

Leif Ellingson

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CONTACT INFORMATION

Room 215
Department of Mathematics & Statistics
Texas Tech University
Lubbock, TX 79409 USA

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RESEARCH INTERESTS

Statistics on manifolds, nonparametric statistics on manifolds, object data analysis, multivariate analysis, statistical shape analysis, structural proteomics, functional data analysis, non-least-squares estimation, asymptotic theory, nonparametric bootstrap, sample spaces with manifold stratification, statistical methods for dynamical systems

EDUCATION

Florida State University, Tallahassee, Florida USA

Ph.D., Statistics, August 2011

- Dissertation: “Statistical Shape Analysis on Manifolds with Applications to Planar Contours and Structural Proteomics”
- Advisor: Vic Patrangenaru

M.S., Statistics, May 2009

University of Maryland, College Park, Maryland USA

B.S., Mathematics, May 2007

ACADEMIC EXPERIENCE

Associate Professor, Department of Mathematics and Statistics, Texas Tech University, Lubbock, Texas, USA, September 2017 - present.

Assistant Professor, Department of Mathematics and Statistics, Texas Tech University, Lubbock, Texas, USA, August 2011 - August 2017.

Graduate Teaching Assistant, Department of Statistics, Florida State University, Tallahassee, Florida, USA, August 2007 - April 2011.

Graduate Research Assistant, Department of Statistics, Florida State University, Tallahassee, Florida, USA, Summers 2009-2010.

Research Assistant, Earth System Science Interdisciplinary Center, University of Maryland, College Park, Maryland, USA, May - August 2007.

Undergraduate Research Assistant, Center for Ocean-Atmospheric Prediction Studies, Florida State University, Tallahassee, Florida, USA, Summers 2004 - 2006.

Undergraduate Research Assistant, Department of Oceanography, Florida State University, Tallahassee, Florida, USA, June - August 2003..

HONORS AND AWARDS

Professing Excellence Award,

- University Student Housing Texas Tech University, 2018

Excellence in Teaching Award,

- Department of Mathematics and Statistics, Texas Tech University, 2016

New Faculty Award,

- Texas Tech Alumni Association, 2014

Ralph A. Bradley Award for outstanding achievement as a graduate student,

- Department of Statistics, Florida State University, 2010-2011 Academic Year

Second Place in Student Paper Competition,

- Florida Chapter of the American Statistical Association, February 2010

GRANTS

Ellingson, Leif (PI), Allen, Linda (Co-PI), Wang, Chunmei (Senior Personnel), Ibraguimov, Akif (Senior Personnel), and Moskal, Barb (Senior Personnel). “**REU site: Research Experiences for Undergraduates in Mathematical, Statistical and Computational Methods on Complex Problems in the Life Sciences.**” Sponsored by the **National Science Foundation**. **\$204,557.11**. June 2022 - May 2024.

Ellingson, L. (PI), Dwyer, J. (Co-PI), Johnson, L. (Co-PI), Spott, J. (Co-PI) “Texas Tech University Summer Mathematics Academy (TTU-SuMAc).” Sponsored by the **Mathematical Association of America Dolciani Mathematics Enrichment Grant program**. **\$6000**. Summer 2014.

Ellingson, L. (PI), Dwyer, J. (Co-PI), Johnson, L. (Co-PI), Spott, J. (Co-PI) “Texas Tech University Summer Mathematics Academy (TTU-SuMAc).” Sponsored by the **Mathematical Association of America Dolciani Mathematics Enrichment Grant program**. **\$6000**. Summer 2013.

REFEREED PUBLICATIONS

Bandara, D., **Ellingson, L.**, Ghosh, S., and Pal, R. (2023) A modified neighborhood hypothesis test for population mean in functional data. *Accepted for publication at Journal of Agricultural, Biological, and Environmental Statistics*

Zhang, W. and **Ellingson, L.** (2023) Detecting and Resetting Tipping Points to Create More HIV Post-treatment Controllers with Bifurcation and Sensitivity Analysis. *Accepted for publication at SIAM Journal of Applied Mathematics*.

Ahanda, B., Osborne, D. E., and **Ellingson, L.** (2022) Robustness of lognormal confidence regions for means of symmetric positive definite matrices when applied to mixtures of lognormal distributions. *METRON* (2022). <https://doi.org/10.1007/s40300-022-00234-z>

J. M. Thilini Jayasinghe, **Leif Ellingson**, and Chalani Prematilake (2021) Regression models using the LINEX loss to predict lower bounds for the number of points for approximating planar contour shapes, *Journal of Applied Statistics*, DOI: 10.1080/02664763.2021.1986685

Zhang, W., **Ellingson, L.**, Frascoli, F., and Heffernan, J. (2021) An Investigation of Tuberculosis Progression Revealing the Role of Macrophages Apoptosis via Sensitivity and Bifurcation Analysis. *J Math Biol.* 83(3):31. doi: 10.1007/s00285-021-01655-6

Premarathna, G.I. and **Ellingson, L.** (2021) A mathematical representation of protein binding sites using structural dispersion of atoms from principal axes for classification of binding ligands. *PLOS ONE* 16(4): e0244905. <https://doi.org/10.1371/journal.pone.0244905>

Alexander, B. advised by **Ellingson, L.** (2019) A Bayesian Model for the Prediction of United States Presidential Elections. *SIAM Undergraduate Research Online.* Vol. 12, p. 31-49. **Undergraduate Research Paper**

Prematilake, C. and **Ellingson, L.** (2018) Evaluation and Prediction of Polygon Approximations of Planar Contours for Shape Analysis. *Journal of Applied Statistics.* 45 (7), p. 1227-1246, DOI: 10.1080/02664763.2017.1364716

Ellingson, L., Groisser, D., Osborne, D., Patrangenaru, V., and Schwartzman, A. (2017) Nonparametric Bootstrap of Sample Means of Positive Definite Matrices with an Application to Diffusion-Tensor-Imaging Data. *Communications in Statistics – Simulation and Computation.* 46 (6), p. 4851-4879

Qiu, M., Patrangenaru, V., and **Ellingson, L.** (2014). How far is the Corpus Callosum of an average individual from Albert Einstein's? Proceedings of COMPSTAT 2014, The 21st International Conference on Computational Statistics. p. 403-410.

Ellingson, L., Hendriks, H., Patrangenaru, V., San Valentin, P. (2014). On the CLT on Low Dimensional Stratified Spaces. Topics in Nonparametric Statistics: Proceedings of the First Conference of the International Society for Nonparametric Statistics. Springer Proceedings in Mathematics & Statistics, **74**, 227-240.

