

# CURRICULUM VITAE

**Edith Seier**

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<http://faculty.etsu.edu/seier>

## Degrees

1998	Ph.D. Statistics	University of Wyoming, Laramie
	Dissertation:	A Family of Skewness and Kurtosis measures
	Advisor:	Douglas G. Bonett
1996	MS Statistics	University of Wyoming, Laramie
	Thesis :	Alternative Measures of Skewness and Kurtosis
1980	Licensure	Universidad N.M. de San Marcos, Lima, Peru
	Thesis:	Non-linear transformations and linear models
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

2016-current	Professor Emerita, East Tennessee State University
2012-current	Profesora Emerita, Universidad Nacional Mayor de San Marcos, Lima-Peru
2009-2016	Professor, Department of Mathematics and Statistics, East Tennessee State University
2003-2009	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

## Areas of Special Interest

- Data analysis and statistical consulting
- Statistics Education
- Spatial Statistics
- R programming
- Writing educational material
- Kurtosis and variability
- Applications to Biology, Medicine and Public Health
- Time Series Analysis
- Data Visualization

## Publications

### Papers in Journals

1. Hamdy, R.C., Seier, E., Whalen, K., Clark, W.A., Hicks, K. & Pigeo, T.B. (2018) "FRAX calculated without BMD does not correctly identify Caucasian men with densitometric evidence of osteoporosis." *Osteoporosis International*. Published online Feb 3, 2018
2. Quijano, A.J., Joyner, M.L., Ross, Chelsea, Watts, C.J., Seier, E., and Thomas C. Jones. (2016) "Spatio-temporal analysis of foraging behaviors of *Anelosimus studiosus* utilizing mathemat-

- ical modeling of multiple spider interaction on a cooperative web.” *Journal of Theoretical Biology*, p. 243-259, August 2016
3. Shropshire, J.D., Moore, D. , Seier, E., Joplin, K.H. (2015) ”Male aggression, limited female choice, and the ontogeny of mating behaviour in the flesh fly, *Sarcophaga crassipalpis*” *Physiological Entomology* (Published online Oct. 19)
  4. Quijano, A.J., Joyner, M.L., Seier, E., Hancock, N., Largent, M. & Jones, T.C. (2015) An Aggregate Stochastic Mode Incorporating Individual Dynamics for Predation Movements of *Anelosimus studiosus*. *Mathematical Biosciences and Engineering Vol 12 # 3* June 2015
  5. Joyner, M., Seier, E. , Jones, T.M. (2014) Distances to a point of reference in Spatial Point Patterns. *Spatial Statistics* Volume 10, November 2014, pp 63 - 75
  6. Moore D, Paquette C, Shropshire JD, Seier E, Joplin KH (2014) Extensive Reorganization of Behavior Accompanies Ontogeny of Aggression in Male Flesh Flies *PLoS ONE 9(4): e93196*, doi: 10.1371/journal.pone.0093196
  7. Onyango E.M., McAmis, L., Seier, E. & Habiyamere, B. M. (2013) Influence of physical restraint on the onset of experimentally induced diabetes mellitus . *Journal of Medical and Biomedical Sciences*. Vol 2 # 4 pp 24-34
  8. Joyner, M., Ross, C. , Seier, E. (2013) Distance to the Border in Spatial Point Patterns. *Spatial Statistics* Vol 6 pp 24-40
  9. Kilaru, A. , Tamura, P., Isaac, G. , Welti, R., Venables, B.J., Seier, E. & Chapman, K.D. (2012) Lipidomic analysis of N-acylphosphatidylethanolamine molecular species in *Arabidopsis* suggests feedback regulation by N-acylethanolamines. *Planta* (DOI) 10.1007/s00425-012-1669-z
  10. Seier, E., Bonett, D.G. (2012) A polyplot for visualizing location, spread, skewness and kurtosis. *The American Statistician*- Vol 66 (to appear)
  11. Seier, E., Liu, Y. (2012) An Exercise to Introduce Power. *Teaching Statistics*. (published on-line April 2011 <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9639.2011.00464.x/pdf>)
  12. Moore D, Van Nest BN, Seier E (2011) Diminishing returns: the influence of experience and environment on time-memory extinction in honey bee foragers. *Journal of Comparative Physiology A*, Vol 197 (6) pp 641-651)
  13. Depelteau, A., Jopiin, K., Govett,A., Miller,H. and Seier,E. (2010) Symbiosis: Development, Implementation and Assessment of a Model Curriculum across Biology and Mathematics at the Introductory Level . *Life Sciences Education*, Vol 9 (3) pp 342-347
  14. Kotz, S. and Seier, E. (2009) Analysis of Quantile Kurtosis- Center and Tails. *Statistical Papers* Vol 50 # 3, pp 553-568
  15. Kotz, S. and Seier, E. (2008) Visualizing peak and tails to introduce kurtosis- *The American Statistician* Vol 62 No. 4 pp 346-352

