

CURRICULUM VITAE

Edith Seier

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Degrees

1998	Ph.D. Statistics	University of Wyoming, Laramie
	Dissertation:	A Family of Skewness and Kurtosis measures
1996	MS Statistics	University of Wyoming, Laramie
	Thesis :	Alternative Measures of Skewness and Kurtosis
1980	Licensure	Universidad N.M. de San Marcos, Lima, Peru
1973	MA Mathematics	University of Kansas, Lawrence
	Thesis :	On the Group Decision Problem
1971	BS Statistics	Universidad N.M. de San Marcos, Lima, Peru

Positions

Since 2003	Associate Professor,Mathematics Department, East Tennessee State University
1998-2003	Assistant Professor,Mathematics Department, East Tennessee State University
1994-1998	GTA, Statistics Department, University of Wyoming
1994(Spring)	Part-time instructor, Mathematics Department, Northern Arizona University, Flagstaff
1976-1993	Faculty (tenured) Statistics Department, Universidad N.M. de San Marcos, Lima, Peru
1973-1975	Statistician,National Office of Statistics, Lima, Peru

Current Areas of Special Interest

- Kurtosis and variability
- Data analysis and statistical consulting
- Statistics Education
- Applications to Biology, Medicine and Public Health

Selected Publications

Papers in Journals

1. Kotz, S. and Seier, E. (2008) Kurtosis orderings of the Two-sided power distributions. *Brazilian Journal of Probability and Statistics* Vol 22,1 pp 1-8
2. Kotz, S. and Seier, E. (2007) Kotz, S. and Seier, E. (2008) Analysis of Quantile Kurtosis-Center and Tails. *Statistical Papers* Published on line October 2007, printed version forthcoming.
3. Helfgott, M. and Seier, E. (2007) Some Mathematical and Statistical aspects of Enzyme Kinetics. *Journal of Mathematics and its Applications (JOMA)* October 2007, ID 1611.
4. Kiebzak, G., Faulkner,K.G., Wacker, W, Hamdy,R, Seier, E. and Watts,N.(2007) Effect of Precision Error on T-scores and the Dianostic Classification of Bone Status. *Journal of Clinical Densiometry*. (forthcoming)

5. Kotz, S. and Seier, E. (2007) Kurtosis of the Topp-Leone distributions. *Interstat*. July 2007.
6. Kiezbak, G., Hamdy, R., Seier, E., Watts, N. (2006) The Prevalence of Significant Left-Right Differences in Hip BMD, *Osteoporosis International* 17:1772-1770
7. Haynes, T., Knisley, D., Seier, E. and Zou, Y. (2006) A quantitative analysis of secondary RNA structure using domination based parameters on trees. *Bioinformatics* 7:108
8. Bonett, D.G. and Seier, E. (2006) Confidence Interval for a Coefficient of Dispersion in Non-normal Distributions. *Biometrical Journal* Vol 48 (1) pp 144-148
9. Seier, E. (2004) Kurtosis. *Pesquimat* Vol 6 (2) pp 1-26
10. Bonett, D.G. and Seier, E. (2003) Confidence Intervals for Mean Absolute Deviations. *American Statistician*, Vol 57 (4) pp 233-236
11. Goodrow, B., Seier, E. and Stewart, K. (2003) Social Influences and Adolescent Attitudes on Smoking: Analysis of the 2000 Tennessee Youth Tobacco Survey. *Journal of Adolescent and Family Health*, Vol. 3 (2) pp 89-94
12. Seier, E. and Bonett, D.G., (2003), Two families of Kurtosis Measures *Metrika* 58 1 pp-59-70
13. Bonett, D.G. and Seier, E. , (2003), Statistical Inference for a Ratio of Dispersions Using Paired samples. *The Journal of Educational and Behavioral Statistics*. Spring 2003/ Vol 28 1 pp 21-30
14. Bonett, D.G. and Seier, E., (2002), A test of Kurtosis with High Uniform Power. *Computational Statistics and Data Analysis*, Vol 40 pp 435-445.
15. Seier, E. and Robe, C. , (2002), Ducks and Green - An Introduction to the Ideas of Hypothesis Testing. *Teaching Statistics* Vol 24 Num 3 Pages 82-86
16. Seier, E., (2002) Comparison of Tests of Univariate Normality *Interstat*, January 2002 issue

Papers in Proceedings

- Seier, E. and Hosler, S. (2007) Teaching Intro Stats to Prospective Elementary School Teachers- The Habitat Experience at ETSU. 2007 Proceedings of the American Statistical Association, Statistical Education Section (CD-ROM)
- Seier, E. (2006), "Influence of consulting in the selection of topics when teaching statistics", 2006 Proceedings of the International Conference on Teaching Statistics (refereed), ICOTS 7.
- Seier, E. , Price, R.M. and Knisley, J. (2005), "The Stat-Cave and a Multi-task Approach to Improve the Teaching of Introductory Statistics", 2005 Proceedings of the American Statistical Association, Statistical Education Section.
- Seier, E. , Moore, D. and Joplin, K. (2002), "Exploratory Tools for Comparison of Activity Time Series," 2002 Proceedings of the American Statistical Association, Biometrics Section [CD-ROM], Alexandria, VA: American Statistical Association.