Ellingson, L., Patrangenaru, V., and Ruymgaart, F. (2013). Nonparametric Estimation of Means on Hilbert Manifolds and Extrinsic Analysis of Mean Shapes of Contours. *Journal of Multivariate Analysis.* **122**, 317-333.

Osborne, D. E., Patrangenaru, V., **Ellingson, L.**, Groisser, D., and Schwartzman, A. (2013). Nonparametric Two-Sample Tests on Homogeneous Riemannian Manifolds, Cholesky Decompositions and Diffusion Tensor Image Analysis. *Journal of Multivariate Analysis*, 119, 163 - 175.

R. N. Bhattacharya, M. Buibas, I. L. Dryden, **L. A. Ellingson**, D. Groisser, H. Hendriks, S. Huckemann, Huiling Le, X. Liu, J. S. Marron, D. E. Osborne, V. Patrangenaru, A. Schwartzman, H. W. Thompson, A.T.A. Wood (2012). Extrinsic Data Analysis on Sample Spaces with a Manifold Stratification. *Advances of Mathematics, Invited Contributions at the Seventh Congress of Romanian Mathematicians, Brassov, Romania, 2011.* pp. 148 - 156.

Ellingson, L. and Zhang, J. (2012). Protein Surface Matching by Incorporating Local and Global Geometric Information. *PLoS ONE* 7(7): e40540. doi:10.1371/journal.pone.0040540

Bhattacharya, R.N; **Ellingson, L.**; Liu, X; Patrangenaru, V and Crane, M. (2012). Extrinsic Analysis on Manifolds is Computationally Faster than Intrinsic Analysis, with Application to Quality Control by Machine Vision. *Applied Stochastic Models in Business and Industry.* 28 (3) pp 222 - 235.

Ellingson, L. and Zhang, J. (2011) An efficient algorithm for matching protein binding sites for protein function prediction. Proceedings of the ACM Conference on Bioinformatics, Computational Biology and Biomedicine 2011.

BOOKS

V. Patrangenaru and **L. Ellingson.** (2015) *Nonparametric Statistics on Manifolds and Their Applications to Object Data Analysis.* Chapman & Hall/CRC.

- BOOK CHAPTERS V. Piyush, **L. Ellingson**, S. VanderPlas, and S. Ghosh. (2023) Introduction to image data analysis. *Festschrift in honour of Professor Tathagata Bandyopadhyay*. *Submitted*
- PAPERS IN PREPARATION Xu, D. and **Ellingson, L.** A Goodness of Fit Test for Low-Dimensional Object Data Using Nearest Neighbors. *In revision to resubmit.*
- Martirosyan, V., Smith, E., Hill, K., and **Ellingson, L.** Classification of Protein Binding Sites Using Structural and Chemical Information. *Working paper.*
- Ahanda, B., Osborne, D. E., and **Ellingson, L.** The Cholesky-normal distribution for symmetric positive definite matrices and inference for the mean. *Working paper.*
- Jayasinghe, JMT, and **Ellingson, L.** Properties of regression models fit using the LINEX loss function. *Working paper.*
- Karunaratne, D. and **Ellingson, L.** Two-sample tests of neighborhood hypotheses for high-dimensional multivariate data. *Working paper.*
- Bandara, D. and **Ellingson, L.** Neighborhood Hypothesis Tests for Procrustes and Extrinsic Mean Shapes. *In preparation.*
- Xu, D. and **Ellingson, L.** Improved Goodness of Fit Tests for Object Data Using Pairwise Distances. *In preparation.*
- Ellingson, L.**, Karunaratne, D., and Perera, C. Geometric Tests for Equality of Covariance Matrices. *In preparation.*
- Perera, C., Conover, J, and **Ellingson, L.** Process control for multivariate data using sequential normal scores. *In preparation.*
- NON-REFEREED PAPERS Ahanda, Benoit, **Ellingson, Leif**, and Osborne, Daniel. Cholesky Normal Distribution in the Space of Symmetric Positive-Definite Matrices. Proceedings of the 2019 Joint Statistics Meetings.
- Alexander, Brittany, and **Ellingson, L.** Poll-Based Bayesian Models to Predict United States Presidential Elections. Proceedings of the 2019 Joint Statistics Meetings.
- Premarathna, G.A.I.C. and **Ellingson, L.** Classification of protein binding sites using their structural dispersion. Proceedings of the 2017 Joint Statistical Meetings.
- Ahanda, B, Osborne, D. E., and **Ellingson, L.** Robustness of Lognormal Confidence Regions for Means of Symmetric Positive Definite Matrices. Proceedings of the 2017 Joint Statistical Meetings.
- Ellingson, L.** and Prematilake, C. (2013) Problems in Approximating Shapes of Planar Contours. Proceedings of the 2013 Joint Statistical Meetings.
- Ellingson, L.**, Ruymgaart, F. H., and Patrangenaru, V. (2013). Data analysis on Hilbert manifolds and shapes of planar contours. *Accepted at Statistical Models and Methods for non-Euclidean Data with Current Scientific Applications, The 32nd Leeds Annual Statistical Research Workshop.*
- Buibas, M.; Crane, M.; **Ellingson, L.** and Patrangenaru, V. (2011). A Projective Frame-Based Shape Analysis of a Rigid Scene from Noncalibrated Digital Camera Imaging Outputs *Proc. of JSM, 2011, Miami, FL.*

CONFERENCE
PRESENTATIONS

Ellingson, L. and Xu, Dong. Neighborhood Hypothesis Tests for Means of High-Dimensional Data. Alamo Symposium in Statistics. San Antonio, TX. March 10, 2023. **Invited.**

Ellingson, L. and Xu, Dong. Methods for Testing Distributional Assumptions for Object Data. 2022 Joint Statistics Meeting. Washington, DC. August 11, 2022. **Accepted.**

Ellingson, L. and Xu, Dong. A Goodness of Fit Test for Object Data Using Nearest Neighbors. 2019 Joint Statistics Meeting. Denver, Colorado. July 29, 2019. **Accepted.**

Ellingson, L. and Premarathna, G.A.I.C. Classification of protein binding sites using their structural information via object data analysis. Conference of the 60th Anniversary of the FSU Department of Statistics. Tallahassee, FL. April 13, 2019. **Accepted.**

Ellingson, L., Bandara, D. and Ghosh, S. A Neighborhood Hypothesis Test for Functional Data with an Application in Investigating Agreement in Drug Sensitivity Profiles. International Congress of Mathematicians 2018. Rio de Janeiro, Brazil. August 5, 2018.