16. Paquette,C., Joplin,K.H., Seier, E., Peyton, J. and Moore, D. (2008) Sex-specific differences in spatial behaviour in the flesh fly, *Sarcophaga crassipalpis*. *Physiological Entomology*. *Physiological Entomology*. Vol 33 pp 382-388
17. Kotz, S. and Seier, E. (2008) Kurtosis orderings of the Two-sided power distributions. *Brazilian Journal of Probability and Statistics* Vol 22,1 pp 61-68
18. 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.
19. 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*. (Volume 10, Issue 3, July-September 2007, Pages 239-243)
20. Kotz, S. and Seier, E. (2007) Kurtosis of the Topp-Leone distributions. *Interstat*. July 2007.
21. Kiebzak, G., Hamdy, R., Seier,E., Watts,N. (2006) The Prevalence of Significant Left-Right Differences in Hip BMD, *Osteoporosis International* 17:1772-1770
22. 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
23. 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
24. Seier, E. (2004) Curtosis. *Pesquimat* Vol 6 (2) pp 1-26
25. Bonett, D.G. and Seier,E. (2003) Confidence Intervals for Mean Absolute Deviations. *American Statistician*, Vol 57 (4) pp 233-236
26. 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
27. Seier,E. and Bonett, D.G., (2003), Two families of Kurtosis Measures *Metrika* 58 1 pp-59-70
28. 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
29. 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.
30. 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
31. Seier, E.,(2002) Comparison of Tests of Univariate Normality *Interstat*, January 2002 issue

## Book

*An Introduction to Statistics in a Biological Context*- by Edith Seier & Karl H. Joplin, CreateSpace 2011 ISBN-10: 1463613377

## Papers in Proceedings

1. Seier, E. (2014)-An Early Start to Inference Proceedings of the International Conference on Teaching Statistics ICOTS9(refereed paper)
2. Seier, E. and Joplin, K.H. (2010)Teaching statistics in the context of biology- The Symbiosis experience. Proceedings of the International Conference on Teaching Statistics, ICOTS8.
3. Debra Knisley, Edith Seier, Daniel Lamb, Daniel Owens, Cecelia McIntosh (2009)A graph-theoretic model based on primary and predicted secondary structure reveals functional specificity in a set of plant secondary product UDP-glucosyltransferases, Proceedings of the 2009 International Conference on Bioinformatics, Computational Biology, Genomics and Chemoinformatics, (BCBGC-09) William Loging, Mukesh Doble, Zhirong Sun, James Malone (Editors) ISBN: 978-1-60651-009-4
4. 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)
5. 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.
6. 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.
7. 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.
8. 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)
9. Seier, E. (1985) Some experiences in the spectral analysis of time series. Proceedings of the III Colloquium of the Peruvian Mathematical Society. Lima,Peru

