

Shonda Roelfs Kuiper

Grinnell College, 2042 Science, Grinnell, IA 50112

EDUCATION

Doctor of Philosophy, Statistics August, 1997
Iowa State University

Master of Science, Statistics December, 1994
Iowa State University

Bachelor of Arts, Mathematics August, 1990
Summa cum laude, Wartburg College

TEACHING EXPERIENCE

Associate Professor Grinnell College, 5/2010 – present
Teaching Introductory Statistics, Statistical Methods, Statistical Modeling, Design of Experiments, and a calculus-based Probability and Statistics sequence.

Assistant Professor, Grinnell College, 9/03 – 5/2010
Teaching Introductory Statistics, Statistical Methods, Statistical Modeling, Design of Experiments, and a calculus-based Probability and Statistics sequence.

Assistant Professor, Wartburg College, 9/01 – 9/03
Designed and taught Calculus I, Statistical Methods, and a calculus-based statistics course.

Quality Engineer, Hallmark Cards, 6/97 – 9/01 (promoted to Senior Engineer in 1998)
Provided leadership and overall strategy to ensure all operational divisions consistently deliver cost-effective, high quality products to Hallmark consumers. This includes:

- Developing and implementing an innovative process control system throughout all manufacturing facilities in the United States, Mexico, and Canada
- Revising acceptance sampling procedures for distribution facilities in the United States and Asia. This resulted in an \$80,000 per year savings to Hallmark while maintaining current quality standards.
- Supervising statistical testing procedures for new machinery, materials, and processes
- Quality Systems consulting activities for numerous Hallmark subsidiaries
- Creating a software interface package to predict seasonal Hallmark sales
- Coaching many engineers in statistical techniques, quality systems and data analysis.

While employed as a quality engineer, designed and administered (or co-facilitated) several courses for a wide variety of employees throughout Hallmark Cards. These include:

- Process Control and Continuous Improvement Tools for New Managers
- Certified Quality Engineer training course
- Design of Experiments
- Acceptance Sampling and Hypothesis Testing Procedures
- Seven Management and Planning Tools
- Seven Quality Control Tools

GRANTS, PROPOSALS, CONTRACTS AND AWARDS

The 2012 MERLOT Classics Award in Statistics. This award is given once a year for the best peer reviewed online resources designed to enhance teaching and learning.

Kuiper, S. "Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics." NSF TUES DUE #1043814, May 2011-May 2014.

Kuiper, S., "Misconceptions in Medical Research", Committee for Support of Faculty Scholarship (CSFS), 2010-2011.

Kuiper, S. and Sklar., J. *Practicing Statistics: Guided Investigations for a Second Statistics Course*. Pearson Addison-Wesley book contract, 2008-2012.

Best Contributed Paper in Statistics Education Award "Playing Games with a Purpose." American Statistical Association Joint Statistical Meetings, Washington D.C., August 2009.

Kuiper, S.; Moore, T.; and Collins, L. (2005-2008). "Collaborative Research: Integrating Science and Active Learning into Data-Oriented Post-Calculus Probability and Statistics Courses." NSF CCLI DUE # 0510392, recommended for approval, \$144,950.

PUBLICATIONS (*Undergraduate students)

Textbooks

Kuiper, S. and Sklar., J. *Practicing Statistics: Guided Investigations for a Second Statistics Course*. Pearson Addison-Wesley, 2012

Refereed Publications

Albert, J., Carver, R., Erickson, P., Kuiper, S., Lesser, L., Liao, S., Martin, N., Pearl, D., Posner, M., Wall, A., and Weber, J., (2013) "Using Fun in the Statistics Classroom: An Exploratory Study of College Instructors' Hesitations and Motivations", *Journal of Statistics Education*, Volume 21, Number 1

Cummiskey, K., Kuiper, S., and Sturdivant, R., (2012) "Using classroom data to teach students about data cleaning and testing assumptions", *Frontiers in Quantitative Psychology and Measurement*, 3:354. doi: 10.3389/fpsyg.2012.00354

Kuiper, S., "Incorporating a research experience into an early undergraduate statistics course." International Conference on Teaching Statistics, Proceedings of the International Conference on Teaching Statistics, http://icots.net/8/cd/pdfs/invited/ICOTS8_4G1_KUIPER.pdf, July 2010.