Ellingson, L. and Premarathna, G.A.I.C. A Covariance-based Representation of Protein Binding Sites for Model-based Classification. 4th Conference of the International Society for Nonparametric Statistics. Salerno, Italy. June 13, 2018. **Invited.**

Ellingson, L. Premarathna, G.A.I.C. Classification of protein binding sites using their structural dispersion. 2018 Conference of Texas Statisticians. San Antonio, Texas. April 13, 2018. **Invited.**

Ellingson, L. and Bandara, D. Neighborhood Hypothesis Tests for Fréchet Mean Shapes. 2018 AMS Spring Central Sectional Meeting. Columbus, Ohio. March 18, 2018.

Bandara, D., **Ellingson, L.** and Ghosh, S. A neighborhood test for functional data with application to biological data. 2017 Joint Statistical Meetings, August 1, 2017.

Ellingson, L. Statistical Shape Analysis via Statistics on Manifolds. International Conference on Computational Modeling and Simulation 2017. Colombo, Sri Lanka. May 17, 2017. **Keynote talk.**

Ellingson, L. and Premarathna, I. Analysis of Binding Site Structure for Protein Function Prediction. 2014 Joint Statistical Meetings. Boston, MA. August 5, 2014. **Topic contributed.**

Ellingson, L. An Introduction to Statistics on Manifolds. AMS Spring Central Sectional Meeting. Lubbock, TX. April 11, 2014.

Ellingson, L. Nonparametric Estimation of the Extrinsic Mean Shape of Planar Contours. 2014 Conference of Texas Statisticians. Dallas, TX. March 22, 2014. **Invited.**

Ellingson, L. and Prematilake, C. Problems in Approximating and Estimating Mean Shapes of Planar Contours. 2013 Joint Statistical Meetings. Montreal, Quebec. August 5, 2013. **Topic contributed.**

Ellingson, L. and Zhang, J. An efficient algorithm for matching protein binding sites for protein function prediction. ACM Conference on Bioinformatics, Computational Biology and Biomedicine 2011, Chicago, Illinois. August 2011.

Ellingson, L., Patrangenu, V. and Zhang, J. Mean Size-and-Shape Active Site Responses to Protein Functions. 2010 Summer Research Conference of Southern Regional Council on

Statistics, Virginia Beach, Virginia. June 7, 2010. **Invited.**

Ellingson, L. and Zhang, J. sMatch: An Algorithm for Matching Protein Surfaces. The 2010 Florida Chapter of the American Statistical Association (FLASA) Meeting, Florida State University, Tallahassee, Florida. February 2010.

OTHER INVITED
PRESENTATIONS

Ellingson, L. and Xu, Dong. Methods for testing distributional assumptions for object data. Colloquium of the Department of Computer Science, Texas Tech University. September 14, 2021.

Ellingson, L. and GAIC Premarathna. Using Structural Characteristics of Protein Binding Sites to Understand Binding Behavior. Colloquium at Dalian University of Technology. December 27, 2018.

Alexander, B. and **Ellingson, L.** The Math Behind the Presidential Election. Colloquium at Midland College. *Jointly presented by both authors.* October 28, 2016.

Ellingson, L. The neighborhood hypothesis test for the extrinsic mean shape of a population of planar contours. Weekly Meeting of the Data Analysis on Hilbert Manifolds and their Application working group of the SAMSI 2013-2014 Program on Low-dimensional Structure in High-dimensional Systems. January 28, 2014.

Ellingson, L. Efficient Methodology for Shape Analysis of Planar Contours. Colloquium in the Department of Mathematics and Statistics at Texas Tech University. March 11, 2011.

Ellingson, L., Ruymgaart, F., and Patrangenaru, V. Automatic Landmark Extraction for Planar Contours. Weekly Meeting of the Geometric Correspondence Working Group of the SAMSI 2010 Analysis of Object Data Program. October 10, 2010.

POSTER
PRESENTATIONS

Martirosyan, Vardan, Smith, Edward, Hill, Kathleen, and **Ellingson, Leif.** Classification of Protein Binding Sites Using Structural and Chemical Information. 2022 Red Raider Research Experience for Undergraduates Mini-Symposium. July 29, 2022. *Presented by V. Martirosyan, E. Smith, and K. Hill*

Xu, Dong and **Ellingson, Leif.** A Distribution-Free Goodness-of-Fit Test. 3rd Annual Meeting of the SIAM Texas-Louisiana Section. Virtual Meeting. October 16, 2020. *Presented by D. Xu*

Alexander, Brittany and **Ellingson, L.** Poll-Based Bayesian Models to Predict United States Presidential Elections. 2019 Joint Statistics Meeting. Denver, Colorado. July 30, 2019. *Presented by B. Alexander*

Premarathna, GAIC and **Ellingson, L.** Classification of protein binding ligands via alignment-invariant covariance matrices. TGDA at OSU TRIPODS Center Workshop: Structure in the Micro-world. May 28, 2019.

Alexander, B. and **Ellingson, L.** Bayesian Statistical Models for the Prediction of United States Presidential Elections. 2018 Conference of Texas Statisticians. *Presented by B. Alexander.* April 13, 2018. *Awarded as 1st Place in Student Poster Competition*

Alexander, B. and **Ellingson, L.** A Bayesian Statistical Model for the Prediction of the 2016 United States Presidential Election. 19th Annual Nebraska Conference for Undergraduate women in Mathematics. *Presented by B. Alexander.* February 4, 2017.

Ahanda, B, Osborne, D. E., and **Ellingson, L.** Robustness of Lognormal Confidence Regions for Means of Symmetric Positive Definite Matrices. SRCOS 2016 Summer Research Conference, June 7, 2016. Presented by B. Ahanda.

Bandara, D., Ghosh, S., and **Ellingson, L.** A neighborhood test for functional data with application to biological data. 2017 Conference of Texas Statisticians, March 24, 2017. Presented by D. Bandara.

Prematilake, C. and **Ellingson, L.** Prediction and Comparison of Approximations of Planar Contours for two Parameterizations. SRCOS 2016 Summer Research Conference, June 6, 2016.

Premarathna, G.A.I.C. and **Ellingson, L.** Classification of protein binding sites using their structural dispersion. 2016 Conference of Texas Statisticians, April 9, 2016.

Prematilake, C. and **Ellingson, L.** Prediction and Comparison of Approximations of Planar Contours for two Parameterizations. 2016 Conference of Texas Statisticians, April 8, 2016. Presented by C. Prematilake. *Awarded as 1st Place in Doctoral Poster Competition*

Biesiadny, S. and **Ellingson, L.** Modeling the relationship between MLB ballparks and home team performance using shape analysis. 2016 Conference of Texas Statisticians, April 8, 2016. Presented by S. Biesiadny. *Awarded as Best Poster in Applied Statistics*

Premarathna, G.A.I.C. and **Ellingson, L.** Classification of protein binding sites using their structural dispersion. 15th Annual Red Raider Mini-Symposium, November 6, 2015. Presented by G.A.I.C. Premarathna.