## Articles or entries in books or encyclopedias

1. Joplin, Seier, Karsai, Moore, Miller, Godbole & Helfgott(2013) SYMBIOSIS: An Integration of Biology, Math and Statistics at the Freshman Level: Walking Together Instead of on Opposite Sides of the Street, in*Undergraduate Mathematics for the Life Sciences:Models, Processes, and Directions*, MAA Notes, Vol. 81, Mathematical Association of America, Washington DC, 2013, pp. 97–103
2. Moore, Joplin, Karsai, Miller, Helfgott, Godbole & Seier (2013) Creating Quantitative Biologists: The Immediate Future of SYMBIOSIS,in*Undergraduate Mathematics for the Life Sciences:Models, Processes, and Directions* MAA Notes, Vol. 81, Mathematical Association of America, Washington DC, 2013, pp. 201–205

3. Seier, E. (2011) 'Kurtosis- An overview', *International Encyclopedia of Statistics*, Springer.
4. Seier, E. (2011) 'Normality Tests- Power comparison', *International Encyclopedia of Statistics*, Springer.
5. Seier, E. (2010) 'Kurtosis' entry written by invitation for the SAGE Encyclopedia on Research Design.
6. Joplin, Seier, Helfgott, Karsai , Knisley, Moore and Miller (2008) .SYMBIOSIS: An integration of biology and Statistics at the Freshman Level: walking together instead of on opposite sides of the street . *MAA notes on Undergraduate mathematics for the life Sciences: Process, Models, Assessment, and Directions*. (forthcoming)
7. Moore,Helfgott, Godbole, Joplin, Karsai, Knisley, Miller and Seier (2008) Creating Quantitative Biologists: The Immediate Future of SYMBIOSIS. *MAA notes on Undergraduate mathematics for the life Sciences: Process, Models, Assessment, and Directions*. (forthcoming)
8. Govett , Miller , Moore, Seier, Joplin, Godbole, Knisley, Helfgott, and Karsai. Adventures in Assessment: How to Evaluate a New Integrated Quantitative Biology Program, *MAA Notes: Undergraduate Mathematics for the Life Sciences: Processes, Models, and Directions*. (forthcoming)
9. 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 through partnerships: higher education and communities. West Virginia University Press, 2004.

### 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>
- 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."
- Li, Haiyin (2011) "Power Analysis for Alternative Tests for the Equality of Means".
- Allen, Jacob (2011) "Comparison of Time Series and Functional Data Analysis for the Study of Seasonality".
- Deng, Cheng (2014) "Time Series Decomposition using Singular Spectrum Analysis"
- Liu, Jie (2015) "Exploring ways of defining outliers in spatial point patterns"
- Khatiwada, Aastha (2016) "Multilevel models for longitudinal data analysis"
- Soale, Abdul-Nasah (2016) "Spatial-Temporal analysis of spatial point patterns"

### **Undergraduate Honors Theses**

- Ashton, Erin (2005) "Statistical Approach to Multifactorial Microarray Analysis"
- Holman, Sarah (2006) "An Analytical Study on the Probability and Statistics Classes at ETSU"
- McAmis, Lindsey (2011) "Role of Stress in the Onset of Diabetes Mellitus in Mice" (co-directed with Edward Onyango)
- Wang, Ruoying (2012) "A Methodology for the Analysis of Activity data from experiments with flies"

## Most recent Undergraduate Research Projects directed

- McGill, Max (2016) "Text Mining the Greeks".
- Li, Yinghua (2016) "Exploring expected shortfall".
- Shaeffer, Cassidy (2015) "Exploring Cross-Validation for models with a quantitative response".
- Foster, Alison (2015) "Spatial correlation and regression models"
- Chase, Adam (2014) "Analyzing the Complexity of Sequences for a Categorical Variable"
- Allen, Mykel (2014) "Exploring Logistic Regression with several groups and predictors"
- Stuckish, Nick (2014) "Exploring the Effect of lack of Balance in Logistic Regression"

## Other research related activities

- Served as referee for different statistical journals ( Computational Statistics and Data Analysis, Journal of Statistical Computation and Simulation, Scandinavian Journal of Statistics, Applied Statistics, Communications in Statistics-Theory and Methods, Spatial Statistics, Revista Colombiana de Estadística)
- Statistical consulting and long time research collaboration with professionals from other disciplines.

