

## Ranjan Maitra

**Mailing:** Department of Statistics  
Iowa State University  
Ames, IA 50011.

**Phones:** (515) 294-7757 (office)  
(515) 294-4040 (fax)  
**E-mail:** [maitra@iastate.edu](mailto:maitra@iastate.edu)

### Education:

Ph.D.	1996	University of Washington, Seattle; Statistics
M. Stat.	1992	Indian Statistical Institute, Calcutta; Statistics
B. Stat. (Hons.)	1990	Indian Statistical Institute, Calcutta; Statistics

### Research Interests:

Analysis of massive datasets; cluster analysis; data mining; data science; efficient simulation algorithms; finite mixture models; functional Magnetic Resonance Imaging; image analysis; materials imaging; non-destructive evaluation imaging techniques; Positron Emission Tomography; statistical computing; statistical Learning.

### Professional Experience:

2011 – present	Professor, Department of Statistics, Iowa State University
2024 – 2027	Charles and Vicki Sampson Professor in Statistics, Department of Statistics, Iowa State University
2021 – 2025	Associate Chair for Research (two terms), Department of Statistics, Iowa State University
2003 – 2011	Associate Professor, Department of Statistics, Iowa State University
2003	Associate Professor, Department of Mathematics and Statistics, University of Maryland, Baltimore County
1997 – 2003	Assistant Professor, Department of Mathematics and Statistics, University of Maryland, Baltimore County
1996 – 1998	Research Scientist, Statistics and Data Mining Research, Bell Communications Research (Bellcore)

### Honors Received:

- 2024: LAS Award for Outstanding Achievement in Research, College of Liberal Arts and Sciences, Iowa State University.
- 2023: Charles and Vicki Sampson Professor in Statistics (2024-27), Iowa State University.
- 2023: “Founders’ Talk”, 2023 Statistical Methods in Imaging conference, University of Minnesota, Minneapolis.
- 2022: LAS Award for Excellence in Graduate Mentoring, College of Liberal Arts and Sciences, Iowa State University.
- 2020: “Highlight of Stat” selection for co-authored 2018 *Stat* paper “Merging  $k$ -means with hierarchical clustering for identifying general-shaped groups”, Joint Statistical Meetings.
- 2018: Appointed Standing Committee Member (2018-22), *Neural Basis of Psychopathology, Addictions and Sleep Disorders* Study Section, National Institutes of Health.
- 2011: Elected Member, International Statistical Institute (ISI).
- 2011: Elected Fellow, American Statistical Association (ASA).
- 2010: Young Researcher Award, Methodology and Application, International Indian Statistical Association (IISA).
- 2003: CAREER Award, National Science Foundation (NSF).
- 1998: Best Contributed Paper “Clustering Massive Datasets” in Statistical Computing, American Statistical Association, Joint Statistical Meetings, Dallas, Texas, judged best of 80 submitted.
- 1997: Nominated for Francois Erbsman award (*only statistician*) for young scientists under 35 years of age, Information Processing in Medical Imaging (IPMI) Meetings, Poultney, Vermont.
- 1996: Student Paper Competition award for “Estimating Precision in Functional Images”, American Statistical Association, Joint Statistical Meetings, Chicago, Illinois, one of 4 selected out of 22 submitted.
- 1996: Best Poster titled “Estimating the Variability in Reconstructed PET Images” in the Student Poster Session, Spring Pacific Northwest Statistical Meetings, Seattle, Washington.
- 1995: Best Presented Paper for “Estimating Variability in PET Reconstructions” in the Student Paper Competition, Western North American Region (WNAR) of the International Biometric Society, Joint WNAR/IMS Meetings, Stanford, California.
- 1987-92: Excellent performance in degree program, Indian Statistical Institute, Calcutta, India.

