

CURRICULUM VITA

Mary S. Fowler

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EDUCATION

Ph. D. Statistics, Carnegie Mellon University, Pittsburgh, PA, 1989
Bell Communications Research Graduate Fellow, Ph.D. Advisor: Stephen Fienberg
A Generalization of the Rasch Model for Items with a Cross-Classified Structure

M.S. Statistics, Carnegie Mellon University, Pittsburgh, PA, 1986
Bell Communications Research Graduate Fellow

B.A. Mathematics and Economics, Minor, Physics New York University, New York, NY, 1983

RYT-200 HR Yoga Alliance, Central Mass Yoga Institute, 2010

RYT-500 HR Yoga Alliance, Central Mass Yoga Institute, 2012

POSITIONS HELD

Professor

Mathematics, Worcester State University, 2014 – Present

Department Head

Mathematics, Worcester State University, 7/2012 – 1/2015

Associate Professor

Mathematics, Worcester State University, 2009 – 2014

Excellence in Teaching Award, 2010

Visiting Professor

Computer Science, Worcester Polytechnic Institute, Fall 2012

Yoga Instructor, Yoga Teacher Trainer and Yoga Warriors Teacher Trainer

Central Mass Yoga Instructor, 2010 – Present

Lead, Statistical Analysis Research Team

Yoga Warriors Program, Central Mass Yoga Institute, 2009 – 2012

Kaplan University

Math Online Instructor, Completed 60 hour professional development training course in online teaching
2009 - 2010

Assistant Professor

Mathematics, Worcester State College, 2004 – 2009

Data Analyst

Preventative and Behavioral Medicine, University of Massachusetts Medical School, Summer 2005,
May – October 2006

Adjunct Professor

Mathematics, Fitchburg State College, Fall 2003 – Spring 2004

High School/Middle School Teacher

South Merrimack Christian Academy, South Merrimack, NH, Fall 2003 – Spring 2004

Member of Technical Staff

Risk Analysis, Traffic Engineering, Market Research and Analysis, Bell Communications Research,
Livingston and Red Bank, NJ, 1988 - 1995

Teaching Assistant

Statistics, Carnegie Mellon University, Pittsburgh, PA, 1986 – 1987

Research Assistant

Applied Research, Bell Laboratories, Murray Hill, NJ Summers 1982 – 1984

COURSES DEVELOPED AND/OR TAUGHT

▪ **University**

Probability and Statistics

Statistics (Algebra Based): Designed and taught (2 sections per semester). Supervised and led assessment
for about 10 sections per semester, 2004 – present

Probability and Statistics: Designed and taught each fall, 2004 – present

Mathematical Probability: Designed and taught to small groups of students as an independent study.

Course is being taught by a colleague as a regular course offering for the first time Fall 2012. I am
teaching the course in Fall 2014 semester.

Mathematical Probability for Actuarial Studies: Designed and taught to small groups of students as an
independent study. I offered the course as a regular course offering for the first time Spring 2013.

Data Analysis: Designed course after supervising many students with internship opportunities as they
assisted with my statistical studies. I offered the course as a regular course offering for the first time
Spring 2013.

Understanding K-8 Math: Probability and Statistics: This is a Math for Teachers graduate course

Geometry, Measurement, Probability and Statistics for Teachers: This is an course for Elementary Education majors

Special Topics for Secondary Education: Probability and Statistics: This is a Math for Teachers graduate course for Primarily for High School Teachers

Mathematics:

Real Analysis

Discrete Mathematics I

Business Calculus

College Algebra

Survey of Math

Understanding K-8 Mathematics: Geometry and Measure

Numbers and Operations for Teachers

Remedial Math:

Developmental Math, Arithmetic

Developmental Math, Elementary Algebra

▪ **Middle School and High School:**

Geometry

Remedial Arithmetic

SELECTED GRANTS AND CONTRACTS

Improving Teacher Quality State Grant to the Commonwealth of Massachusetts

Improving Teacher Quality in Mathematics and English in New Bedford and Southbridge, Math Program Instructor, 2010 – present

GEAR-UP, Gaining Early Awareness and Readiness for Undergraduate Programs, State Grant to the Commonwealth of Massachusetts, goal of Gear Up – to increase college opportunities to low income high school students

- Quantitative Evaluator for \$35 million federal grant: 2011 - present
- Math Plus: Developed program, provide professional development and quantitative evaluation, 2010 – 2011

US Army

The Effect of Yoga on Symptoms of Combat Stress in Active-Duty Military Personnel, 2009 - 2010

Massachusetts Department of Education

Correlation study of MCAS scores and Accuplacer scores, 2006

Noyce Foundation

College math success study, 2006

STEM Massachusetts Board of Higher Education, Pipeline Fund Grant,
Advisor and Teacher on, Professional Development for Middle School Teachers, “Statistics Day” – 2004

HONORS

Excellence in Teaching Award, Worcester State College, 2010
Bell Communications Research Graduate Fellow, 1983 – 1989

