

Souparno Ghosh-Curriculum Vitae

Department of Statistics, University of Nebraska-Lincoln.

Hardin Hall North Wing, Lincoln, NE 68583-0963, USA.

Email: sghosh5@unl.edu; Phone: 402-472-2084

Google Scholar: <https://scholar.google.com/citations?user=Lcg-sRwAAAAAJ&hl=en&oi=ao>

Academic Positions

August 2025– Present	Professor Department of Statistics. University of Nebraska-Lincoln.
August 2019–July 2025	Associate Professor Department of Statistics. University of Nebraska-Lincoln.
September 2018–August 2019	Associate Professor Department of Mathematics and Statistics. Texas Tech University.
September 2012– August, 2018	Assistant Professor Department of Mathematics and Statistics. Texas Tech University.

Other Appointments

July 2021, 2022, 2024	Visiting faculty Indian Institute of Management, Rohtak, India
August 2009–July, 2012	Postdoctoral Associate Department of Statistical Science, Duke University, Durham, NC Mentor: Dr. Alan Gelfand.
September 6–October 7, 2011	Visiting Scientist National Center for Atmospheric Research, Boulder, Colorado.

Professional Preparation

Degree	Major/ Area	Year	Institution
Ph.D.	Statistics	2009	Texas A&M University
M.Sc.	Statistics	2004	University of Calcutta, India
B.Sc. (Honors)	Statistics	2002	University of Calcutta, India

Research Grants

Current

RESEARCH-PGR TRACK: Genetic basis of developmentally regulated heat stress response in rice

Funding agency: NSF

Location: UNL

Period covered: September 1, 2025 – August 30, 2028

Amount: \$ 600,000

Role: Co-PI (PI: H. Walia, other Co-PI: Hongfeng Yu)

Status: Current

Conference: International Indian Statistical Association Annual Conference 2025

Funding agency: NSF

Location: UNL

Period covered: June 1, 2025 – December 31, 2025

Amount: \$ 600,000

Role: Sole PI

Status: Current

NSF and the Japan Society for the Promotion of Science's pilot Supplemental Research Collaboration Opportunity in Japan: Supplement to *Conference: International Indian Statistical Association Annual Conference 2025*

Funding agency: NSF and Japan Society for the Promotion of Science

Location: UNL and Kyoto University, Japan

Period covered: June 1, 2025 – December 31, 2025

Amount: \$3,845 + JPY 256000

Role: PI

Status: Current

USDA ARD Hatch Multistate Enhanced Program: High-definition spatiotemporal phenomics and transcriptomics of developing maize kernel under heat stress

Funding agency: USDA Agricultural Research Division

Location: University of Nebraska-Lincoln

Period covered: October 1, 2022 – September 30, 2026

Amount: \$200,000

Role: Co-PI (PI: H. Walia)

Status: Current

REU Supplement to FET: Small: Machine learning models for function-on-function regression

Funding agency: NSF

Location: University of Nebraska-Lincoln

Period covered: October 1, 2024 – September 30, 2025

Amount: \$20,000

Role: Sole PI

Status: Current

NSF 2007418: Collaborative Research: FET: Small: Machine learning models for function-on-function regression

Funding agency: NSF

Location: University of Nebraska-Lincoln

Period covered: October 1, 2020 – September 30, 2025 (no-cost extension)

Amount: \$120,000

Role: PI (other PI: R.Pal)

Status: Current

Concluded

NCI-DOE IMPROVE: Therapeutic response prediction model evaluation

Funding agency: Leidos Biomedical Research Inc.

Location: University of Nebraska-Lincoln

Period covered: August 1, 2022 – August 31, 2025

Amount: \$94,752

Role: Subcontract PI (PI: R.Pal)

Status: Concluded

R01GM122084-01: Framework for functional regression with applications to prediction and analysis of drug response curves

Funding agency: NIH

Location: Texas Tech University

Period covered: August 1, 2016 – July 31, 2019 (No-cost Extension: July 31, 2021)

Amount: \$644,910

Role: Co-PI (PI: R.Pal)

Status: Concluded

Dietary physiology of dogs and their relationships to their nearest wild relatives, wolves, and coyotes

Funding agency: Emma Barnsley Foundation

Location: Texas Tech University

Period covered: January 1, 2018 – December 31, 2018
Amount: \$7,500
Role: Co-PI (PI: J. Baccus, other Co-PIs: P. Gipson, P. Khandelwal)
Status: Concluded

Status of swift foxes in Texas panhandle

Funding agency: Emma Barnsley Foundation
Location: Texas Tech University
Period covered: January 1, 2016 – December 31, 2016
Amount: \$10,000
Role: PI (Co-PI: P. Gipson)
Status: Concluded

Innovative actions to help swift foxes flourish on the plains of west Texas

Funding agency: College of Arts and Science, Texas Tech University (cost sharing with TX-NRCS)
Location: Texas Tech University
Period covered: May 1, 2013 – April 30, 2016
Amount: \$10,000
Role: Co-PI (PI: P. Gipson, other Co-PIs: R. Cox)
Status: Concluded

USDA-NRCS-TX-13-01: Innovative actions to help swift foxes flourish on the plains of west Texas

Funding agency: Texas Natural Resources Conservation Service
Location: Texas Tech University
Period covered: May 1, 2013 – April 30, 2016 (extended until May 19, 2017)
Amount: \$73,541
Role: Co-PI (PI: P. Gipson, other Co-PIs: R. Cox)
Status: Concluded

Honors and Awards

- College of Arts and Sciences Excellence in Research Award (2017). College of Arts & Science, Texas Tech University.
- Dayawansa Memorial Research Excellence Award (2017, 2016). Department of Mathematics & Statistics, Texas Tech University.
- NSF Travel Award (2015). To attend Multivariate Models in Ecology Workshop. SAMSI, Research Triangle Park, North Carolina, March 2–4, 2015.

