

ERIC W. KUENNEN

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Education:

Ph. D., Mathematics, Michigan State University, 2001
B. Math., University of Minnesota, High Honors, 1994
B. A., German, University of Minnesota, *Summa Cum Laude*, 1994

Fields of Interest & Current Research:

Mathematics Education – Mathematical Behavior and Thinking in Pre-service Elementary and Middle School Mathematics Teachers, Statistical Analysis of Pedagogical Practices, Cross-Disciplinary Studies

Mathematics – Applied Dynamical Systems, Statistical Physics, Models and Fractal Scaling Properties of Rough Surface Growth

Professional Positions:

Associate Professor of Mathematics, University of Wisconsin-Oshkosh, Fall 2010 – present
Assistant Professor of Mathematics, University of Wisconsin-Oshkosh, Fall 2005 – Spring 2010
Courses taught: Number Systems, Geometry and Measurement, Data Exploration and Analysis, Abstract Mathematics, Modern Algebra, Modern Geometry, Probability and Statistics, Infinite Processes, Senior Seminar for Elementary and Middle School Programs, International Comparative Mathematics Education Seminar, Stochastic Modeling, Calculus III

Assistant Professor of Mathematics, University of Wisconsin-Stout, Fall 2002 – Spring 2005
Courses taught: Concepts of Mathematics, Complex Variables, Differential Equations with Linear Algebra, Calculus with Analytic Geometry I and II, Calculus I, Finite Mathematics with Applications, Elementary Statistics.

Visiting Scholar, University of Tartu, Tartu, Estonia, Spring 2005.
Course taught: Chaotic Dynamical Systems and Fractals

Assistant Professor of Mathematics, Ripon College, Fall 2001– Spring 2002.
Courses taught: Complex Analysis, Multivariable Calculus, Calculus I, Elementary Statistics, Introduction to Mathematical Thinking and Writing.

Full-time Faculty Instructor, Simmons College, Fall 2000 – Spring 2001.
Courses taught: Introduction to Statistics, Introductory Algebra.

Graduate Assistant Instructor, Michigan State University, Fall 1995 – Spring 1999.

Courses taught: Differential Equations, Multivariable Calculus, Emerging Scholars Program (Calculus and Pre-calculus), Survey of Calculus with Applications I, Math Enrichment Program (Intermediate Algebra), Calculus I, Mathematical Investigations I and II, College Algebra, Intermediate Algebra. Peer Teaching Evaluator (1997-1999). Math Learning Center Supervisor (1998-1999).

Refereed Publications:

Szydlak, J. E., C.E. Seaman, and E. Kuennen (2011). *Big Ideas in Mathematics for Future Middle Grade Teachers and Elementary Math Specialists: Big Ideas in Infinite Processes*. Boston: McGraw-Hill Companies.

Szydlak, J. E., Kuennen, E., & Seaman C. E. (2009). Development of an Instrument to Measure Mathematical Sophistication. *Proceedings for the Twelfth Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Conference on Research in Undergraduate Mathematics Education*.
http://www.rume.org/crume2009/Szydlak_LONG.pdf

Kuennen, E. W. & Wang, C. Y. (2008). Off-lattice radial Eden cluster growth in two and three dimensions. *Journal of Statistical Mechanics*, P05014.

Kuennen, E. W. & Howell, J. (2008). Coins, Squares, and Algebraic Structure. *Wisconsin Teacher of Mathematics*, 58(2), 31-32.

Haley, M. R., Johnson, M. F. & Kuennen, E. W. (2007). Student and Professor Gender Effects in Introductory Business Statistics, *Journal of Statistics Education* 15(3).

Johnson, M. F. & Kuennen, E. W. (2006). Basic Math Skills and Student Performance in an Introductory Statistics Course. *Journal of Statistics Education*, 14(2).

Johnson, M. F. & Kuennen, E. W. (2005). On-Line Math Reviews and Performance in Microeconomics. *Journal of Economics and Economic Education Research* 6(3), 1-21.

Johnson, M. F. & Kuennen, E. W. (2004). Delaying Developmental Mathematics: The Characteristics and Costs. *Journal of Developmental Education* 28(2), 24-29.

Papers Under Review:

“Big Ideas in Mathematics for Future Middle Grade Teachers and Elementary Math Specialists: Big Ideas in Euclidean and Non-Euclidian Geometries”, with J. Szydlak & C. Seaman. Submitted for publication by McGraw-Hill Companies, Summer 2011.

“Conceptualizing and Measuring Mathematical Sophistication”, with J. Szydlak, C. Seaman, A. Parrott and J. Belnap, submitted to *Journal for Mathematics Teacher Education*, May 2011.

“MAA Notes on Programs: The Middle School Program at the University of Wisconsin Oshkosh”, with J. Szydlak, J. Beam and C. Seaman, submitted to the MAA, January 2011.