PUBLICATIONS AND TECHNICAL REPORTS

Analysis of Incident Reports to Determine Evidence of Selective Prosecution of Prostitution in Worcester County, Mary Fowler, Report to Massachusetts Committee for Public Counsel Services, July 2014

Following GEAR UP Students to College: The Massachusetts Data Utilization Project, Robert Dais, Charles Dervarics and Mary Fowler, Report to US Department of Education, 2013

Successful Developmental Math: “Review-Pretest-Retest” Model Helps Students Move Forward, Richard Bisk, Mary Fowler and Eileen B. Perez, *The New England Journal of Higher Education*, April 2013

Does Making Sure Students Master Their Prerequisites Cause More Efficiency in Learning New Topics: A Controlled Trial with Random Assignment at the Student Level, Heffernan, N., Heffernan, C., Dietz, K., Soffer, D., Fowler, M., Pellegrino, & J. W., Goldman. (in preparation)

The Effect of Sensory Enhanced Yoga on Symptoms of Combat Stress in Deployed Military Personnel, Lynn Stoller, Major Jon Greuel, Lucy Cimini, Mary Fowler, and Jane Koomar, *American Journal of Occupational Therapy*, January 2012

Helping High School Seniors Become College Ready An Evaluation of the GEAR UP Massachusetts ‘Math Plus’ Initiative, Charles Dervarics and Mary Fowler, Report to US Department of Education, 2011

An Analysis of Online Math Courses at Worcester State College with Respect to Final Grades and Withdrawal Rates Mary S. Fowler, July 2007 (unpublished)

Oil and Gas on Indian Reservations: Statistical Methods Help Establish Value for Royalty Purposes Mary S. Fowler and Joseph B. Kadane, *Journal for Statistics Education*, 2006, Vol. 14, Number 3

Math Success Study, Mary S. Fowler and Richard Bisk, Report to Noyce Foundation, August 2006

Analysis of MCAS and Accuplacer Scores, A Correlation Study, Richard Bisk and Mary Fowler, Report to Massachusetts Department of Education, April 2006.

Major Portion Analysis, Mary S. Fowler and Joseph B. Kadane, 2004 Proceedings of the American Statistical Association, Section on Statistical Education[CDROM], Alexandria, VA: American Statistical Association, 2004

The Economics of Good Measurements, Models and Methods, Ashok Erramilli, Mary S. Fowler and Charles D. Pack, Proc. Of the Regional International Teletraffic Seminar, Pretoria, South Africa, September 1995

Accurate Force and Answer Consistency Algorithms for Operator Services, J. J. Gordon and Mary S. Fowler, Proceedings of the 14th International Teletraffic Congress, Antibes, France, June 1994

A Fulltext Market Intelligence Database, Rick V. Martija and Mary S. Fowler, Proceedings of the Bellcore/BCC Conference on Electronic Document Delivery, Livingston, NJ, March 1991

A Generalization of the Rasch Model for Items with a Cross-Classified Structure, Mary Dolores Santi, A Dissertation for the degree of Doctor of Philosophy, Carnegie Mellon University, Pittsburgh, PA, November 1988

SELECTED PRESENTATIONS AND PANEL DISCUSSIONS

“Linking High School GEAR UP to College Success: What the Data Show” (with Robert Dais and Charles Dervarics) National Council for Community and Education Partnerships, Washington, DC, July 2014.

“A New Vision for Professional Development: The GEAR UP Massachusetts/ College Board Accuplacer Certification Program” (with Robert Dais, Charles Dervarics and Keith Henry) National Council for Community and Education Partnerships, San Francisco CA, July 2013.

“Yoga Warriors and the Mind-Body Connection - PTSD” (joint work with J. Greuel Major, USAF, MHR, RYT, presented by J. Greuel) Military Healthcare Conference – TBI and Mental/Emotional Health Workshop, May 2012.

“Reducing Remediation Through Collaboration” (with Robert Dais and Eileen Perez) New England Educational Opportunity Association (NEOA) conference – Reframing the Value of Education: a NEOA Perspective, Stow VT, April 2012.

“Basic Neurophysiology of PTSD and the Implications for Yoga Warriors” Yoga Warrior Teacher Training Workshop, Central Mass Yoga Center, West Boylston, MA, January 2012.

“Yoga Warriors Program: The Effect of Sensory Enhanced Hatha Yoga on Symptoms of Combat Stress in Deployed Military Personnel, Implications for Combat Stress Management”, (with J. Greuel Major, USAF, MHR, RYT) Zarrow Mental Health Symposium, Tulsa OK, September 2011.

“The Effect of Sensory Enhanced Hatha Yoga on Symptoms of Combat Stress in Deployed Military Personnel.” Yoga Warrior Teacher Training Workshop, Central Mass Yoga Center, April 2011.

“Do You Know What They Know, Does It Matter / Ongoing Formal and Informal Assessment”, Alden Excellence in Teaching Award Lecture, Worcester State University, February 2011.

