CURRICULUM VITAE

Robert W. Hayden

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EDUCATIONAL BACKGROUND

Post-Ph.D. study

The following courses were taken at statistics.com. They are approximately equivalent to a one-week full-time workshop or university course of at least one-credit.

Time Series Forecasting, April 2005.
Introduction to Resampling Methods, January 2006.
Introduction to R, February 2006.
Categorical Data Analysis, June 2006.
Environmental Impact Assessment, October 2006.
Statistical Process Control, January 2007.
Modeling in R, January 2007.
Statistical Analysis Using R, April 2007.
Introduction to Regression, April 2007.
Introduction to Biostatistics, July 2007.

At Iowa State University, summer 1982:

Analysis of Variance and Design of Experiments
Independent Study in SPSS

Academic degrees

Ph.D. (joint major in mathematics and education), 1981, Iowa State University, Ames, IA 50011. My dissertation was a history of the "new math" movement in the United States, done under W. B. Rudolph. A brief review of this appeared in the Summer 1982 issue of *The Journal of Mathematical Behavior.*

M.S. (mathematics), 1975, University of Connecticut, Storrs, CT 06268.

B.S. (mathematics), 1972, MIT, Cambridge, MA 02139.

EMPLOYMENT EXPERIENCE

statistics.com, 612 N. Jackson St., Arlington, VA 22201, 2005-present. (Teaching online statistics courses part-time.)

Plymouth State University, Department of Mathematics, Plymouth, NH 03264. Associate Professor, 1988-2004, Assistant Professor, 1985-1988, now retired.

Connecticut Business and Industry Association, Hartford, CT 06103. Senior Writer in an NSF-funded project to develop innovative high school mathematics textbooks, 1993-1997.

Winona State University, Department of Mathematics and Statistics, Winona, MN 55987. Assistant Professor, 1981-1985.

Southwest State University, Department of Mathematics and Computer Science, Marshall, MN 56258. Assistant Professor, 1980-1981. (Temporary, three-quarter time position while writing dissertation.)

Iowa State University, Department of Mathematics, Ames, IA 50011. Instructor, 1978-1980, Teaching Assistant, 1975-1978.

University of Connecticut, Department of Mathematics, Storrs, CT 06268. Teaching Assistant, 1973-1975.

Dynatech R/D, 99 Erie St., Cambridge, MA 02139. Research Assistant, 1964-1972.

TEACHING AREAS/INTERESTS

Furthering quantitative literacy in our society, statistics (including AP Statistics), curriculum development, innovative and interdisciplinary courses, applied mathematics (including discrete mathematics and mathematical modeling).

RESEARCH AREAS/INTERESTS

How students learn, using writing and technology in teaching mathematics and statistics, use of real data and computers in teaching statistics, use of the Internet for professional development and the improvement of teaching, history of mathematics education, history of philosophy, science, mathematics, engineering, and technology.

PUBLICATIONS

Books

Minitab Guide to accompany *Statistics and Data Analysis: An Introduction* by Siegel and Morgan, Plymouth State College, 1996-2001.

High school mathematics textbooks with W. Berlinghoff and C. Sloyer, all originally published by Connecticut Business and Industry Association Education Foundation and The Hartford Alliance for Mathematics and Science Education, under a grant from the National Science Foundation:

MATH Connections IIb (second semester of grade ten), 1995.

MATH Connections IIa (first semester of grade ten), 1994.

MATH Connections Ib (second semester of grade nine), 1994.

MATH Connections Ia (first semester of grade nine), 1993.

(These have since been commercially published by *It's About Time,* with a second edition in press in 2009.)

Discrete Mathematics: Its Nature and Uses, Plymouth State College, 1985-2000.

Invited Papers and Book Chapters

Emergency Relief for the First-Time AP Statistics Teacher, North Carolina School of Science and Mathematics 2007 Statistics Institute, Durham, NC.
http://courses.ncssm.edu/math/Stat_Inst/Stats2007/Bob%20Hayden/Relief.html

10% Assumption for Inference, AP Central, 2004.
http://apcentral.collegeboard.com/apc/members/courses/teachers_corner/391

Advice to Mathematics Teachers on Evaluating Introductory Statistics Textbooks, a chapter in *Resources for Undergraduate Instructors Teaching Statistics*, Thomas L. Moore, ed., Mathematical Association of America, Washington, D.C., 2000.

Searching the Mathematical Literature from the Boondocks, *Notes from MathSci*, Vol. 2, No. 1 (February 1993), pp.1 and 3.

Using Writing to Improve Student Learning of Statistics, a chapter in *Using Writing to Teach Mathematics*, A. Sterrett, ed., Mathematical Association of America, Washington, D.C., 1990.