## Research Support and Fellowships:

### External Support (Active and Past):

- 2022-26 \$417,516 (total costs). Improving functional fMRI Analysis via Integrated One-step Tensor-variate Methodology, NIH. *Principal Investigator.*
- 2022-25 \$742,590 (total costs). Physics and Mathematical Models for Error Quantifications in Comparative 3D Microscopy for Physical Match Analysis, NIJ. *Co-Principal Investigator. (Principal Investigator: Bastawros, A.)*
- 2019-23 \$681,683 (total costs). Physical and Statistical Models for Quantitative Examination of Physical Match Analysis Utilizing 3D Microscopy of Fracture Surfaces, NIJ. *Co-Principal Investigator. (Principal Investigator: Bastawros, A.)*
- 2019-22 \$652,194 (total costs). Improved diagnosis of severe wind occurrence through machine learning, NOAA. *Co-Principal Investigator. (Principal Investigator: Gallus, W.)*
- 2016-18 \$495,341 (total costs). Quantitative Tools for Examination of Microscopic Fracture Surface Topology and Degradation for Physical Match Analysis of Evidence, NIJ. *Co-Principal Investigator. (Principal Investigator: Bastawros, A.)*
- 2013-17 \$380,466 (total costs). Statistical Methods for Improved Activation Detection in fMRI Studies, Research Grant, NIH. *Principal Investigator.*
- 2005-10 \$2,312,455 (total costs). Research and Training of Graduate (RTG) Students, NSF. *Senior Personnel. (Principal Investigator: Carriquiry, A.)*
- 2003-10 \$400,017 (total costs). CAREER Award, NSF. *Principal Investigator.*
- 2004-09 \$302,764 (total costs, *ISU portion*). Neuroimaging the Treatment and Recovery of Language, NIH. *Principal Investigator, Sub-contract from Johns Hopkins University (Overall Principal Investigator: Rapp, B.).*
- 2002-05 \$152,835 (total costs). Inter-Personnel Agreement, United States Environmental Protection Agency (EPA). *Principal Investigator.*
- 2003-04 \$8,050 (direct costs, *UMBC portion*). Effect of Age on Cortical Responses to Nociception, NIH. *Principal Investigator, Sub-contract from University of Maryland School of Medicine (Overall Principal Investigator: Gullapalli, R. P.).*
- 2001-02 \$39,965.04 (total costs). Inter-Personnel Agreement, United States Environmental Protection Agency (EPA). *Principal Investigator.*
- 2000-01 \$37,230.10 (total costs). Research Grant, Telcordia Technologies. *Principal Investigator.*
- 1999 \$13,867 (total costs). Research Grant, Telcordia Technologies. *Principal Investigator.*
- 1998 \$12,000 (direct costs, *UMBC portion*). Research Grant, NSF. *Principal Investigator, Sub-contract from Carnegie Mellon University.*

### Intra-mural Support (Active and Past)

- 2016-19 \$450,000 Presidential Big Data Brain Initiative. ISU.
- 2012 \$1,203 Foreign Travel Grant. ISU.
- 2008-09 \$24,451 Center for Integrated Animal Genomics. ISU. (*Joint with Dorman, K. S.*)
- 2001 \$600 Arts and Sciences Travel Fund. UMBC.
- 1999 \$3,000 Summer Faculty Fellowship. UMBC.
- 1998 \$5,000 Summer Faculty Fellowship. UMBC.
- 1998 \$803 Arts and Sciences Travel Fund. UMBC.

### Other Research Collaborations and Professional Consulting Experience:

- 2019-19 “Profiles in Hypnotizability”. Source: Richard and Rhoda Goldman Endowed Distinguished Professor Funds, through University of California Berkeley. *Principal Investigator: Kihlstrom, J. F.*
- 2004-06 “Cerebral Processing and Human Somesthetic Perception”. Source: NIH, through University of Maryland School of Medicine. *Principal Investigator: Greenspan, J. D.*
- 2005-06 “Improved Sensitivity and Specificity for Detection of Prostrate Cancer”. Source: DOD, through University of Maryland School of Medicine. *Principal Investigator: Gullapalli, R. P.*
- 2004-05 “Effect of Age on Cortical Responses to Nociception”. Source: National Institute of Aging, through University of Maryland School of Medicine. *Principal Investigator: Gullapalli, R. P.*

### Publications (and Other Creative Efforts):

(Note: Henceforth, student co-authors are denoted by “\*”.)

