

CURRICULUM VITAE

Thomas Ezra Love, Ph. D.

Professional address:

Center for Health Care Research & Policy
CWRU/MetroHealth Medical Center
Rammelkamp Research & Education Building
2500 MetroHealth Drive
Cleveland, OH 44109-1998

Telephone: 216-778-1265 (office) 216-751-8456 (home) 216-778-3945 (fax)

E-mail: TEL3@po.cwru.edu

World Wide Web: <http://www.chrp.org/love>

PRESENT ACADEMIC RANK AND POSITION

Assistant Professor of Medicine, School of Medicine, Case Western Reserve University
Assistant Professor of Operations, Weatherhead School of Management, Case Western Reserve University
Director, Biostatistics and Evaluation Unit, Center for Health Care Research & Policy, CWRU/MetroHealth Medical Center

EDUCATION

Ph. D., 1994, The Wharton School, University of Pennsylvania, Philadelphia, Statistics.
Dissertation Advisor: Paul Rosenbaum, "Distractors and Item Response Theory".
M. A., 1992, The Wharton School, Statistics.
M. S., 1990, Teachers College, Columbia University, New York, Mathematics Education.
M. A., 1989, Teachers College, Mathematics Education.
A. B., 1988, Columbia College, Columbia University, New York, Mathematics.

HONORS AND AWARDS

Finalist, Outstanding Teaching Award, Weatherhead School of Management, 1998-99.
J. Parker Bursk Prize for Outstanding Graduate Student, Department of Statistics, The Wharton School, 1994.
Donald S. Murray Prize for Excellence in Teaching, Department of Statistics, The Wharton School, 1991.
Fellowship, Department of Statistics, The Wharton School, 1990-94.
Fellowship, Department of Mathematics & Science Education, Teachers College, 1988-90.

PREVIOUS PROFESSIONAL POSITIONS AND APPOINTMENTS

Assistant Professor, Department of Operations, Weatherhead School of Management, Case Western Reserve University, 1994-2001.

Lecturer, Department of Statistics, The Wharton School, University of Pennsylvania, 1995.

TEACHING

Assistant Professor, CWRU School of Medicine

Instructor, Eight Sessions on Biostatistics. **Clinical Research Scholars Program**, July 2002. Topics included Introduction to Biostatistics, Comparing Groups, Power & Sample Size, Measures of Association, Linear Regression, Multiple & Logistic Regression, Propensity Methods, and a Problem Set. Authored two problem sets for the program.

Instructor, "Linear Regression and Correlation" **Clinical Research Scholars Program**, July 2001. Tied for highest rated segment of CRSP in student evaluations.

Developing two courses (core Biostatistics and elective in Observational Studies) for the Clinical Research Scholars Program, CWRU School of Medicine, for 2003.

Assistant Professor, Weatherhead School of Management.

Pre-Term MBA Program in Statistics and Mathematics. ("Math Camp") Full-time first-year MBA students. 1997-2001.

Statistics for Managers. [MBAC 414] Required Core Course for full-time first-year MBA students. 1997-2000.

Managerial Statistics. [QUMM 403] Required Core Course for full-time and part-time MBA students. 1994-1997.

Data Analysis. [OPRE 404] Elective for MBA, M.S., Ph.D. and undergraduate students. 1995 and 1997-2001. Modules in Design and Analysis of Experimental/Survey Data and Time Series Data and Forecasting.

Regression Models for Management. [OPRE 405] MBA Elective. 1998-2000.

Statistical Methods for Operations Research Applications. [OPRE 428] Required Course for M.S./Ph.D. students. 1997-8, 2000.

Experimental Design. [OPRE 528] Elective for Ph.D. students. 1995.

Time Series Analysis. [OPRE 529] Elective for Ph.D. students. 1996.

Statistics in Operations. [OPRE 490] Elective for M.S./Ph.D. students. 2000.

Lecturer and Teaching Assistant, Department of Statistics. The Wharton School.

Statistics for Behavioral Scientists, I. Required undergraduate course for behavioral sciences majors. Solely responsible for instruction of 135 undergraduates. Spring 1994, Summer 1995.

Statistics for Behavioral Scientists, II. Solely responsible for instruction. Summers 1991, 1992, 1994.

Mathematical Statistics. Solely responsible for instruction. Summer 1993.

Teacher, Department of Mathematics, Hunter College High School, New York. 1988.

Barnard College Education Program, Barnard College, Columbia University, NY. 1987-1988.