Prematilake, C. and **Ellingson, L.** Prediction and Comparison of Approximations of Planar Contours for two Parameterizations. 15th Annual Red Raider Mini-Symposium, November 6, 2015. Presented by C. Prematilake.

Ellingson, L. Nonparametric Statistics on Manifolds: A Survey of Problems and Applications. 2015 Conference of Texas Statisticians. Austin, TX. April 11, 2015.

Premarathna, G.A.I.C. and **Ellingson, L.** Classification of protein binding sites using their structural dispersion. 2015 Conference of Texas Statisticians. Austin, TX. April 11, 2015. Presented by G.A.I.C. Premarathna.

Prematilake, C. and **Ellingson, L.** Prediction of Lower Bounds for the Number of Sampling Points for Approximating Shapes of Planar Contours. 2014 SRCOS Summer Research Conference, June 3, 2014. Presented by C. Prematilake.

Premarathna, G.A.I.C. and **Ellingson, L.** Logistic Regression Models for Classification of Protein Binding Ligands. 2014 SRCOS Summer Research Conference, June 3, 2014. Presented by G.A.I.C. Premarathna.

Ellingson, L., Dwyer, J., Johnson, L., and Spott, J. Texas Tech University Summer Math Academy 2013. Joint Mathematical Meetings, January 16, 2014. Presented by L. Ellingson.

Ellingson, L., Patrangenaru, V., and Ruymgaart, F. Approximation and Nonparametric Estimation of Mean Shapes of Planar Contours. MBI Current Topics Workshop: Statistics, Geometry, and Combinatorics on Stratified Spaces Arising from Biological Problems, May 25, 2012. Presented by L. Ellingson.

Ellingson, L. and Patrangenaru, V. Computational Advantages of Extrinsic Analysis on Manifolds Over Intrinsic Analysis on Manifolds. SAMSI 2010 Analysis of Object Data Program Opening Workshop. September 13, 2010. Presented by L. Ellingson.

CONTRIBUTIONS
TO
PRESENTATIONS

Jayasinghe. J. M. T. N., and **Ellingson, L.** Some Characteristics of Regression Models Fitted Using the LINEX Loss Function. 2021 Joint Statistics Meeting. Virtual. August 9, 2021. **Accepted.**

Bandara, D., **Ellingson, L.**, and Ghosh, S. A Neighborhood Hypothesis Test for a High-Dimensional Mean When the Neighborhood Is Defined in Terms of the Total Population Variance with an Application to Model Validation. 2021 Joint Statistics Meeting. Virtual. August 8, 2021. **Accepted.**

Ahanda, Benoit, **Ellingson, Leif**, and Osborne, Daniel. Cholesky Normal Distribution in the Space of Symmetric Positive- Definite Matrices. 2019 Joint Statistics Meeting. Denver, Colorado. July 28, 2019. **Accepted.**

Bandara, D., Ghosh, S., **Ellingson, L.**, Rahman, R, and Pal, R. A Neighborhood Hypothesis Test for Functional Data. AISC2018 International Conference on Advances in Interdisciplinary Statistics and Combinatorics. October 5, 2018. Presented by D. Bandara.

Premarathna, G.A.I.C. and **Ellingson, L.** Analyzing ligand-binding proteins using their structural information. 2018 South Dakota State Data Science Symposium, February 12, 2018. Presented by G.A.I.C. Premarathna.

Premarathna, G.A.I.C. and **Ellingson, L.** Classification of protein binding sites using their structural dispersion. 2017 Joint Statistical Meetings, August 3, 2017. Presented by G.A.I.C. Premarathna.

Ahanda, B, Osborne, D. E., and **Ellingson, L.** Robustness of Lognormal Confidence Regions for Means of Symmetric Positive Definite Matrices. 2017 Joint Statistical Meetings, August 1, 2017. Presented by B. Ahanda.

Premarathna, G.A.I.C. and **Ellingson, L.** Classification of protein binding sites using their structural dispersion. 8th Annual Texas Tech University Biological Sciences Symposium, April 8, 2017. Presented by G.A.I.C. Premarathna.

Prematilake, C. and **Ellingson, L.** Prediction of Lower Bounds for the Number of Sampling Points for Approximating Shapes of Planar Contours. 2015 Joint Statistical Meetings. Seattle, Washington. August 11, 2015.

Qiu, M., Patrangenaru, V., and **Ellingson, L.** Neighborhood Hypothesis Testing for Mean Contour Shapes of Corpus Callosum Mid Sections. AMS Spring Central Sectional Meeting. Lubbock, TX. April 11, 2014.

Prematilake, C. and **Ellingson, L.** Prediction of Lower Bounds for the Number of Sampling Points for Approximating Shapes of Planar Contours. AMS Spring Central Sectional

Meeting. Lubbock, TX. April 11, 2014.

Patrangenaru, V., Qiu, M., and **Ellingson, L.** Neighborhood Hypothesis Testing for Mean Contour Shapes of Corpus Callosum Mid Sections. SAMSI Workshop on Topological Data Analysis. February 6, 2014. Presented by V. Patrangenaru.

Patrangenaru, V., Qiu, M., and **Ellingson, L.** Two sample tests for mean 3D projective shapes of surfaces from digital camera images. 29th European Meeting of Statisticians. July 20-25, 2013. Budapest, Hungary. Presented by V. Patrangenaru.

Patrangenaru, V., **Ellingson, L.** and Ruymgaart F. H. Data Analysis on Hilbert Manifolds and Shapes of Planar Contours. LASR 2013. July 2-4, 2013. Leeds, England. Presented by V. Patrangenaru.

Patrangenaru, V., San Valentin, P., **Ellingson, L.**, Marron, J. S., and Miller E. CLT on One dimensional Stratified Spaces, First Conference of the International Society for Non-Parametric Statistics. June 15-19, 2012. Chalkidiki, Greece. Presented by V. Patrangenaru.

Patrangenaru, V., **Ellingson, L.** and Osborne, D. Analysis of Object Data is Data Analysis on Sample Spaces with a Manifold Stratification, CRM, Bucharest, Romania, June 29 - July 5, 2011. Presented by V. Patrangenaru.

Patrangenaru, V and **Ellingson, L.** Statistical Analysis of Object Data is Data Analysis on Sample Spaces with a Manifold Stratification. SAMSI 2010-2011 Analysis of Object Data Program Transition Workshop. Research Triangle Park, NC. June 10, 2011. Presented by V. Patrangenaru.