With W. J. Roberts:

Using Birthday Data to Integrate Statistics into the K-12 Mathematics Curriculum, *The Statistics Teacher Network*, Winter 1995, pp. 3-5.

With W. B. Rudolph:

Will There Be a New "New Math?" *Journal of Curriculum Studies*, Vol. 16(1984), pp. 311-316. A brief review of this article appeared in the March l985 issue of *The College Mathematics Journal*.

Other Papers

Using Writing to Teach Statistics, *Proceedings of the Section on Statistical Education* of the American Statistical Association, 1992, pp.188-190.

Using Writing to Improve Student Learning of Statistics, *Plymouth State College Journal on Writing Across the Curriculum*, Vol. 1, No. 1 (June 1989), pp.3-10. (Reprinted with additional thoughts in 1999.)

With F. Kianifard:

Preparing High School Mathematics Teachers to Teach Statistics, *The American Statistician*, Vol. 46, No. 4 (November 1992) pp.290-295.

With R. P. Tye:

The Thermal Conductivity and Electrical Resistivity of Copper and Copper Alloys in the Molten State, *High Temperatures - High Pressures*, Vol. 11(1979), pp. 597-605.

With R. P. Tye and S. C. Spinney:

Thermal Conductivity of Selected Alloys at Low Temperatures, *Advances in Cryogenic Engineering*, Vol. 22(1977), pp. 136-144.

The Thermal Conductivity of a Number of Alloys at Elevated Temperatures, *High Temperatures - High Pressures*, Vol. 4(1972), pp. 503-511.

Invited Reviews

I reviewed the following books for the *Journal of Biopharmaceutical Statistics* shortly after they were published.

Modern Regression Methods, Second Edition, by T. P. Ryan, 2009.

Sampling of Populations: Methods and Applications, Fourth Edition, by P. S. Levy and S. Lemeshow, 2008.

How to Display Data, by J. V. Freeman, S. J. Walters, and M. J. Campbell, 2008.

Applied Regression Analysis and Other Multivariable Methods, Fourth Edition, by D. G. Kleinbaum, L. L. Kupper, A. Nizam, and K. E. Muller, 2008.

Presenting Medical Statistics from Proposal to Publication: A Step-by-Step Guide, by J. L. Peacock and S. M. Kerry, 2007.

Study Design and Statistical Analysis: A Practical Guide for Clinicians , by M. H. Katz, 2006.

Multivariable Analysis:: A Practical Guide for Clinicians , by M. H. Katz, 2006.

Statistics: A Guide to the Unknown, Fourth Edition, by R. Peck, G. Casella, G. W. Cobb, R. Hoerl, D. Nolan, R. Starbuck, and H. Stern (Eds.), 2006. (Also reviewed for *The Statistics Teacher Network*.)

Applied Linear Regression Models, Fourth Edition, by M. H. Kutner, C. J. Nachtsheim, and J. Neter, New York: McGraw-Hill/Irwin, 2004.

Applied Linear Statistical Models, Fifth Edition, by M. H. Kutner, C. J. Nachtsheim, J. Neter, and W. Li, New York: McGraw-Hill/Irwin, 2004.

Common Errors in Statistics (and How to Avoid Them), by P. I. Good and J. W. Hardin, 2003.

Statistical Rules of Thumb, by G. van Belle, 2002.

Reviews in other publications:

Review of *The Minitab Handbook*, in *The Statistics Teacher Network*, 2000.

Review of Two Collections of Data for Use in a First Course in Statistics, *The American Statistician,* Vol.50, No.2 (May 1996), pp. 168-169.

Review of *A Handbook of Small Data Sets*, in *The Statistics Teacher Network*, 1995.

Review of EdStat-L, in *The American Statistician*, Vol. 48, No. 4 (November 1994), pp.305-306.

Review of *Introduction to Statistical Reasoning*, in *The American Statistician*, Vol. 53, No. 1 (February 1994), p.86.

PRESENTATIONS

Planning a Statistical Literacy Program at the College Level:Musings and a Bibliography, Joint Statistical Meetings, Toronto, 2004.

Don't Just Teach Exploratory Techniques: Use Them! Beyond the Formula Statistics Conference**,** Rochester, NY August 2001.

Assessing Introductory Statistics Textbooks, Assessment in Statistics Courses conference in Boston, MA, April 1997.

The Statistical Preparation of Future Mathematics Teachers (with my student Michelle M. Lamarre), MAA regional meeting, Amherst, MA, June 1996.