PRESENTATIONS AT NATIONAL, REGIONAL, AND INTERNATIONAL MEETINGS

- Cebul, RD, Dawson, NV, **Love, Thomas E.**, and Thomas, CL, Instructors, "Reducing Bias in Decision Models: Propensity Methods," Society for Medical Decision Making Annual Meeting, Baltimore, October, 2002. Sections on "Doing Propensity Analysis: Basics and Matching" and "Stratification, Adjustment, Sensitivity and Strategies."
- Love, Thomas E.** "Displaying Covariate Balance after Adjustment for Selection Bias," Section on Health Policy Statistics, Joint Statistical Meetings, New York, August, 2002.
- Love, Thomas E.**, Hinrichs, C & Konrath, T, workshop leaders. "We've Preached to the Choir: Now What?" Seventeenth Making Statistics More Effective in Schools and Business [MSMESB] Conference, University of Georgia, June 2002
- Love, Thomas E.** "Educating Business Students and Quality: Lessons from the MSMESB Conferences," American Society for Quality, Elyria/Lorain Chapter, November, 2001.
- Love, Thomas E.** "Quality Improvement and Propensity Models," Institute for Operations Research & the Management Sciences (INFORMS) Meeting, Miami, November, 2001.
- Cebul, RD, Dawson, NV, Thomas, CL and **Love, Thomas E.**, Instructors, "Reducing Bias in Decision Models: Propensity Methods," Society for Medical Decision Making Annual Meeting, San Diego, October, 2001. Section on "Instrumental Variables and Presenting Results".
- Love, Thomas E.** "Education, Quality and Making Statistics More Effective in Schools and Business," American Society for Quality, Cleveland Chapter, May, 2001.
- Love, Thomas E.** "Statistics Education and the MSMESB Conferences," American Statistical Association, Cleveland Chapter, March, 2001.
- Love, Thomas E.** Moderator and Convenor, "Special Plenary Session in Memory of David Hildebrand," Fifteenth Conference on Making Statistics More Effective in Schools and Business [MSMESB], Syracuse University, June, 2000.
- Linderman, K and **Love, Thomas E.** "Adaptive Multivariate Exponentially Weighted Moving Average Control Charts," INFORMS Philadelphia, November, 1999.
- Love, Thomas E.** and Hildebrand, David K. "MSMESB Recommendations for Newcomers," 14th Conference on MSMESB, Babson College, June, 1999.
- Linderman, K and **Love, Thomas E.** "Economic and Economic-Statistical Designs for Multivariate Exponentially Weighted Moving Average Control Charts," INFORMS Cincinnati, May, 1999.
- Love, Thomas E.** and Linderman, Kevin "Implementing Economic and Economic-Statistical Designs for MEWMA Control Charts," INFORMS Cincinnati, May, 1999.
- Love, Thomas E.** "Using Economic Designs for Multivariate Control Charts," American Statistical Association, Cleveland Chapter, February, 1999.
- Love, Thomas E.** "Compromises and Success Stories in a Project-Driven Second Course." American Statistical Association Section on Statistical Education, Joint Statistical Meetings, Chicago, August, 1996. Ranked 3rd (tied) of 44 presentations in audience evaluation.
- Love, Thomas E.** "Teaching, Reading and Doing Statistical Proofs." ASA Section on Statistical Education, Joint Statistical Meetings, Orlando, August, 1995. Ranked 5th of 35 presentations in audience evaluation.
- Love, Thomas E.** "Distractor Selection and Differential Item Functioning." Research Statistics Group. Educational Testing Service. Princeton, NJ. August, 1994.
- Love, Thomas E.** "Good Wrong Answers." Department of Statistics, The Wharton School, November, 1993.