Bhattacharya, R.N; **Ellingson, L.**; Liu, X; Patrangenaru, V; and Sughatadasa, S. Extrinsic Analysis on Manifolds is Computationally Faster than Intrinsic Analysis, with Examples from Shape and Image Analysis. ISBIS 2010. Portoroz, Slovenia. July 6, 2010. Presented by V. Patrangenaru.

SEMINARS

- “Neighborhood Hypothesis Tests for Means of High Dimensional Data” Image Analysis Seminar, May 1, 2019.
- “Using Structural Characteristics of Protein Binding Sites to Understand Binding Behavior, Part II” Statistics Seminar, Apr. 30, 2018.
- “Using Structural Characteristics of Protein Binding Sites to Understand Binding Behavior, Part I” Statistics Seminar, Apr. 23, 2018.
- “Statistical Shape Analysis via Statistics on Manifolds” Statistics Seminar, Sep. 11, 2017.
- “An Introduction to Problems in Statistical Shape Analysis” Image Analysis Seminar, Feb. 22, 2017.
- “An Introduction to Statistics in Digital Image Analysis, Part II” Image Analysis Seminar, Feb. 10, 2016.
- “An Introduction to Statistics in Digital Image Analysis, Part I” Image Analysis Seminar, Feb. 3, 2016.
- “A Case Study in Ecology II: Neighborhood Hypothesis Tests,” Statistics Seminar, Oct. 19, 2015.
- “Introduction to Image and Shape Analysis,” Image Analysis Seminar, Sep. 9, 2015.
- “Nonparametric Estimation of the Extrinsic Mean Shape of Planar Contours,” Image Analysis Seminar, Apr. 8, 2015.

- “Aligning Binding Site Structure for Protein Function Prediction,” Image Analysis Seminar, Oct. 22, 2014.
- “Introduction to Digital Image Analysis, Part II,” Image Analysis Seminar. Sep. 17, 2014.
- “Introduction to Digital Image Analysis, Part I,” Image Analysis Seminar. Sep. 10, 2014.
- “Introduction to Shape Analysis,” Image Understanding and Shape Analysis Seminar. Feb. 5, 2014.
- “Binding Site Alignment for Protein Function Prediction,” Biomathematics Seminar. Oct. 30, 2012.

COURSE
PREPARATION

Texas Tech University

As instructor of record,

- MATH 2300 Statistical Methods, Fall 2015 (Honors), Fall 2016 (Honors), Spring 2017, Fall 2017 (Honors), Fall 2018 (Regular and Honors), Spring 2019 (Honors), Fall 2019 (Honors), Spring 2020 (Honors), Fall 2020 (Honors), Spring 2021 (Honors), Fall 2021 (Honors), Spring 2022 (Honors and Regular), Fall 2022 (Honors).
- MATH 3342 Statistics for Scientists and Engineers, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Spring 2015 (Honors), Summer II 2015, Fall 2016, Summer I 2017, Spring 2018 (Honors).
- MATH 4342 Mathematical Statistics, Fall 2012, Fall 2013.
- MATH 4343 Mathematical Statistics, Spring 2013, Spring 2014.
- STAT 5328 Intermediate Mathematical Statistics I, Fall 2014, Fall 2015.
- STAT 5329 Intermediate Mathematical Statistics II, Spring 2015, Spring 2016.
- STAT 5371 Regression Analysis, Fall 2017, Spring 2020.
- STAT 5375 Statistical Multivariate Analysis, Spring 2012, Spring 2016, Spring 2017, Spring 2019, Fall 2019, Fall 2020, Fall 2021, Fall 2022.
- STAT 5386 Statistical Computing and Simulation, Summer II 2012, Spring 2014.

As course coordinator,

- MATH 2300 Statistical Methods, Spring 2012, Fall 2012, Spring 2018, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023.

Florida State University

As instructor of record,

- STA 1013 Statistics Through Example, Fall 2010, Spring 2009, Fall 2008.
- STA 2023 Fundamentals of Business Statistics, Summer 2008.
- STA 2122 Introduction to Applied Statistics, Spring 2010.

As a teaching assistant,

- Recitation Leader. STA1013 Statistics Through Example, Spring 2008.
- Grader. STA1013 Statistics Through Example, Fall 2007.
- Grader. STA4202/5206 ANOVA/Design of Experiments, Spring 2011.
- Grader. STA4702/5707 Applied Multivariate Analysis, Spring 2011.
- Grader. STA5326 Distribution Theory, Fall 2009.

Dissertation Committee Chair

- Sajith Priyankara. Mathematics (Statistics), Texas Tech University.
- Chathuri Perera. Mathematics (Statistics), Texas Tech University.
- Dulanjalee Karunaratne. Mathematics (Statistics), Texas Tech University.
- Thilini Jayasinghe. Mathematics (Statistics), Texas Tech University.
Defended June 14, 2022.
Soon to be an Assistant Professor at University of Dayton.
- Dong Xu. Mathematics (Statistics), Texas Tech University.
Defended June 22, 2021.
Currently a Postdoc at Suzhou University.
- Mai Dao (Co-Chair). Mathematics (Statistics), Texas Tech University.
Co-Chairs: Dr. Min Wang and Dr. Souparno Ghosh
Defended March 1, 2021.
Currently an Assistant Professor at Wichita State University.
- Yuan Qiu. Mathematics (Statistics), Texas Tech University.
Defended July 6, 2020.
- Benoit Ahanda. Mathematics (Statistics), Texas Tech University.
Defended May 17, 2018.
Currently an Assistant Professor at Bradley University.
- Dhanamalee Bandara. Mathematics (Statistics), Texas Tech University.
Defended March 23, 2018.
Currently an Assistant Professor at University of Wisconsin-Green Bay.
- Iresha Premarathna. Mathematics (Statistics), Texas Tech University.
Defended June 12, 2017.
Currently an Associate Professor at Minnesota State University.
- Chalani Prematilake. Mathematics (Statistics), Texas Tech University.
Co-chair: Dr. Magdalena Toda
Defended May 27, 2016.
Currently an Assistant Professor at East Carolina University.
- Lakraj Gamage (Co-Chair). Mathematics (Statistics), Texas Tech University.
Chair: Dr. Frits Ruymgaart
Defended October 14, 2015.
Currently a Senior Lecturer at the University of Colombo.