- NSF Travel Award (2014). To attend Mathematical and Statistical Ecology Workshop. SAMSI, Research Triangle Park, North Carolina, August 18–22, 2014.
- NSF Young Researcher Travel Award, (2012). To attend International Conference on Advances in Interdisciplinary Statistics and Combinatorics. Greensboro, North Carolina, October 5–6, 2012.
- ISBA Young Researcher Travel Award, (2012). To attend International Society for Bayesian Analysis meeting at Kyoto, Japan, June 26–30, 2012.
- NSF Research in Statistics in the Atmospheric and Oceanic Sciences Travel Award, (2011). To attend 2012 Joint Statistical Meetings, San Diego, CA, July 28–August 2, 2012.
- Emanuel Parzen Research Award for Outstanding Graduate Student, (2009). Department of Statistics, Texas A&M University.
- IMS Laha Travel Award, (2009). To attend the 2009 Joint Statistical Meetings/IMS Annual Meeting, Washington D.C., August 2–6, 2009.
- Boyd Harshbarger SRCOS Travel Award, (2009). To attend, SRCOS- SRC, Jekyll Island, Georgia, June 7–10.
- ASA Travel Award, (2008). To attend SRCOS- SRC, Charleston, South Carolina, June 8–11.
- R. L. Anderson Student Paper Award, (2008). SRCOS- SRC, Charleston, South Carolina.
- Valedictorian, Class of M.Sc. (2004). Department of Statistics, University of Calcutta, India.

Current Research interest

- Machine Learning.
- Bioinformatics.
- Statistical Computation.
- Bayesian Hierarchical Modeling.
- Point Processes.
- Spatial Statistics.

Advising

Postdoctoral

1. Dr. Aminur Rahman: 2017-2019
Main area: Models for drug diffusion
Current Affiliation: Senior scientist at ReynKo, Inc., WA.

Current Doctoral Students

2. Enakshy Dutta (UNL)
Tentative dissertation title: *Mixed Effect Logic Regression for Meta Analysis*.
Expected Completion: Dec 2026.
3. Yifan Wu (UNL)
Tentative dissertation title: *Deep Kernel Learning based Model Averaging*.
Expected Completion: August 2026.
4. Gayara Fernando (UNL)
Tentative dissertation title: *Inferential Procedures for Count-by-Regression Deep Learners*.
Expected Completion: December 2025.

Past Students

5. Sarah Aurit: 2025 (Ph.D., UNL)
Dissertation title: *Detection of Activity Cliffs Produced by Anti-Cancer Drugs and an Algorithm for Reliable Predictions in Affected Areas*.
Affiliation: Senior Data Analyst, Optum (Current).
6. James Clothier: 2024 (Ph.D., UNL)
Dissertation Title: *Variable Selection in Metric Learning*
Affiliation: Statistical Consultant for the College of Agriculture and Life Sciences at NCSU, NC (Current).
7. Ved Piyush: 2023 (Ph.D., UNL)
Dissertation Title: *A Generalized Stacking Method Using Matrix Ensemble Kalman Filter-Based Multi-Arm Neural Network*
Affiliation: Senior Data Scientist at IBM, NY (Current).
8. Ramesh Kesawan: 2022 (Ph.D., UNL)
Dissertation Title: *Methods to Incorporate Global Information in Local Models to Offset Sample Size Constraints*.
Affiliation: Senior Associate Data Scientist at Travelers Insurance, CT (Current).
9. Chamila Perera: 2019 (Ph.D., Texas Tech)
Dissertation Title: *Coherent multi-task feature selection and prediction from pharmacogenomics databases and the linearly decreasing stress Weibull (LDSWeibull): A new Weibull-like distribution*
Affiliation: Senior Statistician in the Cancer Data Science program at University of Michigan- Ann Arbor (Current).

10. Purna S. Gamage: 2018 (Ph.D., Texas Tech)
 Dissertation Title: *A model based data fusion algorithm using Bayesian hierarchical modeling for density estimation of rare species*
 Affiliation: Assistant Teaching Professor in the Data Science and Analytics program at Georgetown U. (Current)
11. Quan Hoang: 2018 (Ph.D., Texas Tech)
 Dissertation Title: *Copula regression and robustness*
 Affiliation: Senior Data Analyst at CIC Data Mining & Analytics, Vietnam (Last known).
12. Joshua Mayer: 2017 (Ph.D., Texas Tech)
 Dissertation Title: *Modeling drug sensitivity: Variable selection, inference and prediction*
 Affiliation: Data Scientist at Genesis Financial Solutions, Portland, OR (Last known).
13. Katie Gerot: 2022 (Undergraduate Honors, UNL)
 Thesis title: *Split Classification Model for Complex Clustered Data*
 Affiliation: University of Minnesota (MS Student in Statistics)

