, Summer, 1980. N.E.H. Seminar on "Frege and the Philosophy of Mathematics," U.N.C., Chapel Hill, directed by Professor Michael Resnik.

Academic Interests: Social Science Applications of Mathematics (especially Game Theory and Economics); Foundations of Mathematics; History, Philosophy and Methodology of Mathematics; Mathematics Education (Calculus Reform); Applications of the Computer to Instruction; Geometric and Algebraic Topology.

Computer Activity: Active with use of technology in instruction using Winplot, Wingeom, X(PLORE), Geometer's Sketchpad, and HP graphing calculators. Some web page designing. Programming Languages: Basic, Fortran, APL.

Member: Mathematical Association of America (MAA)

Current and Recent Projects:

- Lead faculty for Mathematics, California IMPAC Project, Fall, 2003- present.
For a recent presentation on the IMPAC project information as well as other relevant information see <http://www.humboldt.edu/~mef2/IMPAC/MATHIMPAC.html>
- Lead faculty for CSU, Mathematics Project on Lower Division Requirements (POL) Project, January, 2004.
- Disciplinary Facilitator for Mathematics for the CSU Lower-Division Transfer Patterns (LDTP) Project, September, 2004 - present.
- Workshops on using Winplot:
"Winplot: Freeware for Precalculus through Differential Equations," workshop at AMATYC Conference, Salt Lake City, Nov. 15, 2003. A similar presentation will be made at the CMC³ Conference, December, 2004 and the CMC³-South Conference in March, 2005.
- Participated in On-line NSF workshop "Authoring Online Interactive Materials in Mathematics" July 16-19, 2002.
On-line Materials on Mapping figures developed with Ken Yanosko and Yoon Kim
- *The Sensible Calculus Book* - web and text materials. This book was under contract to West Educational Publishing, released from contract by Brooks/Cole (ITP), January, 1997. Currently in discussions with John Wiley Publishing.
To find out more about the Sensible Calculus Project:
http://www.humboldt.edu/~mef2/senscalca_x.htm
- Mathematics Association of America (MAA) Subcommittee: CRAFTY. [More details under separate Heading]
- Articles and presentations on calculus reform, introducing history, probability and economics in calculus instruction, and mapping (transformation) figures for visualizing functions.
Many of these can be viewed on-line by opening the link:
<http://www.humboldt.edu/~mef2/Recent.html>

PAST PROJECTS, PRESENTATIONS, PUBLICATIONS, ETC.

General

- Numerous contributed papers, panels, and workshops presented at the International Conferences on Technology in Collegiate Mathematics, the annual Joint Mathematics Meetings of the AMS and the MAA., AMATYC Annual Conferences, and CMC³ Conferences.
- Numerous workshops for HSU faculty and students on using technology: Winplot, X(PLORE), and HP 48 calculators.
- Book and Media Editor: UME TRENDS, News and Reports on Undergraduate Mathematics Education, Jan., 1989 - Jan., 1996. I wrote a reviewing column, "Noteworthy Books and Such" that appeared three times annually.
- Co- PI for NSF Grant - AMATYC, "Workshops for Implementing the AMATYC Standards," 1996-1998.
- Referee/Reviewer: National Science Foundation, American Mathematical Monthly, College Mathematics Journal, PRIMUS, Journal for Research in Mathematics Education, and commercial publishers.
- Consultant to CSU, Sacramento on Mathematics Department Program Review: Spring, 1996. Consultant Workshop on Calculus Reform at Math Department retreat. CSU Fullerton. August 23, 1994.
- Organizer/Owner, Calc-reform e-mail list at the American Mathematical Society, e-math.ams.org, 1991- present.

HSU Mathematics Department Colloquia and Non Course Presentations-

A Sampling since 1992. Many are on-line. See: <http://www.humboldt.edu/~mef2/Recent.html>

"Models, Numbers, and Measure Theory: The Independence of The Continuum Hypothesis. In memory of my mentor, Jean van Heijenoort", Sept. 2, 2004.

"The Door Swings Both Ways: Making Calculus Sensible with Economics or Economics Sensible with Calculus", December 11, 2003.

"Mathematics Beyond Good and Evil: Duality in Geometry, Algebra, and Calculus!" November 21, 2002.

"What Is Topology and Why Is It Useful?" March 7, 2002.

"The Possible and the Impossible: Some examples of the use of models and their consequences" Dec. 6, 2001.

"The Continuum Hypothesis: A Look at the 20th Century History of the Real Numbers from Cantor to Cohen/Scott/Solovay" Sept. 14, 2000.