Masters Committee Chair

- Tony Perez, Statistics, Texas Tech University. Defended April 25, 2022.
- Jason Bailey, Mathematics, Texas Tech University. Defended October 15, 2021.
- Geethanjalee Mudunkotuwa, Statistics, Texas Tech University. Defended June 30, 2021.
- Sangam Pangani, Statistics, Texas Tech University. Defended April 26, 2021.
- Ram Joshi. Statistics, Texas Tech University. Defended March 22, 2019.
- Megan Mereweather. Statistics, Texas Tech University. Defended November 20, 2017.
- Yiling Qian. Statistics, Texas Tech University. Dfended November 17, 2017.
- Yumin Xie. Statistics, Texas Tech University. Defended July 7, 2017.
- Quinn Pearce. Statistics, Texas Tech University. Defended April 24, 2017.
- Yang Cai. Statistics, Texas Tech University. Defended November 21, 2016.
- Lewis Owens. Statistics, Texas Tech University. Defended November 21, 2016.
- Monir Uz Zaman. Statistics, Texas Tech University. Defended November 17, 2016.
- Mengmeng Guo. Statistics, Texas Tech University. Defended July 5, 2016.

- Hong Li. Statistics, Texas Tech University. Defended July 5, 2016.
- Tianjao Yang. Statistics, Texas Tech University. Defended June 24, 2016.
- Sara Biesiadny. Statistics, Texas Tech University. Defended March 28, 2016.
- Qing Xu. Statistics, Texas Tech University. Completed April 30, 2015.
- Priya Champaneri. Statistics, Texas Tech University. Completed April 17, 2015.
- Jonathan Adams. Statistics, Texas Tech University. Defended March 9, 2015.
- Cahit Polat. Mathematics, Texas Tech University. Completed November 14, 2014.
- Rabab Mohamed. Statistics, Texas Tech University. Completed November 14, 2014.
- Dhanamalee Bandara. Statistics, Texas Tech University. Completed November 13, 2014.
- Ziniu Yu. Statistics, Texas Tech University. Completed July 7, 2014.
- Iresha Premarathna. Statistics, Texas Tech University. Completed April 15, 2014.
- Benoit Ahanda. Statistics, Texas Tech University. Completed April 19, 2013.
- Jeffrey Zheng. Statistics, Texas Tech University. Completed April 11, 2013.

Undergraduate Honors Thesis Advisor

- Mai Dao. Texas Tech University. Completed May, 2016.

Undergraduate Research Advisor

- Kathleen Hill. Oklahoma Baptist University. 2022-
- Vardan Martirosyan. University of California, Santa Barbara. 2022-
- Edward Smith. St. Lawrence University. 2022-
- Brittany Alexander. Texas Tech University. 2015 – 2018.

Dissertation Committee Service

- Chathuri Sandamali. Mathematics, Texas Tech University.
- Sithma Jayawardena. Mathematics (Statistics), defended April 5, 2022. Texas Tech University.
- Ruwani Herath. Mathematics (Statistics), defended June 20, 2022. Texas Tech University.
- Nadeesha Jayaweera. Mathematics (Statistics), defended June 16, 2022. Texas Tech University.
- Nicholas Moore, defended June 3, 2022. Mathematics, Texas Tech University.
- Sachith Dassanayaka, defended May 4, 2022. Mathematics (Statistics), Texas Tech University.
- Isuru Dassanayake, defended June 25, 2021. Mathematics (Statistics), Texas Tech University.
- Basitha Hewa, defended June 24, 2021. Mathematics (Statistics), Texas Tech University.
- Malima Attapatu, defended June 21, 2021. Mathematics (Statistics), Texas Tech University.
- Saugato Rahman Dhruba, defended March 29, 2021. Electrical Engineering, Texas Tech University. (Dean's Representative).
- Masoud Norouzi Darabad, defended February 5, 2021. Chemical Engineering, Texas Tech University. (Dean's Representative).
- Lu Cheng, defended October 16, 2020. Chemistry, Texas Tech University. (Dean's Representative).
- Ahmed Belhad defended June 19, 2020. Mathematics (Statistics), Texas Tech University.
- Abdul Malik, defended June 15, 2020. Chemistry, Texas Tech University. (Dean's Representative).
- Mengmeng Guo, defended June 7, 2019. Mathematics (Statistics), Texas Tech University.

- Jayan Ukwatta, defended October 17, 2018. Chemistry, Texas Tech University. (Dean's Representative).
- Pansujee Dissanayaka, defended October 16, 2018. Mathematics (Statistics), Texas Tech University.
- Sanjeewa Karunarathna, defended March 28, 2018. Mathematics (Applied Mathematics), Texas Tech University.
- Suranga Gunerathne, defended October 18, 2017. Civil Engineering, Texas Tech University. (Dean's Representative).
- Pratheepa Jeganathan, defended June 22, 2016. Mathematics (Statistics), Texas Tech University.
- Shiyue Zhou, defended March 29, 2016. Chemistry, Texas Tech University. (Dean's Representative).
- Amali Dassanayake, defended October 17, 2014. Mathematics (Statistics), Texas Tech University.
- Alin Tomoiaga, defended October 6, 2014. Business Statistics, Texas Tech University.
- Xiaozhen Xue, defended July 15, 2014. Computer Science, Texas Tech University. (Dean's Representative).
- Cong Cui, defended May 27, 2014. Mathematics (Statistics), Texas Tech University.
- Scott Smith, defended May 22, 2014. Mathematics (Statistics), Texas Tech University.
- Hemalika Abeysundara, defended May 21, 2014. Mathematics (Statistics), Texas Tech University.
- Yulei Pang, defended May 19, 2014. Mathematics (Statistics), Texas Tech University.
- Sridharan Kamalakannan, defended October 19, 2012. Electrical Engineering, Texas Tech University. (Dean's Representative).
- Indika Wickramasinghe, defended June 18, 2012. Mathematics (Statistics), Texas Tech University.
- Jonathaniel Principe, defended Spring 2012. Agricultural Economics, Texas Tech University.

Masters Committee Service

- Ibrahim Lawal, defended April 30, 2020. Statistics, Texas Tech University.
- Himali Seneviratne, defended April 26, 2020. Statistics, Texas Tech University.
- Jennifer Wang, defended October 16, 2020. Statistics, Texas Tech University.
- Tung Nguyen, defended June 22, 2020. Statistics, Texas Tech University.
- Brooke Sanders, defended October 17, 2019. Mathematics, Texas Tech University.
- Desi Toupin, defended April 19, 2019. Mathematics, Texas Tech University.
- Ying Teng, defended February 21, 2019. Statistics, Texas Tech University.
- Qiannan Zhai, defended July 13, 2018. Statistics, Texas Tech University.
- Joseph Heinrich, defended July 10, 2017. Mathematics, Texas Tech University.
- Pansujee Dissanayaka, defended April 6, 2016. Statistics, Texas Tech University.
- Gouthaman Tharmathasan, defended March 25, 2016. Statistics, Texas Tech University.
- Taek Hun Jang, defended November 16, 2015. Statistics, Texas Tech University.
- Jonathan Doerzbacher, defended October 16, 2015. Statistics, Texas Tech University.
- Haibo Zhang, defended June 25, 2015. Mathematics, Texas Tech University.
- Joshua Mayer, defended October 17, 2014. Statistics, Texas Tech University.
- Yu Hua, defended October 16, 2014. Statistics, Texas Tech University.
- Bo Zhang, defended July 9, 2014. Statistics, Texas Tech University.
- Xu Niu, defended April 23, 2014. Statistics, Texas Tech University.