Kuiper, S. and Collins, L. (2009) "Guided Labs That Introduce Statistical Techniques Used in Research From Multiple Disciplines." *The American Statistician*. 63(4):343-347.

Kuiper, S. (2008) "Introduction to Multiple Regression: How Much is Your Car Worth?" *Journal of Statistics Education*. 16(2).
www.amstat.org/publications/jse/v16n3/datasets.kuiper.html.

Levandoski, M.; Robertson, A.; Kuiper, S.; Qian, H.; and Martin, R. (2005). "Single-channel properties of N- and L-subtypes of acetylcholine receptor in *Ascaris suum*." *International Journal for Parasitology* 35:925-934.

McGranahan, D.*; Kuiper, S.; and Brown, J. (2005). "Temporal Patterns in Use of an Iowa Woodlot During the Autumn Bird Migration." *American Midland Naturalist* 153:61-70.

Other Publications

Kuiper, S. (2007). "Interdisciplinary Labs Created for a First or Second Course in Statistics." *2007 Proceedings of the Joint Statistical Meetings*. Alexandria, VA: American Statistical Association.

Palm, Y.*; To, T.*; Kuiper, S.; Moore, T.; and Brody, T. (2005). "Estimating Asthma Prevalence Rates in the United States." *ESRI Health GIS Conference Proceedings*.
<http://gis.esri.com/library/userconf/health05/index.html>

Kuiper, S.; Legler, J.; and Morgan, C. (2005). "Choosing a Career as a Statistician in a Liberal Arts College." *AmStat News*, V339, 22-24.

Workshops

Kuiper S. and Sturdivant R., "Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics" Led an eight hour Mathematical Association of America pre-conference workshop, Joint Math Meetings. San Diego California, January 2013

Kuiper S., Sturdivant R., Holmes-Rowell, G., "Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics" Led an eight hour pre-conference workshop supported by the NSF and the Consortium for the Advancement of Undergraduate Statistics Education, Joint Statistics Meetings. Raleigh-Durham, South Carolina, May 2013

Conference Presentations (Invited/Reviewed/Refereed)

Kuiper S., "Igniting a Passion for Change in Teaching Statistics", Invited Opening Session Presentation, USCOTS, May 2013 (over 400 in attendance)

Phelps A. and Kuiper S., "Nurturing a Passion for Statistics by Finding Stories in Data", 75 minute refereed presentation (30% acceptance rate), USCOTS, May 2013 (50 in attendance)

Carver R., Everson M., Kuiper S., Posner M., "Flipping the Classroom: Changing the Classroom Model to Enhance Student-centered Learning and Optimize Use of Time", 75 minute refereed presentation (30% acceptance rate), USCOTS, May 2013 (65 in attendance)

Albert, J., Carver, R., Erickson, P., Kuiper, S., Lesser, L., Liao, S., Martin, N., Pearl, D.,

Posner, M., Wall, A., and Weber, J., "Using Fun in the Statistics Classroom: An Exploratory Study of Hesitations and Motivations of USCOTS 2011 Attendees", Reviewed Poster Presentation, May 2013

Kuiper S., "Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics" Topic Contributed Presentations, Joint Statistics Meetings. San Diego California, August 2012

Kuiper S., "2012 MERLOT Classics Award Invited Presentation - Stat2Labs", SLOAN Fifth Annual International Symposium on Emerging Technologies for Online Learning, Las Vegas, Nevada, July 2012 This award is given once a year for the best peer reviewed online resources designed to enhance teaching and learning.

Finzer W., Konold K., and Kuiper S., "Online Games for Teaching Statistics from the Data Games and Playing Games with a Purpose Projects", Invited Presentation, Electronic Conference On Teaching Statistics, May 2012, <http://www.causeweb.org/ecots/breakouts/3/>

Ensley, D., Esselstein R., Kuiper S., Henle J., "Beyond Jeopardy! Games for learning mathematics", Invited Panel Discussion for Project NEXT, Boston, Massachusetts, January 2012.

Kuiper S., "Innovations in Teaching Statistics in the New Decade", Topic Contributed Presentation, Joint Math Meetings, Boston, Massachusetts, January 2012.