### Papers Published – Peer-Reviewed:

1. Adrian, D. W.\* , Maitra, R. & D. B. Rowe. (2025) Rice-distributed autoregressive time series modeling of magnitude functional MRI data. *Annals of Applied Statistics*. DOI: [10.1214/24-AOAS1981](https://doi.org/10.1214/24-AOAS1981).
2. Berlinksi, J. D.\* & R. Maitra. (2025) Computational improvements to the kernel  $k$ -means clustering algorithm. *Statistical Analysis and Data Mining – The ASA Data Science Journal*.
3. Dai, F.\* & R. Maitra. (2024) Latent characterisation of the BATSE gamma ray bursts catalogue using gaussian mixture of factor analysers and model-estimated overlap-based syncytial clustering. *Monthly Notices of the Royal Astronomical Society*, 535(4):3396–3409. DOI: [10.1093/mnras/stae2548](https://doi.org/10.1093/mnras/stae2548).
4. Llosa-Vite, C.\* & R. Maitra. (2024) Elliptically-contoured tensor-variate distributions with application to image learning. *ACM Transactions on Probabilistic Machine Learning*, 1(1):1-31. DOI: [10.1145/3675161](https://doi.org/10.1145/3675161).  
**(A version of this manuscript won Carlos Llosa-Vite a 2022 Statistical Methods in Imaging Student Paper Competition award.)**
5. Pal, S.\* , Dutta, S. & R. Maitra. (2024) Fast matrix-free methods for model-based personalized synthetic MR imaging. *Journal of Computational and Graphical Statistics*, 33(3):1109-1117. DOI: [10.1080/10618600.2023.2284208](https://doi.org/10.1080/10618600.2023.2284208).  
**(A version of this manuscript won Subrata Pal a 2023 ASA Section on Statistical Computing and Graphics Student Paper Competition award.)**
6. Thompson, G. Z.\* , Dawood, B.\* , Yu, T., Lograsso, B. K., Vanderkolk, J. D., Maitra, R., Meeker, W. Q. & A. F. Bastawros. (2024) Quantitative matching of forensic evidence fragments using fracture surface topography and statistical learning. *Nature Communications*, 15:7852. DOI: [10.1038/s41467-024-51594-1](https://doi.org/10.1038/s41467-024-51594-1).
7. Tirone, E., Pal, S.\* , Gallus, W. F., Dutta, S., Maitra, R., Newman, J. M., Weber, E. S. & I. Jirak. (2024) A machine learning approach to improve the usability of severe thunderstorm wind reports. *Bulletin of the American Meteorological Society*, 105:E623–E638. DOI: [10.1175/BAMS-D-22-0268.1](https://doi.org/10.1175/BAMS-D-22-0268.1).
8. Chen, W.-C.\* & R. Maitra. (2023) A practical model-based segmentation approach for improved activation detection in single-subject functional magnetic resonance imaging studies. *Human Brain Mapping*, 44(16):5309-5335. DOI: [10.1002/hbm.26425](https://doi.org/10.1002/hbm.26425).
9. Llosa-Vite, C.\* & R. Maitra. (2023) Reduced-rank tensor-on-tensor regression and tensor-variate analysis of variance. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 45(2):2282-2296. DOI: [10.1109/TPAMI.2022.3164836](https://doi.org/10.1109/TPAMI.2022.3164836).  
**(A version of this manuscript won Carlos Llosa-Vite the first-place award at the 2022 Student Paper Competition of the ASA Section on Statistics in Imaging.)**
10. Pal, S.\* , Dutta, S. & R. Maitra. (2023) Personalized synthetic MR imaging with deep learning enhancements. *Magnetic Resonance in Medicine*, 89(4):1634-1643. DOI: [10.1002/mrm.29527](https://doi.org/10.1002/mrm.29527).
11. Zhu, Y.\* , Dai, F.\* & R. Maitra. (2022) Fully three-dimensional radial visualization. *Journal of Computational and Graphical Statistics*, 31(3):935-944. DOI: [10.1080/10618600.2021.2020129](https://doi.org/10.1080/10618600.2021.2020129).  
**(This paper forms the first part of Yifan Zhu's award-winning entry at the 2021 ASA Section on Statistical Computing and Graphics Student Paper Competition.)**
12. Chattopadhyay, S., Kawaler, S. D. & R. Maitra. (2022) Multi-layered characterisation of hot stellar systems with confidence. *Publications of the Astronomical Society of Australia*. DOI: [10.1017/pasa.2022.25](https://doi.org/10.1017/pasa.2022.25).
13. Dawood, B.\* , Llosa-Vite, C.\* , Thompson, G. Z.\* , Lograsso, B. K., Claytor, L. K., Vanderkolk, J., Meeker, W. Q., Maitra, R. & A. Bastawros. (2022) Quantitative matching of forensic evidence fragments utilizing 3d microscopy analysis of fracture surface replicas. *Journal of Forensic Sciences*, 67:899-910. DOI: [10.1111/1556-4029.15012](https://doi.org/10.1111/1556-4029.15012).
14. Dorman, K. S. & R. Maitra. (2022) An efficient  $k$ -modes algorithm for clustering categorical datasets. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 15(1):83-97. DOI: [10.1002/sam.11546](https://doi.org/10.1002/sam.11546).
15. Goren, E. M.\* & R. Maitra. (2022) Fast model-based clustering of partial records. *Stat*, 11(1):e416. DOI: [10.1002/sta4.416](https://doi.org/10.1002/sta4.416).
16. Pazdernik, K. T.\* & R. Maitra. (2021) Estimating basis functions in massive fields under the spatial mixed effects model. *Statistical Analysis and Data Mining – The ASA Data Science Journal*, 14(5):430-448. DOI: [10.1002/sam.11537](https://doi.org/10.1002/sam.11537).
17. Almodóvar-Rivera, I. A.\* & R. Maitra. (2020) Kernel-estimated nonparametric overlap-based syncytial clustering. *Journal of Machine Learning Research*, 21(122):1-54. URL: <https://jmlr.org/papers/v21/18-435.html>.
18. Dai, F.\* , Dutta, S. & R. Maitra. (2020) A matrix-free likelihood method for exploratory factor analysis of high-dimensional gaussian data. *Journal of Computational and Graphical Statistics*, 29(3):675-680. DOI: [10.1080/10618600.2019.1704296](https://doi.org/10.1080/10618600.2019.1704296).  
**(This paper won Fan Dai a 2020 ASA Section on Statistical Computing and Graphics Student Paper Competition award while a poster based on this manuscript won her a Best Student Poster award at the Second Midwest Statistical Machine Learning Colloquium in 2019.)**
19. Thompson, G. Z.\* , Maitra, R., Meeker, W. Q. & A. Bastawros. (2020) Classification with the matrix-variate- $t$  distribution. *Journal of Computational and Graphical Statistics*, 29(3):668-674. DOI: [10.1080/10618600.2019.1696208](https://doi.org/10.1080/10618600.2019.1696208).
20. R. Maitra. (2019) Efficient bandwidth estimation in 2D filtered backprojection reconstruction. *IEEE Transactions on Image Processing*, 28(11):5610-5619. DOI: [10.1109/TIP.2019.2919428](https://doi.org/10.1109/TIP.2019.2919428).
21. Almodóvar-Rivera, I. A.\* & R. Maitra. (2019) FAST adaptive smoothed thresholding for improved activation detection in low-