PRESENTATIONS AT CASE WESTERN RESERVE UNIVERSITY

- Love, Thomas E.** and Litaker, David “Hierarchical Modeling.” Methods Seminar Series, Center for Health Care Research & Policy, CWRU-MetroHealth, August, 2002.
- Love, Thomas E.** “Item Response Models and Health Services Research.” Methods Seminar Series, Center for Health Care Research & Policy, CWRU-MetroHealth, July, 2002.
- Love, Thomas E.** “Propensity Scores for Selection Bias Adjustment in Observational Studies,” Department of Operations, Weatherhead School of Management, March, 2002.
- Love, Thomas E.** “Smoking, Stephen Jay Gould and Convertibles: Statistical Graphics for Data Presentation and Analysis,” Center for Health Care Research & Policy Methods Seminar Series, January, 2002.
- Love, Thomas E.** “Improving Logistic Regression Analysis: Diagnostics and Model Selection,” Center for Health Care Research & Policy Methods Seminar Series, August, 2001.
- Love, Thomas E.** “Making Statistics Education More Effective in Schools of Business,” Department of Statistics, February, 2001.
- Love, Thomas E.** “Using Economic Designs for Multivariate Control Charts,” Department of Epidemiology & Biostatistics, November, 2000.
- Love, Thomas E.** “Classification Accuracy and Precision for Discrete Response Models,” Center for Health Care Research & Policy, October, 2000.
- Love, Thomas E.** “Classification Accuracy and Precision for Discrete Responses,” Department of Operations, Weatherhead School of Management, April, 2000.
- Love, Thomas E.** “Economic and Economic-Statistical Designs for MEWMA Control Charts,” Department of Statistics, November, 1998.
- Love, Thomas E.** “A Survey of Logistic Regression Diagnostics,” Department of Operations Research, Weatherhead School of Management, April, 1996.
- Love, Thomas E.** “What is a Good Wrong Answer?” Department of Statistics, November, 1995.

RECENT RESEARCH SUPERVISION

- Rodrigue, Tina. “Prediction of Functional Outcome After ICH” M.S. Thesis Committee, 2002-present.
- Litaker, David. “Regional Variation in Health Systems Resources and Access to Health Care in Ohio.” Member, Dissertation Committee. 2001-2002.
- Linderman, Kevin. “Economic, Statistical and Managerial Considerations in the Design of Multivariate Control Charts.” Co-Chair, Dissertation Committee. 1996-1998. Now on tenure-track at the University of Minnesota.
- Smith, Toni. “CEO Compensation: Reactions to Legislative Changes.” Member, Dissertation Committee, Department of Accountancy. 1998-1999. Now on tenure-track at the University of New Hampshire.
- Schwarz, Jeffrey. “Data Mining & the GVU 10th Web Survey.” Independent Study Advisor, Fall 2001.
- Chiang, Huichen. “Stock Returns and Financial Indicators.” Independent Study Advisor, Fall 2000.
- Koch, Darren. “Data Mining.” Independent Study Project Advisor, Fall 2000.

BIBLIOGRAPHY

- Love, Thomas E. and Hildebrand, David K. (2002) "Statistics Education and the Making Statistics More Effective in Schools and Business Conferences," *The American Statistician*, 56, 107-112.
- Linderman, Kevin and Love, Thomas E. (2000) "Economic and Economic-Statistical Designs for MEWMA Control Charts," *Journal of Quality Technology*, 32, 410-417.
- Linderman, Kevin and Love, Thomas E. (2000) "Implementing Economic and Economic-Statistical Designs for MEWMA Control Charts," *Journal of Quality Technology*, 32, 457-463.
- Love, Thomas E. (2000) "A Different Approach to Project Assessment," *Journal of Statistics Education* [Online] 8(1). [<http://www.amstat.org/publications/jse>]
- Love, Thomas E. (1998) "A Project-Driven Second Course," *Journal of Statistics Education* [Online] 6(1). [<http://www.amstat.org/publications/jse>]
- Love, Thomas E. (1997) "Distractor Selection Ratios," *Psychometrika*, 62, 51-62.
- Love, Thomas E. (1997). "Compromises and Success Stories in a Project-Driven Second Course." *ASA 1996 Proceedings of the Section on Statistical Education*. Alexandria, VA: American Statistical Association. 117-122.
- Love, Thomas E. (1996). "Teaching, Reading and Doing Statistical Proofs." in *ASA 1995 Proceedings of the Section on Statistical Education*. Alexandria, VA. American Statistical Association. 199-204.
- Love, Thomas E. (1996) "Nonparametric Statistics" (Essay) *Encyclopedia of Business*, Gale Research.
- Love, Thomas E. and Linderman, Kevin. "A Weibull Process Failure Mechanism for the Economic Design of MEWMA Control Charts," To appear in the *Journal for Statistical Computation and Simulation*.
- Love, Thomas E. "A Math Camp for New MBA Students," To appear in *Journal of Statistics Education*.
- Love, Thomas E. "Using Proof Techniques to Help Students Learn Mathematical Statistics," To appear in *Journal of Statistics Education*.
- Litaker, D & Love, Thomas E. "Regional Variations in Health System Characteristics," Submitted for publication.
- Love, Thomas E. "Expanded Classification Analysis for Logistic Regression," Submitted for publication.
- Love, Thomas E. "Comparing Distractor Selection with Application to the Quantitative Comparison Items of the Scholastic Aptitude Test," Submitted for publication.
- Love, Thomas E. "Distractor Selection and Differential Item Functioning," Submitted for publication.