Doctoral Committee member

1. Jiaqi Chen: Ph.D. Statistics, UNL, current.
2. Michael Grantham: Ph.D. Statistics, UNL, current.
3. Waqar Ali: Ph.D. Agronomy, UNL, current.
4. Aleena Chanda: Ph.D. Statistics, UNL, 2025.
5. Minal Khatri: Ph.D. Computer Science, UNL, 2023.
6. Fei Sha: Ph.D. Statistics, UNL, 2023.
7. Mai Dao: Ph.D. Mathematics, Texas Tech, 2021.
8. Saeed Moradi: Ph.D. Civil Engineering, Texas Tech, 2020.
9. Mehdi Jamali: Ph.D. Civil Engineering, Texas Tech, 2019.
10. Raziur Rahman: Ph.D. Electrical Engineering, Texas Tech, 2019.
11. Kevin Matlock: Ph.D. Electrical Engineering, Texas Tech, 2018.
12. Dhanamalee Bandara: Ph.D. Mathematics, Texas Tech, 2018.
13. Carlos De Niz: Ph.D. Electrical Engineering, Texas Tech, 2018.

14. Kimberley Wooten: Ph.D. Environmental Toxicology, Texas Tech, 2017.
15. Girmay Berhie: Ph.D. Architecture, Texas Tech, 2016.
16. Alin Tomoiaga: Ph.D. Business Statistics, Texas Tech, 2014.

Masters Committee member

17. Hasibur Rahman: MS Statistics, UNL, Current.
18. Francis Marfo: MS Statistics, UNL, 2025.
19. Oluwafunmibi Fasanya: MS Statistics, UNL, 2025.
20. Ramesh Kanna Mathivanan: MS Agronomy, UNL, 2024.
21. Bipin Poudel: MS Statistics, UNL, 2024.
22. Taek Hyun Jang: MS Statistics, Texas Tech, 2015.
23. Ziniu Wu: MS Statistics, Texas Tech, 2014.
24. Cahit Polat: MS Statistics, Texas Tech, 2014.
25. Adam McCowan: MS Statistics, Texas Tech, 2013.

Publications (in reverse chronological order)

Book

1. Pal, R., **Ghosh, S.** (2025+) *Machine Learning for Drug Response Prediction*. Springer (Under contract)

Refereed Journal Articles

2. Mao, Y *, **Ghosh, S.**, and Pal R. (2025). AdapToR: Adaptive Topological Regression for quantitative structure-activity relationship modeling. *Journal of Cheminformatics*, (Accepted)
3. Chopra, Y. *, Xie, X., Clothier, J. *, **Ghosh, S.**, Yu, H., Walia, H., and Sattler, S. E. (2025). Hyperspectral imaging to characterize the vegetative tissue biochemical changes in response to water deficit conditions in sorghum (*Sorghum bicolor*). *Frontiers in Plant Science*, **16**, 1515998, doi: <https://doi.org/10.3389/fpls.2025.1515998>.

*Student author

4. Dustin, D., **Ghosh, S.**, and Clarke, B. (2025). Testing for the Important Components of Predictive Variance. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, **18**, e70029, doi: <https://doi.org/10.1002/sam.70029>.
5. Zhang, R., Nolte, D.*, Sanchez-Villalobos, C.*, **Ghosh, S.**, and Pal, R. (2024). Topological Regression in Quantitative Structure-Activity Relationship Modeling. *Nature Communications*, **15**, 5072, doi: <https://doi.org/10.1038/s41467-024-49372-0>.
6. Rodene, E., Fernando, G. D.*, Piyush, V.*, Ge, Y., Schnable, J. C., **Ghosh, S.**, and Yang, J. (2024). Image Filtering to Improve Maize Tassel Detection Accuracy Using Machine Learning Algorithms. *Sensors*, **24**, 2172, doi: <https://doi.org/10.3390/s24072172>.
7. Ma, Z., Han, Z., **Ghosh, S.**, Wu, L., and Wang, M. (2024) Sparse Bayesian variable selection in high dimensional logistic regression models with correlated priors. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, **17**, doi: <https://doi.org/10.1002/sam.11663>
8. Bandara, D., Ellingson, L., **Ghosh, S.**, and Pal, R. (2023). A Modified Neighborhood Hypothesis Test for Population Mean in Functional Data. *Journal of Agricultural, Biological and Environmental Statistics*, doi: <https://doi.org/10.1007/s13253-023-00549-y>
9. Nolte, D.*, Bazgir, O., **Ghosh, S.**, and Pal, R. (2023) Federated Learning Framework integrating REFINED CNN and Deep Regression Forests. *Bioinformatics Advances*, **3** vbad036, doi: <https://doi.org/10.1093/bioadv/vbad036>
10. Dao, M.*, Wang, M. and, **Ghosh, S.** (2022). A novel Bayesian method for variable selection and estimation in binary quantile regression. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, **15**, 766–780, doi: <https://doi.org/10.1002/sam.11591>.
11. Zhang, R.*, **Ghosh, S.**, and Pal, R. (2022). Predicting binding affinities of emerging variants of SARS-CoV-2 using spike protein sequencing data: Observations, caveats and recommendations. *Briefings in Bioinformatics*, **23**, bbac128, doi: <https://doi.org/10.1093/bib/bbac128>.
12. Dao, M.*, Wang, M., **Ghosh, S.**, and Ye, K. (2022). Bayesian variable selection and estimation in quantile regression using a quantile-specific prior. *Computational Statistics*, **37**, 1339 – 1368.
13. Alemayehu, S.*, Nejat, A., Ghebrab, T., and **Ghosh, S.** (2021). A Multivariate Regression Approach Towards Prioritizing BIM Adoption Barriers in the Ethiopian Construction Industry. *Engineering, Construction and Architectural Management*, doi: 10.1108/ECAM-02-2021-0165.