- signal fMRI. *IEEE Transactions on Medical Imaging*, 38(12):2821-2828. DOI: [10.1109/TMI.2019.2915052](https://doi.org/10.1109/TMI.2019.2915052).  
**(An earlier version of this manuscript won Israel A. Almodóvar-Rivera a 2018 Student Paper Competition award from the ASA Section on Medical Devices and Diagnostics.)**
22. Berry, N.\* & R. Maitra. (2019) TiK-means: Transformation-infused  $k$ -means clustering for skewed groups. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 12(3):223-233. DOI: [10.1002/sam.11416](https://doi.org/10.1002/sam.11416).
  23. Adrian, D. W.\*, Maitra, R. & D. B. Rowe. (2018) Complex-valued time series modeling for improved activation detection in fMRI studies. *Annals of Applied Statistics*, 12(3):1451-1478. DOI: [10.1214/17-AOAS1117](https://doi.org/10.1214/17-AOAS1117).
  24. Chattopadhyay, S. & R. Maitra. (2018) Multivariate  $t$ -mixtures-model-based cluster analysis of BATSE catalogue establishes importance of all observed parameters, confirms five distinct ellipsoidal sub-populations of gamma ray bursts. *Monthly Notices of the Royal Astronomical Society*, 481(3):3196-3209. DOI: [10.1093/mnras/sty1940](https://doi.org/10.1093/mnras/sty1940).
  25. Lithio, A.\* & R. Maitra. (2018) An efficient  $k$ -means clustering algorithm for datasets with incomplete records. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 11:296-311. DOI: [10.1002/sam.11392](https://doi.org/10.1002/sam.11392).
  26. Pazdernik, K. T.\*, Maitra, R., Nychka, D. & S. R. Sain. (2018) Reduced basis kriging for big spatial fields. *Sankhyā: The Indian Journal of Statistics, Series A*, 80(2):280-300. DOI: [10.1007/s13171-018-0129-7](https://doi.org/10.1007/s13171-018-0129-7).  
**(An earlier version of this manuscript won Karl Pazdernik a 2012 Student Paper Competition award from the ASA Section on Statistical Computing.)**
  27. Peterson, A. D.\*, Ghosh, A. P. & R. Maitra. (2018) Merging  $k$ -means with hierarchical clustering for identifying general-shaped groups. *Stat*, 7(1):e172. DOI: [10.1002/sta4.172](https://doi.org/10.1002/sta4.172).  
**(This paper was invited to be presented in a "Highlights of Stat" special topic-contributed session at the 2020 Joint Statistical Meetings.)**
  28. Chattopadhyay, S. & R. Maitra. (2017) Gaussian-mixture-model-based cluster analysis finds five kinds of gamma ray bursts in the BATSE catalog. *Monthly Notices of the Royal Astronomical Society*, 469(3):3374-3389. DOI: [10.1093/mnras/stx1024](https://doi.org/10.1093/mnras/stx1024).
  29. Tian, Y.\*, Maitra, R., Meeker, W. Q. & S. D. Holland. (2017) A statistical framework for improved automatic flaw detection in nondestructive evaluation images. *Technometrics*, 59(2):247-261. DOI: [10.1080/00401706.2016.1153000](https://doi.org/10.1080/00401706.2016.1153000).
  30. Adrian, D. W.\*, Maitra, R. & D. B. Rowe. (2013) Ricean over Gaussian modeling in magnitude fMRI analysis – added complexity with negligible practical benefits. *Stat*, 2:303-316. DOI: [10.1002/sta4.34](https://doi.org/10.1002/sta4.34).
  31. R. Maitra. (2013) On the expectation-maximization algorithm for Rice-Rayleigh mixtures with application to estimating the noise parameter in magnitude MR datasets. *Sankhyā: The Indian Journal of Statistics, Series B*, 75(2):293-318. DOI: [10.1007/s13571-012-0055-y](https://doi.org/10.1007/s13571-012-0055-y).