## Selected Presentations

### Talks

*March 2018* Further analysis for contingency tables in introductory statistics courses - Workshop for instructors - UNMSM

*March 2018* Data Visualization with R and other tools - UNMSM

*May 2017* Using R in High School Math - ETSU

*March 2017* Learning and teaching R - Workshop - UNMSM

*March 2017* Analysis of spatial point patterns - UNMSM

*July 2014* An Early Introduction to Inference - ICOTS9 International Conference on Teaching Statistics- Flagstaff, Arizona.

*September 2013* An interdisciplinary experience - XV Congress of Students of Statistics (invited), Universidad Agraria La Molina, Lima, Peru

*August 2013* Being a statistician- the constant challenge - (invited) Colegio Profesional de Estadísticos - Lima , Peru

*February 2013* Things we found while CRAWling (together with Michele Joyner & Chelsea Ross) - Mathematics and Statistics Department Colloquium, ETSU.

*December 2012* Thoughts about how to prepare statisticians - (invited) UNM de San Marcos, Lima , Peru

*September 2012* The polyplot (invited ) - XIV Congress of Students of Statistics- UNMSM- Lima, Peru

*June 2012* Using R to teach randomization methods in introductory statistics courses. UseR international conference, Nashville, TN.

*July 2011* Final contributions of S.Kotz in the topic of kurtosis. Memorial session in honor of Samuel Kotz. Joint Statistical Meetings, Miami, Florida.

*April 2010* Invited talk - Identification of genes that have a different level of expression in the presence of a disease. Conference of Health Statisticians, National Institute of Children Health, Lima, Peru.

*October 2009-* Invited talk- 'Statistical Consulting- cases, challenges and opportunities' IV Exact Sciences Conference in the Universidad Autonoma de Aguas Calientes, Mexico.

*June 2009-* Poster & Beyond presentation 'An Early Introduction to Inference-the Symbiosis Experience' - US Conference on Teaching Statistics- Columbus, OH.

*June 2009-* Invited talk- 'Undergraduate research in Statistics'- U.N.M. San Marcos, Lima, Peru.

*June 2009-* Invited talk - 'Statistical analysis of Micro-array data' - Graduate program in Biostatistics- U.N.M. San Marcos, Lima, Peru.

*May 2009-* Invited talk 'The irresistible temptation of doing research' - Undergraduate research symposium, U.N.M. San Marcos, Lima, Peru.

*December 2008-* Invited talk 'Micro-array data Analysis' in the annual meeting of the Colegio Peruano de Estadisticos, Lima, Peru.

*July 2008-* Presentation on the statistical component of Symbiosis I in the Symbiosis workshop held at ETSU.

*May 2008-* Invited talk at the Catholic University of Peru 'Kurtosis-brief history and recent results'.

*October 2007-*Invited talk at STATFEST ( pre-conference meeting) SACNAS (Society for the advancement of Chicanos and Native Americans in Science) -'Teaching Statistics in the Biology Context- the Symbiosis project'

*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.

### **Selected Posters**

Seier, E. Teaching the exact test for proportions. International Conference on Teaching Statistics ICOTS9, Flagstaff, Arizona, July 2014.

Seier, E., Joyner, M., Jones, T.C., Moore, D. , Joplin, K.H. Learning Statistics in an interdisciplinary undergraduate research setting. ICOTS9, Flagstaff, Arizona, July 2014.