14. Bazgir, O.* , **Ghosh, S.**, and Pal, R. (2021). Investigation of REFINED CNN ensemble learning for anti-cancer drug sensitivity prediction. *Bioinformatics*, **37**, i42–i50. doi: 10.1093/bioinformatics/btab336.
15. Bazgir, O.* , Nolte, D.* , Dhruba, S. R.* , Li, Y., Li, C., **Ghosh, S.**, Pal, R. (2021). Active shooter detection in multiple-person scenario using RF based Machine Vision, *IEEE Sensors Journal*, **21**, 3609–3622. doi: 10.1109/JSEN.2020.3028362.
16. Kara, E.* , Rahman, A., Aulisa, E., **Ghosh, S.** (2020). Tumor ablation due to inhomogeneous anisotropic diffusion in generic three-dimensional topologies. *Physical Review E*, **102**, 062425.
17. Jamali, M.* , Moradi, S.* , Cao, G., Nejat, A., **Ghosh, S.**, Jin, F. (2020). Social Media Data and Housing Recovery Following Extreme Natural Events. *International Journal of Disaster Risk Reduction*, **51**, 101788
18. Moradi, S.* , Nejat, A., Hu, D., **Ghosh, S.** (2020). Perceived neighborhood: Preferences versus actualities. *International Journal of Disaster Risk Reduction*, **51**, 101824.
19. Bazgir, O.* , Rahman, R.* , Dhruba, S. R.* , **Ghosh, S.**, and Pal, R. (2020). Representation of features as images with neighborhood dependencies for compatibility with convolutional neural networks. *Nature Communications*, **11**, 1–13
20. Mayer, J.* , Moradi, S.* , Nejat, A., **Ghosh, S.**, Cong, Z., and Liang, D. (2020). Drivers of Post-Disaster Relocations: The Case of Moore and Hattiesburg Tornadoes. *International Journal of Disaster Risk Reduction*, **49**, 101643.
21. Berlow, N. et al. (2019). Probabilistic modeling of personalized drug combinations from integrated chemical screen and molecular data in sarcoma. *BMC Cancer*, **19**, 593.
22. Nejat, A., Javid, R. J.* , **Ghosh, S.**, and Moradi, S.* (2019). A Spatially Explicit Model of Post-Disaster Housing Recovery. *Wiley Computer Aided Civil and Infrastructure Engineering*, **35**, 151–160.
23. Hoang, Q.* , Khandelwal, P., and **Ghosh, S.** (2019). Robust Predictive Model using Copulas. *Data-Enabled Discovery and Applications*, **3**, 8.
24. Rahman, R.* , Dhruba, S. R.* , **Ghosh, S.**, and Pal, R. (2019). Functional Random Forests with applications in dose response predictions. *Scientific Reports*, **9**, 1–14.
25. Dhruba, S. R.* , Rahman, A., Rahman, R.* , **Ghosh S.** and Pal, R (2019). Recursive model for dose-time responses in pharmacological studies. *BMC Bioinformatics*, **20**, 317.

26. Matlock, K.* , Rahman, R.* , **Ghosh, S.**, and Pal R. (2019). Sstack: An R Package for Stacking with Applications to Scenarios Involving Sequential Addition of Samples and Features. *Bioinformatics*, **35**, 3143–3145.
27. Rahman, A., **Ghosh, S.**, and Pal, R. (2018) Modeling of drug diffusion in a solid tumor leading to tumor cell death. *Physical Review E*, *96*, 062408.
28. Dhruva, S. R.* , Rahman, R.* , Matlock, K.* , **Ghosh S.** and Pal, R (2018). Application of Transfer Learning for Cancer Drug Sensitivity Prediction. *BMC Bioinformatics*, **19**, 497.
29. Jamali, M.* , Nejat, A., **Ghosh, S.**, Jin, F. and Cao, G. (2018). Social media data and post-disaster recovery. *International Journal of Information Management*, **44**, 25–37.
30. Nejat, A., Moradi, S.* , and **Ghosh S.** (2018). Anchors of Social Network Awareness Index (ASNA-I): A Key to Modeling Post-disaster Housing Recovery. *Journal of Infrastructure Systems*, **25**, 04019004
31. Rahman, R.* , Dhruva, S. R.* , Matlock, K.* , De-Niz, C.* , **Ghosh, S.** and Pal, R. (2018) Evaluating the consistency of large scale pharmacogenomics studies. *Briefings in Bioinformatics*, *bby046*, <https://doi.org/10.1093/bib/bby046>
32. Mayer, J.?? , Rahman, R.* , **Ghosh, S.**, Pal, R. (2017). Sequential Feature Selection and Inference using Multivariate Random Forests. *Bioinformatics*, btx784.
33. Rahman, R.* , Matlock, K.* , **Ghosh, S.**, Pal, R. (2017). Drug Sensitivity Prediction using Heterogeneity Aware Random Forest. *Scientific Reports*, **7**, 11347.
34. Matlock, K.* , De Niz, C.* , Rahman, R.* , **Ghosh, S.**, and Pal, R. (2017). Investigation of Model Stacking for Drug Sensitivity Prediction. *BMC Bioinformatics*, **19**, 21–33.
35. Nejat, A., **Ghosh, S.** (2016). A LASSO Model of Post-disaster Housing Recovery: A Sandy Case Study. *ASCE Journal of Natural Hazards Review*, **17**, doi: 10.1061/(ASCE)NH.1527-6996.0000223.
36. **Ghosh, S.**, Zhu, K. Gelfand, A. E. and Clark, J. S. (2016) Joint Modeling of Climate Niches for Adult and Juvenile Trees. *Journal of Agricultural, Biological and Environmental Statistics*, **21**, 111–130.
37. Rahman, R.* , Haider, S.* , **Ghosh, S.**, Pal, R. (2015). Design of Probabilistic Random Forests with Applications to Anti-cancer Drug Sensitivity Prediction. *Cancer Informatics*, **14**, 57 - 73.
38. Haider, S.* , Rahman, R.* , **Ghosh, S.**, Pal, R. (2015). A Copula Based Approach for Design of Multivariate Random Forests for Drug Sensitivity Prediction. *PloS One*, **10**, e0144490.