  32. Maitra, R., Melnykov, V.\* & S. N. Lahiri. (2012) Bootstrapping for significance of compact clusters in multi-dimensional datasets. *Journal of the American Statistical Association*, 107(497):378-392. DOI: [10.1080/01621459.2011.646935](https://doi.org/10.1080/01621459.2011.646935).
  33. Melnykov, V.\*, Chen, W.-C.\* & R. Maitra. (2012) MIXSIM: An R package for simulating data to study performance of finite mixture modeling and clustering algorithms. *Journal of Statistical Software*, 51(12):1-25. DOI: [10.18637/jss.v051.i12](https://doi.org/10.18637/jss.v051.i12).
  34. Bhattacharya, S. & R. Maitra. (2011) A nonstationary nonparametric Bayesian approach to dynamically modeling effective connectivity in functional magnetic resonance imaging experiments. *Annals of Applied Statistics*, 5(2B):1183-1206. DOI: [10.1214/11-AOAS470](https://doi.org/10.1214/11-AOAS470).
  35. Chen, W.-C.\* & R. Maitra. (2011) Model-based clustering of regression time series data via APECM – an AECM algorithm sung to an even faster beat. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 4:567-78. DOI: [10.1002/sam.10143](https://doi.org/10.1002/sam.10143).  
**(This paper won Wei-Chen Chen a 2011 Student Paper Competition award from the ASA Section on Statistical Learning and Data Mining.)**
  36. Melnykov, V.\* & R. Maitra. (2011) CARP: Software for fishing out good clustering algorithms. *Journal of Machine Learning Research*, 12:31-35. URL: <https://jmlr.csail.mit.edu/papers/v12/melnykov11a.html>.
  37. Melnykov, V.\*, Maitra, R. & D. Nettleton. (2011) Accounting for spot matching uncertainty in the analysis of proteomics data from two-dimensional gel electrophoresis. *Sankhyā: The Indian Journal of Statistics, Series = B*, 73(1):123-143. DOI: [10.1007/s13571-011-0016-x](https://doi.org/10.1007/s13571-011-0016-x).
  38. R. Maitra. (2010) A re-defined and generalized percent-overlap-of-activation measure for studies of fMRI reproducibility and its use in identifying outlier activation maps. *Neuroimage*, 50(1):124-135. DOI: [10.1016/j.neuroimage.2009.11.070](https://doi.org/10.1016/j.neuroimage.2009.11.070).
  39. Maitra, R. & V. Melnykov\*. (2010) Simulating data to study performance of finite mixture modeling and model-based clustering algorithms. *Journal of Computational and Graphical Statistics*, 19(2):354-376. DOI: [10.1198/jcgs.2009.08054](https://doi.org/10.1198/jcgs.2009.08054).
  40. Maitra, R. & I. P. Ramler\*. (2010) A  $k$ -mean-directions algorithm for efficient clustering of data on a sphere. *Journal of Computational and Graphical Statistics*, 19(2):377-396. DOI: [10.1198/jcgs.2009.08155](https://doi.org/10.1198/jcgs.2009.08155).
  41. Maitra, R. & J. J. Riddles\*. (2010) Synthetic magnetic resonance imaging revisited. *IEEE Transactions on Medical Imaging*, 29(3):895-902. DOI: [10.1109/TMI.2009.2039487](https://doi.org/10.1109/TMI.2009.2039487).
  42. Melnykov, V.\* & R. Maitra. (2010) Finite mixture models and model-based clustering. *Statistics Surveys*, 4:80-116. DOI: [10.1214/09-SS053](https://doi.org/10.1214/09-SS053).
  43. R. Maitra. (2009) Assessing certainty of activation or inactivation in test-retest fMRI studies. *Neuroimage*, 47(1):88-97. DOI:

- 10.1016/j.neuroimage.2009.03.073.
44. R. Maitra (2009) Initializing optimization partitioning algorithms *ACM/IEEE Transactions on Computational Biology and Bioinformatics*, 6(1):144–157. DOI: [10.1109/TCBB.2007.70244](https://doi.org/10.1109/TCBB.2007.70244).
  45. Maitra, R. & D. Faden\*. (2009) Noise estimation in magnitude MR datasets. *IEEE Transactions on Medical Imaging*, 28(10):1615–1622. DOI: [10.1109/TMI.2009.2024415](https://doi.org/10.1109/TMI.2009.2024415).
  46. Maitra, R. & I. P. Ramler\*. (2009) Clustering in the presence of scatter. *Biometrics*, 65:341–352. DOI: [10.1111/j.1541-0420.2008.01064.x](https://doi.org/10.1111/j.1541-0420.2008.01064.x).
  47. Ellis, N. & R. Maitra. (2007) Multivariate Gaussian simulation outside arbitrary confidence ellipsoids. *Journal of Computational and Graphical Statistics*, 16(3):692–708. DOI: [10.1198/106186007X238431](https://doi.org/10.1198/106186007X238431).
  48. Moulton, E. A.\*, Keaser, M. L., Gullapalli, R. P., Maitra, R. & J. D. Greenspan. (2006) Sex differences in the cerebral BOLD signal response to painful heat stimuli. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, 291:257–67. DOI: [10.1152/ajpregu.00084.2006](https://doi.org/10.1152/ajpregu.00084.2006).
  49. Gullapalli, R. P., Maitra, R., Roys, S. R., Greenspan, J. D., Smith, G. & G. Alon. (2005) Reliability estimation of grouped functional imaging data using penalized maximum likelihood. *Magnetic Resonance in Medicine*, 53:1126–1134. DOI: [10.1002/mrm.20470](https://doi.org/10.1002/mrm.20470).
  50. Maitra, R., Ross, P. N., Sinha, B. K., Lee, J. & S. Herczeg. (2003) On some aspects of data integration techniques with applications. *East-West Journal of Mathematics, Computational Mathematics and Modelling*: CMM:241–256.
  51. R. Maitra. (2002) A statistical perspective on data mining. *Journal of the Indian Society for Probability and Statistics*, 6:28–77.
  52. Maitra, R., Roys, S. R. & R. P. Gullapalli. (2002) Test-retest reliability estimation of fMRI data. *Magnetic Resonance in Medicine*, 48:62–70. DOI: [10.1002/mrm.10191](https://doi.org/10.1002/mrm.10191).
  53. R. Maitra. (2001) Clustering massive datasets with applications in software metrics and tomography. *Technometrics*, 43(3):336–46. DOI: [10.1198/004017001316975925](https://doi.org/10.1198/004017001316975925).  
**(An earlier version of this paper won the ASA Section on Statistical Computing’s Best Contributed Paper award at the 1998 Joint Statistical Meetings.)**
  54. Maitra, R. & S. R. Dalal. (2001) Pay-phones, parking-meters, vending machines and Bayesian prediction of fill-times. *Journal of the American Statistical Association*, 96(454):476–87. DOI: [10.1198/016214501753168190](https://doi.org/10.1198/016214501753168190).
  55. R. Maitra. (1998) An approximate bootstrap technique for variance estimation in parametric images. *Medical Image Analysis*, 2(4):379–82. DOI: [10.1016/S1361-8415\(98\)80018-2](https://doi.org/10.1016/S1361-8415(98)80018-2).
  56. Maitra, R. & F. O’Sullivan. (1998) Variability assessment in positron emission tomography and related generalized deconvolution models. *Journal of the American Statistical Association*, 93(444):1340–55. DOI: [10.2307/2670050](https://doi.org/10.2307/2670050).  
**(Presentations based on this paper won R. Maitra the Best Presented Paper award at the Student Paper Competition of the 1995 Joint WNAR/IMS Meetings, and separately, a Best Poster award at the Student Paper Competition of the 1996 Spring Pacific Northwest Statistical Meetings.)**
  57. SenGupta, A. & R. Maitra. (1998) On best equivariance and admissibility of simultaneous MLE for mean direction vectors of several Langevin distributions. *Annals of the Institute of Statistical Mathematics*, 50(4):715–27. DOI: [10.1023/A:1003712930390](https://doi.org/10.1023/A:1003712930390).
  58. R. Maitra. (1997) Estimating precision in functional images. *Journal of Computational and Graphical Statistics*, 6:132–42. DOI: [10.1080/10618600.1997.10474732](https://doi.org/10.1080/10618600.1997.10474732).  
**(This paper won a 1996 Student Paper competition award from the ASA Section on Statistical Computing.)**