- Seier, E. (1987) About a problem when determining seasonal behavior or cycles with spectral analysis Proceedings of the first seminar on Applied Statistics (IASI). Mar del Plata, Argentina, 1987. (refereed)
- Seier, E. (1985) Some experiences in the spectral analysis of time series. Proceedings of the III Colloquium of the Peruvian Mathematical Society. Lima,Peru

Other publications

- Seier, E. (2007) (on-line) Activity to introduce the ideas of Hypothesis Testing- CAUSEweb developers workshop (invited) <http://sec.carleton.edu/sp/cause/conjecture/examples/18163.html>
- Price, R. and Seier,E. (2005) Minitab 14 Lab Manual [CD-ROM] for Utts and Heckard's Mind on Statistics. Duxbury
- Seier, E. (2005) Learning-R (bilingual on-line introduction to R) <http://www.etsu.edu/math/seier/R.htm>
- Marks,L.J, Nelson, A., Burnham, J.P., Coates,T, Duncan, J. Lowe,E. ,Lowery,A, Seier,E. "The Winding Road to Community Partnerships in Appalachia: A Faculty perspective:" in Pursuing Opportunities trough partnerships: higher education and communities. West Virginia University Press, 2004.
- Seier, E. and Price, R.M. (2003) Minitab 13 Lab Manual [CD-ROM] for Utts and Heckard's Mind on Statistics. Duxbury Press
- Seier,E. (1993) Teaching Statistical Consulting, an experience at Universidad de San Marcos. T.R.-LST - UNMSM Lima,Peru
- Seier,E. (1992) Influence analysis in regression for Peruvian economic data. T.R.-LST-UNMSM Lima,Peru
- Seier,E. (1992) What is Spectral Analysis and how can we apply it? T.R.LST- UNMSM Lima,Peru
- Seier,E. (1987) A short course on Exploratory Data Analysis. Peruvian Mathematical Society, Lima,Peru.
- Seier,E. (1984) Spectral Analysis of Time Series. Peruvian Mathematical Society

Thesis directed at East Tennessee State University

Master Theses

- Glass, Suzanne (2000) "Performance of Bootstrap Confidence Intervals for L-Moments and Ratios of L-Moments."
- Hosler, Susan (2002) "Models and Graphics in the Analysis of Categorical Variables: The Case of the Youth Tobacco Survey."
- Mu, Zhiqiang (2006) "Comparing the Statistical Tests for Homogeneity of Variances."

- Neal, Mary Jo Johnson (2007) "Teaching Probability and Statistics to English Language Learners In Grade Five."
- Peyton, Justin Tyler (2008)"Methods for the Analysis of Developmental Respiration Patterns."

Undergraduate Honors Theses

- Holman, Sarah (2006) "An Analytical Study on the Probability and Statistics Classes at ETSU"
- Ashton, Erin (2005) "Statistical Approach to Multifactorial Microarray Analysis"

Other research related activities

- Served as referee for different statistical journals.
- Statistical consulting and long time collaborations with professionals from other areas engaged in research.

Selected Presentations

Talks

August 2007- Introductory Statistics for prospective elementary school teachers-the Habitat experience at ETSU.Joint Statistical Meetings (ASA) , Salt Lake City.

April 2007- Invited talk at the Statistics Department of the University of Wyoming

2007- Invited talks at Universidad N.M. de San Marcos, Lima, Peru

(January) - Connection between consulting and teaching in Statistics

(August) - Teaching statistics in the context of Biology

July 2006- Influence of consulting on the selection of topics when teaching statistics, presented at the International Conference on Teaching Statistics (ICOTS 7) Salvador, Bahia, Brazil.

August 2005- The STAT-CAVE and a multitask approach to improved the teaching of Introductory Statistics. Joint Statistical Meetings (ASA) , Minneapolis.