"Life on a Torus: Some of the Mathematics from the World of Pacman" Sept. 30, 1999.

"The History of Logarithms: A glimpse of some highlights." Feb. 4, 1999.

"Mathematical Encounters with the Number 7." Sept. 10, 1998.

"Solving Calculus Problems without Calculus." April 2, 1998.

"Dynamic Visualization of Calculus." September 18, 1997.

Organized HSU Mathematics Colloquium Series with Michael Goodman on T.S. Kuhn and the Philosophy (and History) of Science and Mathematics, including presentation on the impact of T.S. Kuhn's views on the philosophy and history of mathematics. October 24 and 31, 1996.

"Numbers, Real Numbers, and Decimals." October 12, 1995.
"Comparing Graphing Calculators: Math on the HP 48G and the TI85." (With Jeff Haag) Feb. 16, 1995.
"The Projective Plane, an Introduction to its Geometry and Topology." May 6, 1993.
"The Grand Finale: some Questions at a time of ending and commencing." May 12, 1994.
"Visualizing Functions in Calculus III." Fall, 1993.
"Dice and Dart Games," a talk given (to the junior high school students) at the Redwood Empire Mathematics Tournament at HSU, March 20, 1993.
"The Relation of The Derivative to Probability," February 23, 1993.
"Some Calculus before Newton and Leibniz." September 29, 1992.
Presentations on mathematics for GRE preparation seminars organized by Nezzie Wade for Learning Skills Center. 4 times per year, Fall, 1995 - Spring, 1998.

Participant to NSF Sponsored Programs:

Symposium on Implementing Reform in Mathematics, Engineering and the Sciences; Scottsdale, Arizona, June, 1996.
Open Forum on Calculus Reform, U. of Arizona, Tempe, Arizona, Sept. 8-10, 1995.
"Preparing for a New Calculus", at the University of Illinois Allerton Conference Center, April 22-25, 1993.
Mathematicians and Education Reform Network (NSF - sponsored) workshop on Changing the Culture, Berkeley, CA, March 4-7, 1993.

Mathematical Association of America CUPM Subcommittee on Calculus Reform and The First Two Years (CRAFTY) Related Activities:

Member, 1993-1999. Friend of CRAFTY, 1999- present.

Designed and managed CRAFTY web pages, 1994-2003.

Organizer, Chair of Panel Discussion on "What Are Colleges Doing with Students with AP Placement?" at Joint Mathematics Meetings, Phoenix, Arizona, 2004.

Organizer of Contributed paper session "Interactive and Dynamic Visualization for Precalculus and Calculus" at MAA MathFest, 1998 in Toronto, August, 1998.

Member of CRAFTY panel on "Calculus Reform" at ASEE meeting in Seattle, WA, June, 1998.

Organizer of Contributed paper session " Planning Reformed Calculus Programs: Experiences and Advice" at Joint Mathematics Meetings, Orlando, FL, January, 1996.

Member of panel on "Calculus, the Dynamics of Change" at Joint Mathematics Meetings, Orlando, FL, Jan. 1996.

- Section Editor and contributor to *Calculus, The Dynamics of Change*, A. Wayne Roberts, Editor, MAA Notes, Number 39. January, 1996. Edited and wrote notes for Part II on Planning, pp. 41-65, *Calculus on the Internet*, pp165-166.

Organizer, Chair Panel Discussion on "Institutional approach to calculus reform- Getting everyone on board," at Joint Mathematics Meetings, San Francisco, January, 1995.

Other Publications, Workshops, and Presentations (Since 1992.)

Many of these are on-line through my web site: <http://www.humboldt.edu/~mef2/Recent.html>

