

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 – Mathematics Teacher Preparation, Mathematical Behavior and Thinking in Pre-service Mathematics Teachers, Statistical Analysis of Pedagogical Practices, Cross-Disciplinary Studies

Professional Positions:

Full Professor of Mathematics, University of Wisconsin Oshkosh, Fall 2016 – present

Associate Professor of Mathematics, University of Wisconsin Oshkosh, Fall 2010 –Spring 2016

Assistant Professor of Mathematics, University of Wisconsin Oshkosh, Fall 2005 – Spring 2010

Courses taught at University of Wisconsin Oshkosh:

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 (as Study Abroad in Peru and China), Stochastic Modeling, Calculus III, History and Philosophy of Mathematics, College Algebra

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:

McGee, M. K., and E. W. Kuennen (2014). Variance Distributions from Round Robin Series of Zero-Sum Competitions. *International Journal of Statistics and Economics* Volume 15, Issue Number: 3, pp. 1-17.

Szydlik J., J. Beam, E. Kuennen, and C. Seaman. (2013) “The Middle School Program at the University of Wisconsin Oshkosh”, in *Resources for Preparing Middle School Mathematics Teachers* (MAA Notes #80), Beaver C. et al, eds. The Mathematical Association of America, Washington DC.

Szydlik J., J. Beam, E. Kuennen, and C. Seaman. (2013) “Probability and Statistics for Prospective Middle Grades Teachers”, in *Resources for Preparing Middle School Mathematics Teachers* (MAA Notes #80), Beaver C. et al, eds. The Mathematical Association of America, Washington DC.

Szydlik, C. Seaman, E. Kuennen (2012) “Big Ideas in Mathematics for Future Middle Grade Teachers and Elementary Math Specialists: Big Ideas in Euclidean and Non-Euclidian Geometries”, Boston: McGraw-Hill Companies.

Szydlik, 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.

Szydlik, 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/Szydlik_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.

Unpublished and Submitted Papers:

- “Building and Measuring Mathematical Sophistication in Pre-service Teachers”, with T. Bauer, submitted to *Didactics of Mathematics in Higher Education as a Scientific Discipline* (KHDM Conference Proceedings), Hannover, Germany, 2015.
- “Measuring the Impact of University Education in Pre-service Secondary Teachers’ Mathematics Knowledge”, with T. Bauer. Submitted to *Journal für Mathematik-Didaktik*, 2015.
- “Conceptualizing and Measuring Mathematical Sophistication”, with J. Szydlik, J. Belnap, and A. Parrott. Submitted to *Mathematics Teacher Education*, 2013.

Grants Awarded:

- “Making Mathematical Connections: Mathematics Knowledge for Teaching the Common Core” ESEA Title II part B: Mathematics and Science Partnership, U.S. Department of Education (\$458,902), Principal Investigator and Project Director 2014-2017.
- “Oshkosh Math Circle”, National Association of Math Circles grant, Mathematical Sciences Research Institute (\$2000), 2014-15.
- “Comparing Mathematics Teacher Education: Pre-service Teachers’ Opportunities for Learning, Mathematical Knowledge for Teaching, and Mathematical Sophistication in the US, Germany and China”, One Year Sabbatical, UW Oshkosh Faculty Development Program, 2012-13.
- “Mathematics Teacher Preparation in US and Germany”, Research Visit Grant, German Academic Exchange Service (DAAD), Fall 2012.
- “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), Project Director and Principal Investigator, 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.

Study Abroad Programs Led:

“Mathematics Education in Peru” UW Oshkosh Faculty-led program, May 2015

“Mathematics Education in China” UW Oshkosh Faculty-led program, May 2013.

“Mathematics Education in China” UW Oshkosh Faculty-led program, May 2011.

“Mathematics Education in Peru” UW Oshkosh Faculty-led program, May 2009.

“Mathematics Education in Peru” UW Oshkosh Faculty-led program, June 2007.

Presentations Given:

“Preservice Secondary Teachers’ Mathematical Knowledge and Beliefs in the US, Germany and China”, presented at 13th International Congress on Mathematical Education, Hamburg, Germany, July 2016.

“A Hat-trick of Hidden Card Tricks”, presented with J. Beam at MAA-Wisconsin section meeting, La Crosse, WI, April 2016.

“Mathematics Education in China”, presentation with J. Szydlak at MAA-Wisconsin section meeting, Ripon College, April 2015.

“Measuring the Impact of University Education on Pre-service Secondary Teachers’ Mathematics Knowledge and Beliefs” Presentation the Central Fall Sectional conference of the American Mathematical Society , Eau Claire, September 2014.

“Secondary Math Teacher Preparation in the US, Germany, and China” Presentation at MAA-Wisconsin Spring Meeting, UW Whitewater, April 4, 2014.

“Optimizing Global Learning as Students Study Abroad”, Provost's Teaching and Learning Summit. Thursday, UW Oshkosh, Oct. 24, 2013.

“Naïve Invented Algorithms”, with J. Beam, MAA MathFest, Madison WI, August 2012.

“Mathematics Education in China”, UW Oshkosh Mathematics Department Colloquium, September 22 2011.

“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.