Seier, Joyner, Jones, Ross & Watts Tools for the analysis of the spatial distribution of social spiders in a web- the case of the *Anelosimus studiosus* Conference on Spatial Statistics, Columbus OH, June 2013

Edith Seier & Karl Joplin : 'Teaching microarray data analysis of gene expression during development in an introductory undergraduate curriculum -the SYMBIOSIS experience' poster presented in the Second RECOMB Satellite Conference on Bioinformatics Education May 22-23 2010 , University of California, San Diego,La Jolla, California RECOMB2010

Three posters presented at the Howard Hughes Medical Institute workshop in Maryland- July 21-24 2008-

- Seier, Joplin and Knisley- An early introduction of inference in Symbiosis I.

-Seier and Joplin- Exploring DNA sequences using probability in Symbiosis I.

- Seier and Joplin- Biology, a good excuse to talk about probability and Statistics.

-Knisley, McIntosh, Seier, Lamb, Owens. 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

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

-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

-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

### 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 Kovalevskaja 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):

1. Statistical Computing (\*)
2. Special section (Honors) of Probability and Statistics (\*)
3. Symbiosis I, II and III (Statistical component of those courses) (\*)
4. Special section of Probability and Statistics for future elementary school teachers (\*)
5. Statistical Modeling (\*)
6. Time Series Analysis (\*)
7. Survey and Sampling Techniques
8. Applications of Statistics
9. Foundations of Probability and Statistics (Calc based Introductory Statistics)
10. Probability and Statistics (Algebra based Intro Stats)

11. Calculus I
12. Statistical Data Analysis (\*)
13. Probability and Statistics for teachers
14. Supervised teaching (training graduate students to teach Statistics)
15. Independent study / Undergraduate Research

**At the University of Wyoming (1994-1998):**

1. Statistical Methods for the Biological Sciences
2. Introduction to Statistics (for Biological Sciences)

**At Northern Arizona University (Spring 1994):** Applied Statistics  
**At Universidad N.M. de San Marcos (1976-1993):**

1. Time Series Analysis (\*)
2. Data Analysis(\*)
3. Statistical Methodology (\*)
4. Statistical Inference
5. Regression Analysis
6. Experimental Design and Analysis of Variance
7. Decision theory
8. Seminar in Statistics
9. Statistical Consulting (\*)

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

## **Consulting Experience**

### **Since 1998**

Short-term free statistical consulting for ETSU faculty and students involved in research. An average of 20 cases per year since the year 2000. Individual cases not listed here.

Also long term collaboration with faculty from Biology and Medicine, some cases have resulted in papers.

### **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, Tenure and Promotion (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**

- Local host for the CAUSE workshop at ETSU, July 2008.
- 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

- Cintron-Arias, A. (PI), Godbole, A., Knisley, K. and Seier, E. (Co-PIs). "S-STEM Program: Preparation of Data-Driven Mathematical Scientists for the Workforce." NSF grant DUE-1356397.
- Moore, D. (PI), Joplin, K. , Jones, T. , Joyner,M.L., Seier, E. (Co-PIs). UBM Group: Collaborative Research on the Arthropod Way of Life (CRAWL): Interdisciplinary Training in Mathematical Biology. NSF grant (\$229,000) (2011-2013)
- 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. (2006-2011)
- 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 research, 2015
- One of the two Notable Women of ETSU awards in 2012.
- College of Arts and Sciences award for research, 2009
- 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**

- Professor Emeritus at Universidad Nacional Mayor de San Marcos, July, 2013
- Honorary Member at Colegio Profesional de Estadísticos del Peru, Region Lima, August 1, 2013.
- Graduating Class of 1993 of the School of Statistics UNMSM Lima, Peru, is named after me by decision of the students.

## **Computer Skills**

R, SAS, Minitab, SPSS, Gauss, Matlab, Fortran IV

## **Languages**

Spanish and English

## **Membership**

Colegio Profesional de Estadísticos del Peru (since 2013)

American Statistical Association (since 1993)

Peruvian Mathematical Society (since 1982)

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