- Roshan Thilakarathne, defended November 13, 2013. Statistics, Texas Tech University.
- Bo Li, defended September 13, 2013. Statistics, Texas Tech University.
- Pratheepa Jeganathan, defended June 12, 2013. Statistics, Texas Tech University.
- Catherine Granberry, defended Fall 2012. Statistics, Texas Tech University.
- Xianwen Zhang, defended Fall 2012. Statistics, Texas Tech University.
- Li Zou, defended October 15, 2012. Statistics, Texas Tech University.
- Cahit Polat, defended June 28, 2012. Statistics, Texas Tech University.
- Divya Keshemoni, defended June 19, 2012. Statistics, Texas Tech University.
- Daniel Salas, defended Fall 2011. Forensic Science, Texas Tech University.

CONFERENCES
ATTENDED

- 2023 Alamo Symposium in Statistics. San Antonio, TX.
- 2022 Joint Statistical Meetings. Washington, DC.
- 2021 Conference of Texas Statisticians. Virtual, hosted by Texas Tech University.
- 18th Red Raider Mini-Symposium. Texas Tech University, Lubbock, TX.
- ASA/FSU Recent Advances in Statistical Analysis of Imaging Data Workshop. Virtual Meeting.
- 2020 Joint Statistical Meetings. Virtual Meeting.
- 2019 Joint Statistical Meetings. Denver, Colorado.
- TGDA at OSU TRIPODS Center Workshop: Structure in the Micro-world. Columbus, OH.
- Conference of the 60th Anniversary of the FSU Department of Statistics. Tallahassee, FL
- International Congress of Mathematicians 2018. Rio de Janeiro, Brazil.
- 4th Conference of the International Society of Nonparametric Statistics. Salerno, Italy.
- 2018 Conference of Texas Statisticians. University of the Incarnate Word, San Antonio, TX.
- 2018 AMS Spring Central Sectional Meeting. Ohio State University, Columbus, OH.
- Teaching with Technology Statistics Summit. New Orleans, LA.
- 2017 Joint Statistical Meetings. Baltimore, Maryland.
- International Conference on Computational Modeling and Simulation 2017. Colombo, Sri Lanka.
- SRCOS 2016 Summer Research Conference. Bentonville, AR.
- 2016 Conference of Texas Statisticians. Trinity University, San Antonio, TX.
- 15th Annual Red Raider Mini-Symposium. Texas Tech University, Lubbock, TX.
- 2015 Conference of Texas Statisticians. University of Texas at Austin, Austin, TX.
- 2014 Joint Statistical Meetings. Boston, Massachusetts.
- 2014 AMS Spring Central Sectional Meeting. Texas Tech University. Lubbock, TX.
- 2014 Conference of Texas Statisticians. University of Texas at Dallas. Dallas, Texas.
- MBI Workshop on Morphogenesis, Regeneration, and the Analysis of Shape, 2014. Ohio State University. Columbus, Ohio.
- 2014 Joint Mathematics Meetings. Baltimore, Maryland.
- 2013 Joint Statistical Meetings. Montreal, Quebec.
- 12th Annual Red Raider Mini-Symposium. Texas Tech University, Lubbock, TX.
- MBI Current Topics Workshop: Statistics, Geometry, and Combinatorics on Stratified Spaces Arising from Biological Problems, 2012. Ohio State University. Columbus, Ohio.
- SAMSI 2010-2011 Analysis of Object Data Program Transition Workshop, Research Triangle Park, NC
- SAMSI 2010-2011 Analysis of Object Data Program Opening Workshop, Research Tri-

angle Park, NC

- SRCOS 2010 Summer Research Conference, Virginia Beach, Virginia.
- 2010 Florida ASA Chapter Meeting, Florida State University, Tallahassee, Florida.
- The Department of Statistics 50th Anniversary, Florida State University, Tallahassee, Florida. April 17-18, 2009.
- 2009 Florida ASA Chapter Meeting, The University of Central Florida, Orlando, Florida.
- 2008 Florida ASA Chapter Meeting, The University of Florida, Gainesville, Florida.

PROPOSALS
SUBMITTED

Long, Katharine (PI), Howle, Vicki (Co-PI), Tewolde (co-PI), and **Ellingson, Leif** (Co-PI), “Clinical Infrared Thermography and Physic-Informed Machine Learning for Monitoring Treatment Response in Breast Cancer.” Submitted to the Mark Foundation. \$249,947, 2021.

Ghosh, Souparno (PI), Pal, Ranadip (Co-PI), **Ellingson, Leif** (Co-PI), Moskal, Barb (Co-PI), “Impactful Decision Making: Using Machine Learning for Data Integration, Educational Research and Student Support.” Submitted to National Center for Education Research Institute of Education Sciences in July 2020.

Wang, Chunmei (PI), Allen, Linda (Co-PI), Ibraguimov, Akif (Senior Personnel), Toda, Magda (Senior Personnel), and **Ellingson, L.** (Senior Personnel). “REU site: Research Experiences for Undergraduates in Mathematical, Statistical and Computational Methods on Complex Problems in the Life Sciences.” Submitted to NSF-DMS Workforce Program in August 2019.

L. Ellingson. “Using Object Data for Modern Multidisciplinary Data Analysis” Submitted to the NSF-HDR I-DIRSE-IL in March 2019.

L. Ellingson (PI) and J. Su (Co-PI). “Statistical Inference and Modeling of Object Data” Submitted to the NSF-DMS in December, 2018. \$344,684.

Chen, Yong (PI), Ancell, Brian C. (Co-PI), Cao, Guofeng (Co-PI), Dai, Dong (Co-PI), **Ellingson, Leif** (Co-PI). “BIGDATA: F: Collaborative Research: FASD: Fast Analysis for Scientific Discovery in the Era of Big Data.” Submitted to the NSF-BigData in March 2017. \$891,267.

Ellingson, L., Frias, T. “Texas Tech Summer Math Academy (SuMAc).” Submitted to the Elsevier mathematics funding program. \$4000 in Fall 2016.

L. Ellingson. “Statistical Modeling and Classification of Protein Binding Sites via Object Data Analysis.” Submitted to the NSF-DMS in November 2016 . \$391,416.