39. **Ghosh, S.**, Bell, D. M, Clark, J. S., Gelfand, A. E. and Flikkema, P., (2014) Process Modeling for Soil Moisture Using Sensor Network Data. *Statistical Methodology*, **77**, 99–112.
40. Zhu K., Woodall C.W., **Ghosh S.**, Gelfand A.E., Clark J.S. (2013). Dual impacts of climate change: forest migration and turnover through life history. *Global Change Biology*, doi: 10.1111/gcb.12382.
41. Gelfand, A. E., **Ghosh, S.** and Clark, J. S. (2013) Scaling Integral Projection Models for Analyzing Size Demography. *Statistical Science*, **28**, 641–658.
42. **Ghosh, S.**, Gelfand, A. E. and Clark, J. S., (2012) Inference for Size Demography from Point Pattern Data using Integral Projection Models (with discussion). *Journal of Agricultural, Biological and Environmental Statistics*, **17**, 641–677.
43. **Ghosh, S.**, Gelfand, A. E., Zhu, K. and Clark, J. S., (2012) The k –ZIG: Flexible Modeling for Zero-inflated Counts. *Biometrics*, **68**, 878–885.
44. **Ghosh, S.**, Gelfand, A. E. and Mølhave, T. (2012) Attaching Uncertainty to Deterministic Spatial Interpolations. *Statistical Methodology* , **9**, 251–264.
45. Parzen, M., **Ghosh, S.**, Lipsitz, S., Sinha, D., Fitzmaurice, G. M., Ibrahim, J. G. and Mallick, B. K., (2011) A Generalized Linear Mixed Model for Longitudinal Binary Data with a Marginal Logit Link Function. *Annals of Applied Statistics*, **5**, 449–467.
46. **Ghosh, S.** and Mallick, B. K., (2011) A Hierarchical Bayesian Spatio-temporal Model for Extreme Precipitation Events. *Environmetrics* , **22**, 192–204.

Conference Proceedings (refereed)

47. Nolte, D*, **Ghosh, S.**, and Pal, R. (2024). Efficient Normalized Conformal Prediction and Uncertainty Quantification for Anti-Cancer Drug Sensitivity Prediction with Deep Regression Forests. In *46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Orlando, FL, USA. pp. 1-6, doi: 10.1109/EMBC53108.2024.10782378.
48. Rahman, R*, Perera, C*, **Ghosh, S.**, and Pal, R. (2018). Adaptive multi-task elastic net based feature selection from pharmacogenomics databases. In *2018 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 279–282

Book Chapters (refereed)

49. Piyush, V.*, Ellingson, L. VanderPlas, S., and **Ghosh, S.** (2025+) Introduction to Image Data Analysis. In *Fundamentals of Data Science- Vol. 2*, Springer.

50. Nejat, A., **Ghosh, S.**, Cong, Z. and Liang, D. (2016) Housing Recovery after Sandy: A Vignette Study. In A. Sapat, and A-M. Esnard (eds.) *Coming Home After Disaster: Multiple Dimensions of Housing Recovery*, CRC Press.
51. Gelfand, A. E. and **Ghosh, S.**, (2012) Hierarchical Models. In P. Damien, P. Dellaportas, N. Polson, and D. Stephens (eds.) *Hierarchical Models and MCMC: A Tribute to Adrian Smith*, Oxford University Press.

Submitted/ Arxiv

52. Partin, A. et al. (2025+). Benchmarking community drug response prediction models: datasets, models, tools, and metrics for cross-dataset generalization analysis. (Revised and resubmitted to *Briefings in Bioinformatics*)
53. Overbeek, J. et al. (2024+) Assessing Reusability of Deep Learning-Based Monotherapy Drug Response Prediction Models Trained with Omics Data. Available from <https://arxiv.org/pdf/2409.12215>.

University and Professional Services

Editorial Activities

1. Guest editor (one of 4 guest editors) BMC Bioinformatics Supplement: Selected original articles from the Eighth International Workshop on Computational Network Biology: Modeling, Analysis, and Control, 2023.
2. Associate Editor: *Data Enabled Discovery and Applications*, 2018-2020.