Kuiper S., "Playing Games with a Purpose, NSF Grants in Education", Invited Presentation, Joint Math Meetings, Boston, Massachusetts, January 2012.

Horton, N., Kuiper, S., Enders, F., Kaplan, D., Ziegler, L., "Teaching Statistics through Regression." Invited Panel Discussion, American Statistical Association Joint Statistical Meetings, Miami Beach Florida., August 2011.

Kuiper, S., Hartlaub, B., Legler, J., Lock, R., Tintle, N., "Beyond the Introductory Course: Strategies for a Second Course in Statistics", Invited Panel Discussion, Joint Statistics Meetings, Vancouver, British Columbia, August 4, 2010

Kuiper, S., "Learning statistics through projects: Incorporating a research experience into an early undergraduate statistics course", Invited Paper Presentation, ICOTS8, Ljubljana, Slovenia. July 2010.

Kuiper, S. "Using Games to Teach Design of Experiments." CAUSEweb Activity Webinar, April 27, 2010. Recorded and available at <http://www.causeweb.org/webinar/activity/2010-04/>

Kuiper, S. "Playing Games with a Purpose." American Statistical Association Joint Statistical Meetings, Washington D.C., August 2009. This presentation was given the Best Contributed Paper Award.

Kuiper, S., Tintle, N., and Andrews, D., "What's Next? Post-Intro Statistics Courses." Poster Presentation, USCOTS, Columbus, Ohio, June 2009.

Kuiper, S., Pearl, D., Lesser, L., Posner, M., "Letting Go of the Idea that Stats Class Can't be Fun and Functional." USCOTS, Columbus, Ohio, June 2009.

Kuiper, S. "Integrating research from multiple disciplines into a second statistics course." Conference Celebrating 75 Years of Statistics at Iowa State, Invited Presentation, Ames, Iowa, May 2009.

Kuiper, S. "Stirring the Pot: Radical Ideas in Statistics Education." American Statistical Association Joint Statistical Meetings Invited Paper Presentation, Denver, Colorado, August, 2008.

Kuiper, S. "Integrating Research Projects in a First Statistics Course." USCOTS: CAUSE Webinar, July, 2008. Recorded and available at <http://www.causeweb.org/webinar/>

Kuiper, S. "Investigative Lab Modules with Interdisciplinary Applications." American Statistical Association Joint Statistical Meetings Invited Paper Presentation, Salt Lake City, Utah, August, 2007.

Kuiper, S. "Bringing Interdisciplinary Research into the Classroom." Poster Presentation, USCOTS, Columbus, Ohio, May 19, 2007.

Kuiper, S. "Teaching Statistics with Interdisciplinary Data Collection Applets." Kansas City Regional Mathematics Technology EXPO, Kansas City, Missouri, September 29, 2006.

Rojas, D.*; Ji, L.*; Kuiper, S.; and Baumler, S. "A Geographical Approach to Analyzing Student Admission Patterns." Association for Institutional Research in the Upper Midwest (AIRUM) Conference, Minneapolis, Minnesota, November, 2005.

Palm, Y.*; To, T.*; Kuiper, S.; Moore, T.; and Brody, T. "Estimating Asthma Prevalence Rates in the United States." ESRI Health Geographic Information Systems Conference, Chicago, Illinois, October, 2005.

Kuiper, S.; Legler, J.; and Morgan, C. "Choosing a Career as a Statistician in a Liberal Arts College." Joint Statistical Meetings Poster Presentation, Minneapolis, Minnesota, August, 2005.

Jordan, J.; Kuiper, S.; Legler, J.; and Holcomb, J. "Innovative Ideas in the Statistics Classroom." Joint Statistical Meetings Contributed Panel Session, Toronto, Canada, August, 2004.

McGranahan, D. and Kuiper, S. "Avian Migration Patterns and the Role of Rosa Multiflora." Poster for the Midwest Ecology and Evolution Conference, University of Notre Dame, March, 2004. Awarded Best Poster.

Kuiper, S. "Using Excel and Web Based Tools to Replace Statistical Software Packages." Kansas City Regional Mathematics Technology EXPO, Kansas City, Missouri, October, 2003.