L. Ellingson. “CAREER: Statistical Modeling and Classification of Protein Binding Sites via Object Data Analysis.” Submitted to the NSF-CAREER in July 2016 . \$401,272.

Chen, Yong (PI), Ancell, Brian C. (Co-PI), Cao, Guofeng (Co-PI), **Ellingson, Leif** (Co-PI). “SHF: Small: Fast Data Analysis for High Performance Computing Powered Scientific Discovery.” Submitted to the NSF-CCF in November 2015. \$497,898.

L. Ellingson. “Inference Methods for Object Data Analysis.” Submitted to the NSF-DMS in November 2015. \$197,341.

Ellingson, L., Ghosh, S., and Su, J. “15th Annual Red Raider Mini-Symposium: Spatial Inference on Manifolds.” Submitted to MBI in July 2015. \$5,000.

L. Ellingson. “Approximation and Estimation in Planar Shape Analysis of Digital Images.” Submitted to the NSA-MSP in October 2014. \$39,807

Chen, Yong (PI), Ancell, Brian C. (Co-PI), Cao, Guofeng (Co-PI), **Ellingson, Leif** (Co-PI). “BIGDATA: F: CSD: DKM: FASD: Fast Analysis for Scientific Discovery.” Submitted to the NSF-BIGDATA in June 2014. \$796,126

L. Ellingson. “Statistical analysis of shape data from digital images.” Submitted to the NSA-MSP in October 2013.

Ruymgaart, Frits (PI), **Ellingson, Leif** (Co-PI). “Application of perturbation theory to functional data analysis.” Submitted to the NSF-DMS in November 2012.

Chen, Yong (PI), **Ellingson, Leif** (Co-PI), Ancell, Brian C. (Senior personnel). “Fast Data Analysis with Integrated Statistical Metadata in Scientific Datasets.” Submitted to the NSF CNS - Big Data Science & Engineering in July 2012.

Trindade, Alex (PI), Long, Kevin (Co-PI), **Ellingson, Leif (Co-PI)**. “12th Annual Red Raider Mini-Symposium: Computational and theoretical Challenges in Interdisciplinary Predictive Modeling Over Random Fields.” Submitted to NSF in Fall 2011.

PROFESSIONAL
MEMBERSHIPS

American Statistical Association

- North Texas Chapter
- Florida Chapter

Fall 2007 - Present

Fall 2021 - Present

Fall 2007 - Fall 2011

Institute of Mathematical Statistics

Fall 2010 - Present

Bernoulli Society

January 2014 - Present

American Mathematical Society

January 2014 - December 2014

OUTREACH
ACTIVITY

Judge, Project Lead the Way at Monterey High School. April 11, 2017.

- Judged STEM projects for senior high school students.

Featured Professor, Texas Tech University Summer Math Academy. “Digital Image Analysis”. June 17 - June 28, 2013 and June 9 - June 20, 2014

- Developed lectures, activities, and a project for high school students about combining mathematical and statistical concepts with computer programming to the analysis of digital images. Delivered lectures to students on campus and at remote sites throughout the region.

Lecturer, Texas Tech University, PRISM Summer Research Weeks. July 29 - July 31, 2014.

- Developed lectures, daytime activities, and homework assignments for students in the PRISM program. Delivered lectures to students.

DEPARTMENTAL
SERVICE

Department Committee Membership

- Third Year Review Committee: Spring 2022, Spring 2023.
- Executive Committee: Fall 2021 - Present
- Hiring Committee: Fall 2018 - Spring 2019, Fall 2019 - Summer 2020, Fall 2021.
- Graduate Committee: Fall 2015 - Fall 2017.
- Statistics Hiring Committee: Fall 2015 - Spring 2016.
- Undergraduate Committee: Fall 2013 - Summer 2015.

- Statistics Hiring Subcommittee: Spring 2015.

Research Experiences for Undergraduates Program

- Lead Organizer and Project Mentor: Spring 2022 - Present

Conference Co-organizer

- 2021 Conference of Texas Statisticians. October 9, 2021. Virtual. With Fangyuan Zhang, Jay Conover, Alex Trindade, and Ruiqi Liu.
- Fifteenth Annual Red Raider Mini-Symposium: “Spatial Inference on Manifolds.” November 6-7, 2015. Texas Tech University, Lubbock, TX. With Souparno Ghosh and Jingyong Su.
- Twelfth Annual Red Raider Mini-Symposium: “Computational and Theoretical Challenges in Interdisciplinary Predictive Modeling Over Random Fields.” October 12, 2012. Texas Tech University, Lubbock, TX. With Alex Trindade and Katharine Long.

South Plains Mathematics Fellow Program

- Served as a mentor for an undergraduate mathematics student. November 2016 - Spring 2018.

UNIVERSITY
SERVICE

Committee member for:

- Rawls College of Business Endowed Professorship Review Committee: May 2020.

Judge for:

- Graduate Student Poster Competition, Department of Chemistry and Biochemistry. August, 2019.

PROFESSIONAL
SERVICE

Session Chair for:

- 4th Conference of the International Society of Nonparametric Statistics. Salerno, Italy. June 15, 2018.
- International Conference on Computational Modeling and Simulation 2017, Colombo, Sri Lanka. May 17-18, 2017.

Journal Referee for:

- Annals of Applied Statistics, Annals of Statistics, Biometrika, Communications in Statistics - Computation and Simulation, Communications in Statistics - Theory and Methods, Electronic Journal of Statistics, Journal of the American Statistical Association, Journal of Mathematical Imaging and Vision, Journal of Multivariate Analysis, Journal of the Royal Statistical Society-Series B, Pattern Recognition Letters, PLoS ONE, Scandinavian Journal of Statistics, Stat, Statistics Papers

Grant Proposal Reviewer for:

- National Science Foundation (NSF), 2021
- Deutsche Forschungsgemeinschaft (DFG), 2019

Book Referee for:

- Chapman and Hall/CRC Press

Conference Referee for:

- International Conference of Pattern Recognition 2018, International Conference of Pattern Recognition 2016, Diff-CV Workshop 2015, International Conference of Pattern Recognition 2014

Session Organizer for:

- AMS 2014 Spring Central Sectional Meeting, “Special Session on Statistics on Manifolds”. Texas Tech University, Lubbock, TX. April 1-13, 2014.

Committee Member for:

- Cengage Statistics Advisory Board. January 2021-Present.

- COMPUTER SKILLS
- MATLAB, R, some SAS, and some experience with IDL
 - Applications: \LaTeX , common Mac/Windows databases, spreadsheet, and presentation software
 - Operating Systems: MacOS, Windows.