Academic Leadership

3. Graduate Chair, Department of Statistics, University of Nebraska-Lincoln, August 2023-Present.
Achievement: Coordinated the procedure to resolve a complex multi-party conflict.
4. Chair of adhoc committee on reviewing STAT 885: Introduction to Data Mining and Machine Learning (March 2024- Present).
Achievement: Coordinated restructuring of this course in terms of content, prerequisites, and scheduling.
5. Chair of adhoc committee on overhauling Statistical Genetics courses (March 2024 -Present).
Achievement: Coordinated a complete overhaul of our Statistical Genetics courses. Helped consolidate a set of 7 legacy courses on Genetics/ Computational Biology/ Bioinformatics to a loose sequence of 3 Statistical Genetics courses- one each at undergraduate, masters and PhD level.

6. Faculty Search Advisory Committee Chair (December 2021- August 2023): Chaired faculty search advisory committees for hiring (a) Open Rank Professor - Bayesian Statistician, (b) Asst/Assoc Professor of Sequential Decision Making, (c) Open Rank Professor of Statistical Geneticist, and (d) Asst/Assoc Professor - Director of Consulting.
Achievement: 3 successful hires. Coordinated the hiring of Professor of Statistical Genetics as a part of a triad of quantitative geneticist positions spread across three allied departments.
7. Chair of the subcommittee on Computational Statistics for the self-study document for the Academic Program Review (Sept 2020-Dec 2020)
Achievement: Coordinated and co-authored a report on our department's strength, contribution and anticipated future contribution in the realm of Computational Statistics. This report was integrated in the department's self-study document as a part of our Academic Program Review during Spring 2021.

Academic Services

8. Local organizing committee member, Annual Conference of International Indian Statistical Association 2025, Lincoln, NE, June 12-15, 2025.
9. Letter of Support for Promotion and Tenure, 2023
10. Organizing committee member and Special Sessions Co-Chair, IEEE BHI 2023, Pittsburgh, PA, October 15-18, 2023.
11. Organizing committee member of the Eighth International Workshop on Computational Network Biology: Modeling, Analysis, and Control (CNB MAC), Houston, TX, September 3, 2023.
12. NSF Reviewer, 2022.
13. Member of the Scientific Program Committee: International Conference on Statistical Distribution and Application, 2022.
14. Faculty Fellows for Student Success, UNL 2021-22
15. Refereeing: Reviewer for *Journal of Hydrology*, *Mathematical Geology*, *Journal of Agricultural, Biological and Environmental Statistics*, *Electronic Journal of Statistics*, *Chilean Journal of Statistics*, *Statistical Methodology*, *Methods in Ecology and Evolution*, *Annals of Applied Statistics*, *Computational Statistics and Data Analysis*, *Journal of Machine Learning Research*, *Journal of Applied Probability and Statistics*, *Journal of American Statistical Association*, *Journal of Statistical Planning and Inference*, *Revista Colombiana de Estadística*, *Sankhya-B*, *Statistics in*

Medicine, Nature Communications, Journal of Computational and Graphical Statistics, Biostatistics, Journal of Statistical Theory and Practice, STAT, Stochastic Environmental Research and Risk Assessment, IEEE Transactions on Computational Biology and Bioinformatics.

Selected Presentations

Invited Talks at Conferences

1. **Ghosh, S.** A Matrix Ensemble Kalman Filter based model for routing deep learners. *Invited Talk, Joint Statistical Meetings*, Portland, Oregon, August 3-6, 2024.
2. **Ghosh, S.** Variable selection in non-linear metric learning. *Invited Talk, International Indian Statistical Conference*, Golden, Colorado, June 1-4, 2023.
3. **Ghosh, S.** A transfer learning approach to perform stochastic search variable selection in small samples. *Invited Talk, Alamo Symposium in Statistics*, University of Texas-San Antonio, San Antonio, Texas, March 10-11, 2023.
4. **Ghosh, S.** Distance-averaged CNN ensemble learning for anti-cancer drug sensitivity prediction. *Invited Talk, International Conference on Statistical Distribution and Application*, Huntington, West Virginia, October 14-15, 2022.
5. **Ghosh, S.** Coherent Multivariate Feature Selection and Inference across Multiple Databases. *Invited Talk, International Conference on Statistical Distribution and Application*, Grand Rapids, Michigan, October 11-12, 2019.
6. Mayer, J. , Rahaman, R., **Ghosh, S.**, Pal, R. Sequential Feature Selection and Inference using Multivariate Random Forests. *Invited Talk, Texas Systems Day*, College Station, Texas, March 31, 2017.
7. **Ghosh, S.** Relative Abundance Estimation by Merging Datasets Collected under Different Spatial Designs. *Invited Talk, XIV Latin American Congress of Probability and Mathematical Statistics*, San J se, Costa Rica, December 5-9, 2016.
8. **Ghosh, S.** Model based Data Fusion. *Invited Talk, SIAM Mini-Symposium*, Texas Tech University, Lubbock, Texas, October 13, 2016.
9. **Ghosh, S.** Multi-species Integral Projection Models. *Invited Talk, International Indian Statistical Association Conference*, Pune, India, December 20-24, 2015.
10. **Ghosh, S.** A Non-homogeneous Poisson Process model for Estimating Species Density. *Invited Talk, G70: A Celebration of Alan Gelfand's 70th Birthday*, Durham, North Carolina, April 19-22, 2015.