- "Historical Motivation for a Calculus Course: Barrow's Theorem" in *Vita Mathematica: Historical Research and Integration with Teaching*, edited by Ronald Calinger, MAA Notes, No. 40, 1996.
 - "Concepts to Drive Technology," in *Proceedings of the Fifth Annual International Conference on Technology in Collegiate Mathematics*, Addison-Wesley, 1994, pp 166-172.
 - "Probability: Connecting Concepts in Precalculus and Calculus," in *Preparing for a New Calculus: Conference Proceedings*, Anita Solow, editor, MAA Notes Number 36, 1994, pp 108-110.
 - *Isometries*, a module for use in geometry courses, with Orville Bierman, William Blank, Xiaoyun Ma, Delene Perley, Hanna Sandler, and Jean Spath) in: *Geometry II, Faculty Advancement in Mathematics Series*, The Consortium for Mathematics and its Applications, 1993, pp. 1–21.
 - "Cuisenaire Rods Go to College" with P. Z. Chinn, G. Colyar, and E. Migliore,, *PRIMUS*, Vol. II, No. 2 (June 1992), pp. 118-130.
 - "A Sensible Calculus" Editorial, *The UMAP Journal* (1990) 11 : 93-96.
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- ▶ Winplot 2 Hour Workshop at AMATYC Conference, Salt Lake City, Nov. 15, 2003
 - ▶ Special Seminar and Workshop on "Visualizing Functions in Calculus I to III" and Colloquium on "Probability and Calculus" at U. of Arizona, Tempe, Arizona, September 7, 1996.
 - ▶ Three hour Workshop on HP48G at CMC³ Conference, Monterey, CA, December, 1995
 - ▶ "Introduction to X(PLORE)" workshop at the Nineteenth Annual Conference of AMATYC, Boston, November, 1993.
 - ▶ Workshop with David Meredith (SFSU), "An introduction to X(PLORE)" at the Fifth Annual ICTCM, Chicago, November, 1992.

"Estimating Integrals Using Polynomials:A Tale of Two Problems (and a little history as well) Eureka High School, May 27,2004.

"Winplot -Freeware for Pre-calculus through Calculus III and Differential Equations" ICTCM Nov. 2, 2002

"Using Probability to Understand Calculus ", MAA Jan. 7, 2002

"The Continuum Hypothesis: A Look at the History of the Real Numbers in The Second Millennium. ", MAA Jan. 7, 2002

"Technology and the History of Mathematics", ICTCM 12, Nov. 6, 1999

"Dynamic Visualization of PreCalculus and Calculus Concepts with Geometer's Sketchpad" AMATYC ConferenceWorkshop. Nov. 5, 1998

"Dynamic Visualization of Calculus I-III with The Geometers' Sketchpad" MAA Mathfest '98.

"Dynamic Visualization of Calculus: More Concepts to Drive Technology," a one hour Address at ICTCM 11, NewOrleans, Louisiana, November 21, 1998. .

"Dynamic Visualization of Precalculus and Calculus Concepts with Geometer's Sketchpad," a

two hour Workshop, AMATYC 24th Annual Conference, November 5, 1998. Portland, Oregon.

Consultation visit and Presentation "Numbers, Real Numbers, and Decimals" at Special Mathematics Department Colloquium, Catholic University, Washington, DC, April 11, 1997.

"Visualizing Functions with Scalar Fields" presented at a contributed papers session, ICTCM 9, Reno, Nevada, November 9, 1996.

"Two departments: A fictional tale of change and illusion." presented at the Contributed paper session "Planning Reformed Calculus Programs: Experiences and Advice" for Joint Mathematics Meetings, Orlando, FL, January, 1996.

"Connecting Themes between sensible Precalculus and Calculus Programs: Estimation, Rates, and Probability." CMC³ Conference, Monterey, CA, December, 1995.

"Probability as a Recurring Theme in Calculus," an Invited One Hour Address at the Fourth Conference on Teaching of Mathematics, sponsored by Addison-Wesley and the NSF, San Jose. June, 1995.

Presentation on "Mathematics and Liberal Arts General Education" at the State of Jefferson Mathematics Congress, May, 1995.

MAA Poster Session Presentation on "The Sensible Calculus Project" at the Joint Mathematics Meetings in Cincinnati, Ohio. January, 1994.

"Sensible Calculus Program Reforms: Concepts and Planning" at CMC³ Conference, Monterey, CA, December 3, 1993.

Special seminar on "Calculus and Technology," Northeastern University, Boston, November, 1993.

Invited Panel presentation on departmental planning for calculus reform. Conference on Teaching Calculus, Harvard University. Summer, 1993.

"Probability in Teaching Precalculus," at the Winter Mathematics Conference of the California Mathematics Council to the Far North, February, 1993.

"Visualizing Probability in The First Year of Calculus" at the MAA session on "Use of Visualization in the Teaching of Mathematics," at the joint mathematics meetings of the AMS and MAA, San Antonio, Texas, January, 1993.

"Concepts to Drive Technology," invited 1 hour presentation, at the Fifth Annual International Conference On Technology in Collegiate Mathematics (ICTCM), Chicago, November, 1992.

Co-organizer of Poster Session at the Fifth Annual ICTCM, Chicago, November, 1992.

"Historical Motivation for A Calculus Course: Barrow's Theorem." A 30 minute address made at the quadrennial meeting of the International Study Group on the Relations Between History and Pedagogy of Mathematics in Toronto, CA, August 13, 1992.