FUNDING - ACTIVE

RO1-NS 45003-01 (Katzan, Irene, PI) 12/1/02 - 11/30/06 10%
NIH/NINDS \$725,608
Mentored Patient-Oriented Research Career Development Award -K23
Role: Co-Investigator

FUNDING – ACTIVE (CONTINUED)

RO3 HS13412-01 (Patrick Murray, PI) 10/1/02-9/30/03 5%
Agency for Healthcare Research \$65,997
Outcomes of the Nursing Home Prospective Payment System
Role: Statistician

Major goal of this project is to describe, detail, and evaluate the changes in provision of rehabilitation services to newly admitted nursing home patients following the implementation of the Nursing Home (NH) Prospective Payment System (PPS).

FUNDING – PENDING

PA-01-124 (Julia Rose, PI) 4/1/03-3/30/08 10%
NIH-AHRQ \$450,612
Aging and Supportive Care in Advanced Cancer
Role: Co-Investigator

PA-02-072 (Joseph Sudano, PI) 7/01/03-6/30/06 10%
NIH/OBSSR \$614,468
Subjective/Objective Health Measures by Race/Ethnicity
Role: Co-Investigator

Major goal of this project is to examine the correspondence between 3 subjective measures and a performance based index of physical functioning "gold standard" among several diverse racial/ethnic groups. It will be the first study to use this methodology in evaluating middle age English and Spanish speaking Hispanics. Adding to the knowledge of health status measurement of our fastest growing ethnic population.

To Be Resubmitted Mar 1, 2003 (Mary Anthony, PI) 9/1/03-10/31/06 5%
NIH \$311,379
Nursing System Strategies to Improve Outcomes & Turnover
Role: Co-Investigator

FUNDING PROPOSALS/COLLABORATIONS/CONSULTATIONS – IN PREPARATION

Thomas Love (PI) – working with Randy Cebul and Irene Katzan “Stroke, Item Response Theory and Computerized Adaptive Testing” – R01 proposal in preparation for 6/03 submission.
Ash Sehgal (PI) on proposal related to studying nutritional factors in the Chronic Renal Insufficient Cohort Study (to be submitted to NIH February 1, 2003).
Aleece Caron (PI) at the VA on several proposals related to diabetes, education and quality control. Some funding has been approved, but my role on that project is as a consultant. (new proposal to be submitted May 1, 2003).
Ali Ahmed (PI) at the University of Alabama, Birmingham on several proposals related to the use of propensity scores in studying the effects of ACE inhibitors and beta-blockers on HF/LVSD patients. (each grant is still pending – my role is as a resource for Ali – if the projects are funded, I will donate 2-3% of my time.)
Siran Koroukian (PI) on an American Cancer Society proposal – some details pending.

RESEARCH INTERESTS – PAPERS IN PREPARATION – WORK IN PROGRESS

Biostatistics and Health Services Research

Litaker, D & **Love, Thomas E.** “Health System Resources and the Potential for Health Care Access,” Manuscript in preparation.

Several ongoing smaller collaborations and consultations with researchers affiliated with the Center for Health Care Research & Policy and with the Department of Epidemiology and Biostatistics, CWRU.

Observational Studies

Love, Thomas E. “Explaining Post-Propensity Score Covariate Balance” Abstract to be presented at the 2003 International Biometric Society Meeting of the Eastern North Atlantic Region (ENAR).

Love, Thomas E., Cebul, Randall D., and Thomas, Charles L. “An Empirical Investigation of the Impact of Propensity Score Matching on Hidden Bias.” Abstract in preparation.

Love, Thomas E. and Cebul, Randall D. “Propensity Scores: A State of the Art Review.” Manuscript in preparation.

Love, Thomas E. “Displaying Covariate Balance After Adjustment for Selection Bias.” Manuscript in preparation. Abstract presented at the 2002 Joint Statistical Meetings.

Love, Thomas E. “An Annotated Bibliography: Dealing with Selection Bias.”

Cebul, Randall D., **Love, Thomas E.**, and Dawson, Neal V. “Principles of Adjustment”

Control Charts and Quality

Love, Thomas E. “Quality and Propensity Models.” A presentation on this topic was given at INFORMS-Miami, November, 2001.

Linderman, Kevin and **Love, Thomas E.** “Economic and Economic-Statistical Designs for Time-Varying and for Dynamic Control Charts.” A presentation on this topic was given at INFORMS-Philadelphia, November, 1999.

Love, Thomas E. and Linderman, Kevin “Interpreting MEWMA Control Chart Signals.”

Linderman, Kevin and **Love, Thomas E.** “Sensitivity of the MEWMA Control Chart.”