11. **Ghosh, S.** Integral Projection Models: Scalability and Extensions. *Invited talk, Conference of Texas Statisticians*, Austin, Texas, April 10-11, 2015.
12. **Ghosh, S.**, Zhu, K., Gelfand, A. E., and Clark, J. S. Joint Modelling of Climate Response Surfaces for Adult and Seedling Plants with Associated Climate Niche Creation. *Invited Talk, International Conference on Advances in Interdisciplinary Statistics and Combinatorics*, Greensboro, North Carolina, October 5–6, 2012.

Refereed Talks at Conferences

13. **Ghosh, S.**, Gelfand, A. E., and Clark, J. S. Inference for Size Demography from Point Pattern Data using Integral Projection Models. *Accepted Talk, International Statistical Ecology Conference*, Montpellier, France, July 1–4, 2014.
14. **Ghosh, S.**, Gelfand, A. E., and Sain, S. R. Uncertainty Quantification for Regional Climate Model Output Using Space-Time Self-Exciting Point Processes. *Accepted Talk, Joint Statistical Meeting*, San Diego, California, July 28–August 2, 2012.
15. **Ghosh, S.** and Mallick, B. K. Bayesian Modeling of Non-Gaussian Geostatistical Data via Copulas. *Student Paper Competition, Topic Contributed Paper, Joint Statistical Meetings*, Washington D.C, August 1–6, 2009.
16. **Ghosh, S.**, Sinha, D., Mallick, B. K. and Lipsitz, S. Random Effects Models for Longitudinal Binary Data with Matching Conditional and Marginal Logit Link Function. *Student Paper Competition, Topic Contributed Paper, Joint Statistical Meetings*, Denver, Colorado, August 2–7, 2008.

Invited Speaker at Departments

17. **Ghosh, S.** Deep learning with multi-type data: representation of features as images with neighborhood dependencies. *Invited Colloquium*, Department of Mathematics, Statistics, & Physics, Wichita State University, Wichita, Kansas, November 5, 2021.
18. **Ghosh, S.** Attaching Uncertainty to Deterministic Output. *Invited Colloquium*, Center of Astronomy, Indian Institute of Technology-Indore, Indore, India, January 9, 2017.
19. **Ghosh, S.**, Gelfand, A. E., and Clark, J. S. Inference for Size Demography from Point Pattern Data using Integral Projection Models. *Invited Colloquium*, Department of Mathematics, University of Arkansas, Fayetteville, AR, 2012.
20. – *Invited Colloquium* Department of Statistics, Virginia Tech, Blacksburg, VA, 2012.
21. – *Invited Colloquium* Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX, 2012.

22. – *Invited Colloquium* Department of Statistics, Purdue University, West Lafayette, IN, 2012.
23. – *Invited Talk* Novartis Corp. Florham Park, NJ, 2012.
24. **Ghosh, S.**, Gelfand, A. E. and Clark, J. S. Inference for Size Demography from Point Pattern Data using Integral Projection Models. *Invited Talk, Bayesian Working Group*, Department of Statistics, North Carolina State University, Raleigh, North Carolina, 2011.
25. **Ghosh, S.** and Mallick, B. K. Bayesian Modeling of Non-Gaussian Geostatistical Data via Copulas. *Invited Colloquium*, Department of Mathematical and Computer Sciences, Colorado School of Mines, Golden, Colorado, 2009.
26. **Ghosh, S.**, Sinha, D., Mallick, B. K. and Lipsitz, S. Random Effects Models for Longitudinal Binary Data with Matching Conditional and Marginal Logit Link Function. *Invited Talk*, Rand Corp. Santa Monica, California, 2009.

Contributed Talks – Conferences

27. **Ghosh, S.**, Gipson, P. S., Pavur, G. C., Laws, C. D. and De Leon, M. T. A Model Based Data-fusion Approach to Estimate Occurrence Probabilities. *Contributed Talk, Annual Meeting of the American Society of Mammalogists*, Jacksonville, Florida, June 12-16, 2015.
28. **Ghosh, S.**, Gelfand, A. E., Clark, J. S. and Zhu, K. The k-ZIG: Flexible Modeling for Zero-inflated Counts. *Topic Contributed Paper, Joint Statistical Meeting*, Miami, Florida, July 30–August 4, 2011.
29. Saravanan, R., Mahajan, S., Genton, M., Hering, A., Mallick, B. K. and **Ghosh, S.** Numerical and Statistical Approaches to Short-Term Climate Prediction, *CISES Workshop on Multivariate Methods in Environmetrics*, Chicago, Illinois, October 26–28, 2006.

Poster Presentations

30. Gamage, P.S., **Ghosh, S.**, Pavur, G., Gipson, P. A Regression Based Spatial Capture-Recapture Model for Estimating Species Density. *Contributed Poster, ENAR*, Miami, Florida, March 15–18, 2015.
31. **Ghosh, S.**, Zhu, K., Gelfand, A. E., and Clark, J. S. Ontogenetic Niche Shifts among Plant Species of Eastern United States. *Contributed Poster, International Society for Bayesian Analysis*, Kyoto, Japan, June 26–30, 2012.