<http://www.etsu.edu/math/seier/jsm-05-etsu.pps>

September 2005- (Invited plenary talk) Cases, tools and experiences in Statistical Consulting VII Congreso de Estudiantes de Estadística del Peru, Lima-Peru

<http://www.etsu.edu/math/seier/charlaPeruCEE05.ppt>

2002-2003- Invited talks at Universidad N.M. de San Marcos, Lima, Peru

- Ideas and strategies for research in Statistics

- Eight Consulting cases

- Computer intensive methods and simulation in statistical inference

- Some consulting cases in Bio-statistics

- Ideas and trends in teaching statistics

August 2002- "Exploratory Tools for Comparison of Activity Time Series," Joint Statistical Meetings Association, New York

July 2002- Kurtosis, XX Colloquium of the Peruvian Mathematical Society, Lima , Peru

July 2000- Kurtosis and Tests for Normality- XVIII Colloquium of the Peruvian Mathematical

Society. Lima, Peru

August 1992-Optimal Designs and sensitivity analysis in regression. Multiciencias (International Symposium), Urubamba, Peru

July 1991- Locally G-optimal designs for Regression Models, ICIAM' 91 (International Conference in Industrial and Applied Mathematics) , Minisymposium "Applied Mathematics in Latin America"

July 1989- "Time series analysis: anchovy in the Peruvian sea". IV Latin American Congress on Biomathematics. Lima, Peru

July 1987- "About a problem in detecting seasonal behavior and cycles using spectral analysis in non-stationary time series" Seminar on Applied Statistics of the Inter -American Statistical Institute (IASI) Mar del Plata, Argentina

July 1980- "Effects of Transformations on Autocorrelations"- V ELAM- Mar del Plata- Argentina.

Co-author in presentations, not a presenter

*August 2007*Joplin, K.H. and Seier, E. Integrated teaching of Mendelian Genetics and Probability, Mathfest. MAA meeting

December 2007 Joplin, K.H., Seier, E, and Peyton, J. Unique developmental respiratory patterns in the flesh fly, *Sarcophaga crassipalpis*: Pupal respiratory cycles. Meeting of the American Entomological Society.

Posters

-Knisley, McIntosh, Seier, Lamb, Owens (2008)Using Graph Theory Models to Predict Secondary Product Glucosyltransferase Function- Annual Meeting of the Phytochemical Society of North America- June 2008.

- Peyton, J., Joplin,K.H., Seier,E. Analysis of the pupal respiratory cycles in the flesh fly, *Sarcophaga crassipalpis*. Meeting of the American Entomological Society. December 2007

-Joplin, K.H., Moore, D, Seier, E. Effects of density on circadian locomotor activity patterns in honey bees (*Apis Mellifera*) and flesh flies (*Sarcophaga crassipalpis*). Meeting of the American Entomological Society. October 2003

-Hamdy, R.C., Kiebzak, G.M. , Seier, E. & Watts, N.B. Women With Osteoporosis Are Missed When Measuring Only One Hip Annual meeting of the International Society of Clinical Densitometry. New Orleans. February 2005

-Kiebzak, G.M., Hamdy, R.C, Seier, E., and Watts, N.B Variability Around the T-Score Cutpoint of -2.5 Impacts Diagnostic Classification Annual meeting of the International Society of Clinical Densitometry. New Orleans. February 2005

-Warren, M., Seier, E, Joplin, K., and Moore,D. Circadian locomotor activity patterns in flesh flies and honey bees. Meeting of the American Entomological society. November 2005

- Seier, E., Kurtosis becomes 100. International Conference on Teaching Statistics ICOTS7. July 2006, Salvador, Bahia, Brazil.

Organization of Meetings

- Appalachian Regional Conference on Teaching Statistics (ARCOTS) March 2003, Johnson City, TN. <http://www.etsu.edu/math/seier/arcots1.htm>
- Women in Science symposium for the Kovalevskaia Foundation. Lima-Peru 1992 & 1993.

Teaching Experience-Courses Taught

(*) = courses I designed and taught for the first time in the respective institutions.

At East Tennessee State University (since 1998):

- Symbiosis I (Statistical component)(*)
- special section of Probability and Statistics for future elementary school teachers (*)
- Statistical Modeling (*)
- Time Series Analysis(*)
- Survey and Sampling Techniques
- Applications of Statistics
- Foundations of Probability and Statistics (Calc based Introductory Statistics)
- Probability and Statistics(Algebra based Intro Stats)
- Calculus I
- Statistical Data Analysis (*)
- Probability and Statistics for teachers
- Supervised teaching (training graduate students to teach Statistics)
- Independent study / Undergraduate Research

At the University of Wyoming (1994-1998):

- Statistical Methods for the Biological Sciences
- Introduction to Statistics (for Biological Sciences)

At Northern Arizona University (Spring 1994): Applied Statistics

At Universidad N.M. de San Marcos (1976-1993):

- Time Series Analysis (*)
- Data Analysis(*)
- Statistical Methodology
- Statistical Inference

- Regression Analysis
- Experimental Design and Analysis of Variance
- Decision theory
- Seminar in Statistics
- Statistical Consulting (*)

At the National Office of Statistics in Peru: Several in-service courses for public employees(*)

Consulting Experience

Since 1998

Walk-in statistical consulting service for ETSU faculty and students involved in research. (Individual cases NOT listed here)

Long term collaboration in data analysis with faculty from Biology, Medicine (Osteoporosis studies) and Public Health (Tobacco Surveys in Tennessee).