“Math Across the Curriculum: Course Design, Rubric and Student Learning Outcomes Workshop” (with S. Schmoyer), Worcester State College, May 2009

“Math Preparation and Achievement and the College Experience” (with R. Bisk), Poster Session at Celebration of Scholarship and Creativity, Worcester State College, April 2009

“What’s Fun about Math, Not More Homework!!” Presentation at the Kids 2 College Program, Worcester State College, April 2009.

“Readiness for Massachusetts State College Math Courses” (With R. Bisk) ,Presentation at a meeting of Worcester Public School Teachers, March 2009.

“*Factors Impacting Readiness for College Mathematics*,”(With R. Bisk) Presentation at The New England Regional College Board Forum, February 2009.

“*Math Across the Curriculum: Course Design, Rubric and Student Learning Outcomes*” , Worcester State College, November 2008

“*College Math, Are Students Ready?*” (With R. Bisk and A. Samar) Presentation at Worcester State College, September 2008.

“*Factors Impacting Readiness for College Mathematics*,” (With R. Bisk) Presentation at The Regional Academic Symposium on Advancing College Readiness, April 2008.

“*Panel Discussion: Colleges of the Worcester Consortium Certificate Program in Teaching*,” This panel discussion provides students enrolled in the Colleges of the Worcester Consortium Certificate Program in Teaching the opportunity to speak with faculty members from a range of institutions on issues of pedagogy and academic life. August 2007.

“*Singapore Math – Professional Development and Classroom Implementation*,” (with R. Bisk), Poster Session at Meeting the Mark: The Mathematical Preparation of Middle School Mathematics Teachers, Sept 2004.

“*Major Portion Analysis*,” (with J. Kadane), presentation at ASA/IMS Joint Statistical Meetings, Toronto, August 2004.

ELEMENTARY, MIDDLE, HIGH SCHOOL SUPPORT / PROFESSIONAL DEVELOPMENT

Improving Teacher Quality State Grant to the Commonwealth of Massachusetts

Improving Teacher Quality in Mathematics and English in New Bedford and Southbridge, Math Program Instructor, 2010 – present

GEAR-UP, Gaining Early Awareness and Readiness for Undergraduate Programs, State Grant to the Commonwealth of Massachusetts, goal of Gear Up – to increase college opportunities to low income high school students

- Quantitative Evaluator for \$35 million federal grant: 2011 - present
- Math Plus: Developed program, provide professional development and quantitative evaluation, 2010 – 2011

North High School, Professional Development, “College Readiness and the Accuplacer”, with Eileen Perez, March 2010

Sonia Kovalevsky Day for High School Girls, “Women, Mathematics and Careers in Industry,” May 2009

Spring Street Elementary School, Math Olympiad Coach and Program Developer, Fourth Grade, Feb 2010 – Present

Kids to College Program, Worcester State College, Sixth Grade, April 2009

Oak Middle School, Science Olympiad Coach for Compute This Event, Eighth Grade, September – March 2009

Worcester Vocational Tech, Presentation “Readiness for Massachusetts State College Math Courses” with Richard Bisk and Eileen Perez, March 2009

Spring Street School, “The Demographics of Plymouth Plantation, Reading Graphs in Preparation for a Field Study”, Third Grade, October 2009

First Assembly Christian Academy, Worcester, “Kindergarten Money Counting Games”, Kindergarten, Spring 2006

Massachusetts Board of Higher Education, Pipeline Fund Grant, Advisor and Teacher on Science, Technology, Engineering, and Mathematics Project, Professional Development for Middle School Teachers, “Statistics Day” – 2004

SELECTED STATISTICAL CONSULTANCIES

▪ **Law**

Expert witness on a Selective Prosecution Motion for Attorney Nathan Wong, Massachusetts Committee for Public Counsel Services, 2014

▪ **Mathematics Education**

The effect of increased homework on a regular paced seventh grade math class. With Jarod Ashton, 2009
Math Education K-12: Singapore Mathematics, The effect of professional development in the Singapore Math curriculum for K-12 teachers, With Richard Bisk, 2004

▪ **Occupational Therapy**

Tactile preference for pressure and stereognosis in children with cerebral palsy and in typical children. With Laraine Margret Hamilton MS, OTR, 1993

▪ **Women’s Health (with the University of Massachusetts Behavioral and Preventive Medicine Group)**

Menopausal symptoms following cessation of use of hormone replacement therapy (HRT). S. Crawford, J. Kelsey, M. Fowler, E. Gold, G. Greendale, C. Johannes, B. Sternfeld, E. Waetjan. 2005 - 2006
The association of heart rate and blood pressure with frequency of vasomotor symptoms: data from the Study of Women's Health Across the Nation (SWAN). E. Jackson, C. Chae, S. Crawford, M. Fowler, J. Kelsey. 2005 – 2006

▪ **Other Technical Consulting**

Metro Ethernet Forum, Performance Metrics Sampling Algorithms, Turin Networks, Acton MA 2008
Applied Queuing Analysis, Grace Baptist Church, Hudson, MA, 2004
Quantitative Market Analysis, RadTech, St. Louis, MO, 2003