32. **Ghosh, S.**, Gelfand, A. E. and Mølhave, T. Attaching Uncertainty to Deterministic Spatial Interpolations. *Contributed Poster, ENAR*, Miami, Florida, March 20–23, 2011.
33. **Ghosh, S.**, Gelfand, A. E., and Mølhave, T. Attaching Uncertainty to Deterministic Spatial Interpolations. *Contributed Poster, Spatial Program Transition workshop*, SAMSI, North Carolina, October 11–13, 2010.
34. **Ghosh, S.**, Hering, A., Mahajan, S., Genton, M., Jun, M., Mallick, B. K. and Saravanan, R. Statistical Approaches to El-Nino Forecasting. *Invited poster, Joint Statistical Meeting*, Salt Lake City, Utah, July 30–August 2, 2007.

Within Department Seminars

35. **Ghosh, S.** Data Fusion Models for Species Density Estimation. *Statistics Seminar*, Department of Statistics, University of Nebraska-Lincoln, September 3, 2025.
36. **Ghosh, S.** Integral Projection Models: Statistical Specifications and Multivariate Extensions. *Mathbio Seminar*, Department of Mathematics, University of Nebraska-Lincoln, October 14, 2020.
37. **Ghosh, S.** Statistical Inference on Partially Observed Dynamic Ecosystems. *Biomath Seminar*, Department of Mathematics and Statistics, Texas Tech University, April 1, 2014.
38. **Ghosh, S.** A Landscape Level Model for Population Dynamics For FIA Data. *Biomath Seminar*, Department of Mathematics and Statistics, Texas Tech University, November 21, 2012.
39. **Ghosh, S.** A Hierarchical Approach to Quantify Uncertainty in Mechanistic Model for Stochastic Data. *Applied Math Seminar*, Department of Mathematics and Statistics, Texas Tech University, October 17, 2012.

Conference and Session Organizing

- Organized invited session *Statistical Methods for Complex Health Data* at IISA, Kochin, India, Dec 27-31, 2024.
- Organized special invited session *Recent Advances in Statistical Methodologies with Applications in Health and Medical Informatics* at IEEE BHI, Pittsburgh, PA, October 15-18, 2023.
- Organized invited session *Variable Selection in Complex Data* at IISA, Golden, CO, June 1-4, 2023.

- Organized session *Robust Regression Methods* at JSM, Washington DC, August 6-11, 2022.
- Co-organized invited session *Machine learning for Spatial Analysis* at Statistical Data Science Workshop, Bologna, Italy, August 23-26, 2022.
- Organized invited session *Advances in High Dimensional Data Analysis* at International Conference on Statistical Distribution and Application, Huntington, West Virginia, October 14-15, 2022.
- Conference co-organizer: *15th Annual Red Raider Mini Symposium: Spatial Inference on Manifolds, Spatial Statistics, Statistics on Manifolds, Differential Geometry, and Computational Science*, 2015.

Teaching

1. University of Nebraska-Lincoln

- STAT 801: Statistical Methods in Research: Non Calculus. Fall 2019.
- STAT 892: Topics in Statistics and Probability: Intro to Data Mining & Machine Learning. Spring 2020.
- STAT 462: Introduction to Mathematical Statistics-I. Fall 2020, Fall 2021.
- STAT 463: Introduction to Mathematical Statistics-II. Spring 2021.
- STAT 951: Advanced Computational Statistics. Spring 2021, Spring 2023.
- STAT 950: Computational Statistics. Fall 2021.
- STAT 885: Intro to Data Mining & Machine Learning. Spring 2022, Spring 2024.
- STAT 892/494: Special Topics: Bioinformatics. Fall 2022.
- STAT 886: Applied Bayesian Analysis. Spring 2023.
- STAT 101: Introduction to data. Fall 2023.
- STAT 823: Statistical Methods III. Fall 2023, Fall 2024.
- STAT 301: Mathematical Statistics and Modeling I. Fall 2024, Fall 2025.
- STAT 302: Mathematical Statistics and Modeling II. Spring 2025.

2. Texas Tech University

- MATH 3342: Mathematical Statistics for Engineers and Scientists. Fall 2012, Spring 2013, Summer 2015, Fall 2015, Spring 2016, Spring 2017.
- MATH 5104: Seminar in Statistics. Fall 2013.
- STAT 5302: Applied Statistics I. Fall 2013, Fall 2014.

- STAT 5384: Statistics for Engineers and Scientists I. Fall 2013, Fall 2014, Fall 2015.
 - STAT 5303: Applied Statistics II. Spring 2014, Spring 2015.
 - STAT 5385: Statistics for Engineers and Scientists II. Texas Tech University, Spring 2014, Spring 2015, Spring 2016.
-
- STAT 5370: Decision Theory. Summer, 2014, Summer , 2016.
 - MATH 2300: Statistical Methods. Fall 2014, Fall 2016.
 - STAT 5328: Intermediate Mathematical Statistics-I. Fall 2016, Fall 2018.
 - STAT 5329: Intermediate Mathematical Statistics-II. Spring 2017, Spring 2019.
 - MATH 4342: Mathematical Statistics-I. Fall 2017.
 - MATH 4343: Mathematical Statistics-II. Spring 2018, Spring 2019.
3. Texas A&M University
- STAT 201: Elementary Statistical Inference. Fall 2008.
4. Indian Institute of Management, Rohtak, India
- IPM01VA: Visual Analysis. Summer 2021, Summer 2022, Summer 2024.