1994-1998

Walk-in consulting in the Statistics Consulting Center- University of Wyoming (Individual cases not listed)

Synthetic estimation of rates of alcohol and illegal drugs use and dependence, for the Wyoming Division of Behavioral Health.

Data Analysis of Experiments on Injury and Reduction in Grasses- Chemical, Species and Number of Days between Application and Planting. College of Agriculture. U.W.

Estimation of Accuracy of Data Base. IDES. Laramie, Wyoming

Models to predict resistance of asphalt and aggregates mixtures. Western Research Institute. Laramie, Wyoming.

Data Analysis of experiments on performance of mixtures of recycled tires and asphalt. Western Research Institute. Laramie, Wyoming.

Data Analysis from experiments of weed control using natural grasses and herbicides. College of Agriculture. U.W. Laramie, Wyoming

Data Analysis of Survey on Use of the Internet for a research group in the College of Education U.W.

Data Analysis of Survey on Long-Life-Learning for a research group in the College of Education U.W.

Before 1994

Intramural consulting- Universidad de San Marcos, Lima, Peru (Individual cases not listed)

G-optimal designs for regression models. Case of the cross-quint bridge resistor. Mathematics Clinic, Claremont Graduate School

Market research for an Educational Magazine. Consulting done for Diario El Peruano. Lima-Peru.

Survey on Food Intake in Communal Kitchens in Lima (for a NGO) Lima-Peru.

Survey on development of small businesses. Consulting done for CIPDEL. Lima-Peru.

ARIMA and econometric models for time series of the Peruvian economy. Lima, Peru.

Technical Consulting for the Director of the National Statistics Institute. Peru.
Use of computers in schools. Maria Alvarado School. Lima-Peru.

Administrative Experience

- Member of several committees at ETSU : Faculty council (A&S College), Curriculum, AQI (Mathematics Department)
- 1989 - Chair School of Statistics- Universidad N.M. San Marcos, Lima, Peru.
- 1974-1975 Chair of the Division of Social-Economic Indicators, National Office of Statistics and Census- Peru

Organization of Meetings

- Appalachian Regional Conference on Teaching Statistics ARCOTS March 2003
- Co-organizer of the Sonia Kovalevsky Math Day for Female High School students at ETSU, 2002
- Co-organizer of the Symposium Women on Science of the Kovalevskaja Foundation, Lima, Peru 1992 and 1993.

Awards, Honors and Grants

Grants

- Undergraduate Science Education Grant from the Howard Hughes Medical Institute for the SYMBIOSIS project (\$1'700,000)Knisley, J., Karsai, S., Joplin, K., Moore, D., Helfgott, M., Seier, E. (PIs), Godbole, A. and Miller, H., HHMI grant # 52005872.
- Instructional Development Grant from ETSU(IDG)2006 (\$190) to develop an on-line tutorial on the use of R
- 'A Multi-stage, Technology-intensive Approach to Statistical Instruction". (\$ 124,996) Jeff Knisley (PI) Price & Seier (Co-PIs). NSF Award DUE-0126682 , 2002
- Instructional Development Grant from ETSU(\$1800)Edith Seier (PI) To implement the Resource center of Introductory Statistics Instructors in the Department and to organize a regional conference on teaching statistics (ARCOTS),2002
- "Changing the K-12 Mathematics Infrastructure in Unicoi County. ETSU-Kellog community partnership (\$34,000) A. Godbole, Edith Seier, D.Knisley, 2002
- Several grants from CONCYTEC, Peru, and travel grants from diverse organizations.
- Fulbright scholarship to pursue the master degree, 1971-72.

Awards

- Departmental award for service, 2006
- Departmental award for research, 2003
- C. Oswald George Prize (2003) awarded by the editorial board of Teaching Statistics to the paper Seier & Robe- 'Ducks and Green, an introduction to the ideas of hypothesis testing' as the best paper of the previous year in the journal.
- Award for distinguished performance in the Ph.D. program. Department of Statistics. University of Wyoming, 1998.

Honors

- Graduating Class of 1993 of the School of Statistics UNMSM Lima, Peru, is named after me by decision of the students.

Computer Skills

Minitab, SPSS, SAS, Gauss, Matlab, R

Languages

Spanish and English

Membership

American Statistical Association (since 1993)

Peruvian Mathematical Society (since 1982)

Institute of Quantitative Biology, ETSU (since creation of the IQB)

SACNAS, Society for the Advancement of Chicanos and Native Americans in Science