A Student Survey of the Statistical Preparation of Future Mathematics Teachers (with my student Michelle M. Lamarre), New England Statistics Symposium, Worcester, MA, April 1996.

Using Real Data to Teach Statistics, MAA national meeting, Burlington, VT, August 1995.

Participated in a panel discussion on the implications of the NCTM Standards for college teaching, MAA national meeting, Burlington, VT, August 1995.

Contributed a data set with analysis to the examples given attendees at the Workshop on the Advanced Placement Test in Statistics, San Antonio, TX, July 1995.

Presentation on the **MATH** *Connections* curriculum project to NH ATMNE, Plymouth, NH, April 1994.

Presentation with Bill Roberts on Matrices and Data Analysis with Low Cost Software for the Secondary Core Curriculum Project at PSC, June 1993.

Presentation with Bill Roberts on using birthday data to teach statistics, NH ATMNE, Keene, NH, March 1993.

Using Writing to Teach Statistics, ASA national meeting in Boston, August 1992.

Preparing High School Mathematics Teachers to Teach Statistics, ASA national meeting in Louisville, KY, January 1992.

From Old Math to New Math to Discrete Math: A History of Abstract Algebra in the College Curriculum, MAA national meeting in Atlanta, January 1988.

Using Writing Assignments to Improve Student Learning of Mathematics and Statistics, MAA national meeting in Atlanta, January 1988.

Modeling Pizza Prices, MAA national meeting in Atlanta, January 1988.

PROFESSIONAL ORGANIZATIONS

Memberships

American Statistical Association (including Boston Chapter)
Association of Teachers of Mathematics in New England
Vermont Council of Teachers of Mathematics
Society for Industrial Archaeology (Northern and Southern New England Chapters)

Service

Chair, Program Committee, Spring Meeting, 1996, Northeastern Section of the Mathematical Association of America.

Member, Program Committee, Spring Meeting, 1995, Northeastern Section of the Mathematical Association of America.

Member, Editorial Board, *Journal for Statistics Education,* 1995-1999.

Organized (with Mary Parker of Austin, Texas, Community College) a contributed papers session "Making Statistics Come Alive" for the national MAA meeting in San Francisco, January 1995.

Member, (national) Joint Committee of the Mathematical Association of America and the American Statistical Association, 1994-1997.

Member, Steering Committee, Statistical Thinking and Teaching Statistics (S.T.A.T.S.) Project, 1993-1997.

COURSES TAUGHT

High school algebra I, algebra II, and geometry (to college students), college algebra and trigonometry, problem solving in algebra using technology, precalculus, mathematics and the humanities, first year of the standard calculus sequence, short course in calculus for business, finite mathematics with business applications, mathematical modeling (freshman level general education course), discrete mathematics (freshman-sophomore level), discrete probability (calculus based), introductory statistics (service course and calculus-based course), analysis of variance, multiple regression (a course for business majors), multiple regression (a course for statistics and mathematics majors), survey sampling (independent study), statistics for teachers (in-service graduate course team taught with Dr. Farid Kianifard), mathematics for elementary school teachers, number systems of mathematics (axiomatic), linear algebra, differential equations, mathematical modeling (seminar for senior mathematics majors), *Home, Work, and Play in 19th Century Urban America* (team taught with historians William L. Taylor and E. John B. Allen)