Love, Thomas E. and Linderman, Kevin “Using Regression to Search For Economic and Economic-Statistical Designs.”

Statistical Pedagogy and Education

Love, Thomas E. “Assessment of Statistical Case Work.”

Love, Thomas E. “Executive Summaries to Encourage Climbing of Bloom’s Taxonomy.”

Love, Thomas E. “Survey Data and Statistical Ethics.”

RESEARCH INTERESTS – PAPERS IN PREPARATION – WORK IN PROGRESS (CONTINUED)

Categorical Data and Psychometrics

Wolf, Abraham W., **Love, Thomas E.** and Lozoff, Betsy “Item Response Theory and the Cross-Cultural Assessment of Depression,” Abstract submitted to the 2003 APA Annual Convention.

Love, Thomas E. “Prediction Analysis of Classification: Application to Honor Selection.”

Love, Thomas E. “Comparison of Classification Algorithms through Prediction Analysis.”

Love, Thomas E. “Prediction Analysis of Classification in Logistic Regression with Application to SAT-I Verbal and DIF.”

Love, Thomas E. “Classification in Logistic Regression for Questionnaire/Survey Data.”

Love, Thomas E. “Model Selection and Cross-Validation for Logistic Regression.”

Love, Thomas E. “Simulation Envelopes for Leave-*k*-out Logistic Regression Diagnostics.”

ADMINISTRATIVE RESPONSIBILITIES / COMMITTEES

Director, Biostatistics and Evaluation Unit, Center for Health Care Research & Policy, CWRU/MetroHealth Medical Center, 2001-.

Member, Center for Health Care Research & Policy Web Design Group, 2001-.

Designer, Coordinator and Lead Instructor, Weatherhead School of Management MBA Math Camp, 1997-2001.

Chair, Weatherhead School of Management Task Force on “The Classroom Experience”, 1999.

Member, Weatherhead School of Management Faculty Council, 1998-99.

Member, Weatherhead School of Management MBA Core Committee, 1994-2001.

Member, Weatherhead School of Management Information Systems Services Committee, 1999-2000.

Member, Weatherhead School of Management Research Committee, 1997-2000.

Member, Various Committees at Department of Operations, including Admissions and Financial Aid, Seminar & Waiver, 1994-2001.

JOURNAL AND COURSE MATERIALS REVIEW

Referee/Reviewer for *Journal of Statistics Education, Medical Care, Medical Decision Making, Operations Research, Psychometrika.*

Reviewed approximately 20 textbooks for ITP/Duxbury Press, Prentice-Hall and Wiley.

Reviewer for the ActivStats for Business Project, Addison-Wesley.

UNIVERSITY SEMINARS/DISCUSSIONS

Seminar on “Presenting and Presenting Yourself”, October 2002, University 400 (CWRU Teaching Assistant Training Program).

Discussion of “The Value of Teaching”, August 2001 and 2002, University 400.

Seminars on “Ethics and Teaching”, February and September 2001, University 400.

Guest Lecturer, CWRU School of Engineering, Engineering Processes Capstone Course on “Statistics, Quality and Experimental Design”, 1997-2002.

SELECTED OUTSIDE CONSULTING

RM Consulting International, Chicago, IL, 2002. Short Course on Propensity Methods.
Cleveland Zoological Society, Cleveland, OH, 1998-2001. Various IT and survey-related projects.

Invacare Corp., Elyria, OH, 1997. Development of prediction models.

LTV Steel Company, Cleveland, OH, 1996-97. Validation of outside consultant's survey work.

Alumni Association, Weatherhead School of Management, 1996-97. Experimental/survey design.

Capital American Life Insurance Company, Cleveland, OH, 1995-96. Prediction algorithms.

PROFESSIONAL SOCIETY MEMBERSHIPS / ACTIVITIES

Making Statistics More Effective in Schools and Business, 1994-.

Elected July, 2001 to Leadership Group (term from 2001-2003) as Web Editor.

Member, Charter Draft Committee, 2001.

Member, Planning Committee, 1994-.

Editor of WWW Repository, 1994-.

Chair / Moderator, "Plenary Session in Memory of David Hildebrand," 2000.

Chair, Session on "Teaching Statistics in an Integrated Program," 1999.

Member, American Statistical Association, 1993-.

Member, Academy for Health Services Research and Health Policy, 2001-.

Member, Society for Medical Decision Making, 2001-.

Member, Institute for Mathematical Statistics, 1995-.

Member, American Society for Quality, 1998-.

Member, The Psychometric Society, 1998-.