“Probability and Statistics for Prospective Middle Grades Teachers”, with J. Szydlak, J. Beam and C. Seaman, submitted to the MAA, January 2011.

Grants Awarded:

“Making Mathematical Connections: Mathematics Knowledge for Teaching in Grades 4-8”, ESEA Title II part B: Mathematics and Science Partnership, U.S. Department of Education (\$446,419), 2009-2012.

“Math Education in China” Faculty Development Teaching Project, University of Wisconsin Oshkosh, 2010.

“Measuring Mathematical Sophistication”, Faculty Development Grant, University of Wisconsin Oshkosh, (7.5% CAS), 2007

“Energizing UWS SoTL Activities in Mathematics”, University of Wisconsin System, (\$1000) 2006-2007

“Off-Lattice 3D Eden Model”, Faculty Development Research Grant, University of Wisconsin Oshkosh, (7.5% CAS), 2006.

“Remedial Math Placement”, Faculty Development Research Grant, University of Wisconsin Oshkosh, (7.5% CAS) 2006.

"Math Exercises for Principles of Microeconomics: Closing the Gap" Undergraduate Teaching and Learning Grant, University of Wisconsin System, with M. Johnson, (\$15,700) 2002-2003.

Awards of Recognition:

Global Education Award, UW Oshkosh College of Letters and Science, 2011.

Presentations Given:

“Measuring Mathematical Sophistication”, Joint Mathematics Meetings, Washington DC, January 6, 2009.

“A Markov Chain Model for Baseball”, Joint Mathematics Meetings, Washington DC, January 6, 2009.

“UW Oshkosh Pre-service Courses,” Wisconsin Mathematics Council 40th Annual Green Lake Conference, May 2, 2008.

“Algebraic Thinking and Structures for Teachers,” Mathematical Preparation for Middle School Teachers of Mathematics: A Wisconsin Concern. Wisconsin Dells, WI, Oct. 6, 2007.

“Enhancing Discourse through Questioning”, Poster Presentation at Wisconsin MAA Meeting, April 2007.

“Remedial Math Placement: Correctly Identifying Students Needing Mathematics Remediation, part II”, presented at Wisconsin MAA Meeting, April 2007.

“Off-Lattice 3D Eden Cluster Growth Model”, presented at American Physical Society Annual Meeting, Denver, March 2007.

“Remedial Math Placement: Correctly Identifying Students Needing Mathematics Remediation, part I”, presented at Wisconsin MAA Meeting, April 2006.

- " $1+2=0$, Deterministic Chaos, and other Mathematical Curiosities", presented at the Dorpater Dozentenabend, Tartu University, Tartu, Estonia, March 2005.
- "Basic Math Skills and Student Performance in Introductory Statistics" with M. Johnson, presented at the Southern Economics Association Meetings, New Orleans, 2004.
- "On-line Supplemental Math Assignments: Who Benefits and By How Much?", presented at the Midwest Economics Assoc. Meetings, Chicago, 2004.
- "A Radial Continuum Equation for Three-dimensional Rough Surface Growth". Presented at the SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2003.
- "Does Remedial Math Matter? Evidence of the Cross-Disciplinary Effects of Requiring Remedial Math", Wisconsin Mathematics Assoc. of America regional conference, UW Marathon County, April 2003.
- "Three-dimensional Rough Surface Growth: A Radial Continuum Equation and a Discrete Off-lattice Eden Cluster Growth Model," SIAM First Life Sciences Conference, March 8-9, 2002 in Boston, MA
- "Designing Math Exercises for Introduction to Microeconomics", Midwest Economics Association Meetings, Chicago, March 2002.
- "Continuum Models for the Propagation of Rough Surfaces," Applied Mathematics Seminar, Michigan State University, Nov. 9, 2001
- "Growing Fractals: Cluster Growth, Self-Affine Scaling, and the Propagation of Rough Surfaces," Applied Mathematics Seminar, Michigan State University, Nov. 2, 2001.
- "Growing Fractals: A 3D Continuum Equation for Rough Surface Propagation," Department of Mathematics and Computer Science Colloquium, Sept. 13, 2001 at Ripon College, WI.
- "Fractal Scaling Properties of Cluster Growth Models," MAA Northeastern Section Meeting, Nov. 17, 2000 in Providence, RI.

Selected University and Professional Service:

Mathematics Education Study Abroad Program, Faculty Leader: 2007, 2009, 2011
 UW Oshkosh Assessment Committee: 2007-2009
 UW Oshkosh Faculty Development Program reviewer: 2006-present.
 Consultant for Wisconsin Innovation Service Center: 2005 and 2006
 Referee for the *Journal of Physics*: 2002 and 2003
 Contributing Scholar, Aplia Publishing (www.aplia.com), San Carlos, CA: Summer 2002

Current Professional Memberships:

Mathematical Association of America
 National Council of Teachers of Mathematics