WORK-RELATED STUDY, PROFESSIONAL MEETINGS,

SEMINARS, OR WORKSHOPS

North Carolina School of Science and Mathematics 2007 Statistics Institute, Durham, NC $	
ASA National Meeting in Toronto	August 2004.
Beyond the Formula Statistics Conference, Rochester, NY	August 2001.
Summer Institute on MATH *Connections*, PSC	July 2000
MAA Northeastern Section Meeting in Concord, NH	June 2000
ASA National Meeting in Baltimore, MD	August 1999
MAA National Meeting in Providence, RI	July 1999
MAA Northeastern Section Meeting in Waterville, ME	June 1999
Chance Lectures in Hanover, NH $	December 1998
MAA National Meeting in Toronto, Canada	July 1998
Isolated Statisticians Meeting in Amherst, MA $	June 1998
Chance Lectures in Hanover, NH $	December 1997
Isolated Statisticians Meeting in Amherst, MA $	June 1997
Assessment in Statistics Courses conference in Boston, MA*	April 1997
Gateways V (Implementing Reform Curricula) in Madison, WI $	September 1996
Isolated Statisticians Meeting in Williamstown, MA $	June 1996
MAA Northeastern Section Meeting in Amherst, MA	June 1996
New England Statistics Symposium in Worcester, MA	April 1996
Trends in Intro. Applied Statistics Conference in Framingham, MA	March 1996
MAA National Meeting in Burlington, VT*	August 1995
AP Statistics Workshop in San Antonio, TX $	July 1995
Chance Workshop at Dartmouth College, Hanover, NH $	July 1995
MAA Northeastern Section Meeting in Lewiston, ME	June 1995
MAA Northeastern Section Meeting in Newport, RI	June 1994
New England Statistics Symposium in Kingston, RI	April 1994
MAA Minicourse on teaching statistics in Worcester, MA	April 1994
NH ATMNE Meeting at PSC, Plymouth, NH*	April 1994
MAA National Meeting in Cincinnati, OH	January 1994 (Minicourses: Unifying Themes in Discrete Mathematics & The Math. Modeling/Precalculus Reform Project)
Data Driven Curriculum Meeting in Hartford, CT $	November 1993
ASA Boston Chapter Fall Symposium	October 1993
NH ATMNE Meeting in Keene, NH*	March 1993
ASA National Meeting in Boston, MA*	August 1992
ASA National Meeting in Louisville, KY*	January 1992
ASA Boston Chapter Meeting in York, ME	October 1991
MAA Northeastern Section Meeting in Randoph Center, VT	June 1991
Statistics Workshop in Richmond, VA $	June 1990
New England Statistics Symposium in Lowell, MA	April 1990
NEMATYC Meeting at Mass. Bay C.C.	March 1990
ASA Short Course in Logistic Regression in Worcester, MA	February 1990
ASA Stats. Ed. for the Future Meeting, MIT	December 1989

MAA Northeastern Section Meeting in Keene, NH	June 1989
NEMATYC Meeting in Franklin, MA	March 1989
ATMNE Leadership Conference in Manchester, NH*	October 1988
MAA Short Course in Modeling at Univ. of Maine *	June 1988
MAA National Meeting, Atlanta, GA*	January 1988 (Minicourse: Computing in Linear Algebra)
TeX Workshop, Atlanta, GA	January 1988
MAA Northeastern Section Meeting in Waltham, MA	November 1987
MAA Short Course in Applications of Discrete Math. at U. of Maine	June 1987
Second Conference on the Teaching of Statistics, Oneonta, NY	April 1987
New England Statistics Symposium, Storrs, CT	April 1987
ASA Boston Chapter Fall Symposium in Waltham, MA	November 1986
MAA Northeastern Section Meeting in Worcester, MA	November 1986
MAA Northeastern Section Meeting in Durham, NH	June 1986
MAA Short Course in Linear Algebra at Univ. of Maine	June 1986
ASQC Intro. to Quality Control course	Winter 1985
Miami U. Math./Stat. Mtg., Oxford, OH	September 1984
MAA North-Central Section Meeting in St. Paul, MN*	April 1984
MAA Wisconsin Section Discrete Math. Mtg.	October 1983
MAA National Meeting in Albany, NY	August 1983 (Minicourse: Pascal for Mathematicians)
Great River Writing Project, Winona, MN $	June 1983
AAUW Building Math. Confidence (U. of Iowa)	June 1983
50 Years: Iowa St. U. Stat. Lab, Ames, IA	June 1983
PME Statistics Conference in Collegeville, MN	April 1983
AERA Annual Meeting in Montreal *	April 1983
NCTM Sioux Falls Meeting *	March 1983
MAA National Meeting in Toronto	August 1982 (Minicourse: Exploratory Data Analysis)
MAA North Central Section Meeting*	April 1982
Applied math. Conference, UW-Stout, WI	April 1982
SWMCTM Meeting in New Ulm, MN	October 1980
RCDPM National Convention in Vancouver	April 1980
NCTM National Convention in Seattle, WA	April 1980
MAA National Meeting in Duluth, MN	August 1979
NCTM National Convention in Boston, MA	April 1979
NCTM Des Moines Meeting	March 1979
SSMA National Convention in Des Moines, IA	November 1978
NCTM Kansas City Meeting	October 1978

* invited guest, speaker, or moderator
$ all or a substantial part of my expenses covered by external funding

AAUW = American Association of University Women
ASA = American Statistical Association
ASQC = American Society for Quality Control
ATMNE = Association of Teachers of Mathematics in New England
MAA = Mathematical Association of America
NCTM = National Council of Teachers of Mathematics

NEMATYC = New England Mathematical Association of Two-Year Colleges
PME = Pi Mu Epsilon (national student honorary society in mathematics)
RCDPM = Research Council on Diagnostic and Prescriptive Mathematics
SWMCTM = South West Minnesota Council of Teachers of Mathematics
SSMA = School Science and Mathematics Association

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