#### Invited Discussions:

1. Dorman, K. S. & R. Maitra. (2016) Comment on “Statistical modelling of citation exchange between statistics journals” by Cristiano Varin, Manuela Cattelan and David Firth. *Journal of the Royal Statistical Society, Series A*, 179(1):46–47.
2. Maitra, R. & R. P. Gullapalli. (2000) Comment on “A Bayesian time-course model for functional magnetic resonance imaging data” by Chris Genovese. *Journal of the American Statistical Association*, 95(451):707–708.

#### Peer-Reviewed Book Chapter:

1. Nusser, S. M., Intille, S. S. & R. Maitra (2005) The future of intensive longitudinal measurement and analysis. In Walls, T. A. & J. S. Schafer (Eds.), *Models for Intensive Longitudinal Data* (pp. 254–277). New York: Oxford University Press.

#### Peer-Reviewed Conference Proceedings:

1. Chen, W.-C.\* & R. Maitra (2016) A novel model-based segmentation approach for improved activation detection in fMRI studies. In *Proceedings of the 24th International Society of Magnetic Resonance in Medicine*. Singapore.
2. Roys, S. R., Maitra, R., Greenspan, J. D. & R. P. Gullapalli (2002) Group analysis of fMRI data using penalized maximum likelihood method. In *Proceedings of the 10th International Society of Magnetic Resonance in Medicine* (pp. 1428). Honolulu, Hawaii.

3. Lefkowitz, D., Read, K., Maitra, R. & R. P. Gullapalli (2002) Intra-subject and inter-subject variability of SVS vs CSI spectra from spatially matched voxels. In *Proceedings of the 10th International Society of Magnetic Resonance in Medicine* (pp. 2509). Honolulu, Hawaii.
4. Maitra, R., Roys, S. R., Greenspan, J. D. & R. P. Gullapalli (2001) Resampling methods to test reliability of motion-corrected fMRI data. In *Proceedings of the 9th International Society of Magnetic Resonance in Medicine* (pp. 1202). Glasgow, Scotland.
5. Roys, S. R., Maitra, R. & R. P. Gullapalli (2001) Comprehensive approach to estimating test-retest reliability in fMRI. In *Proceedings of the 9th International Society of Magnetic Resonance in Medicine* (pp. 1718). Glasgow, Scotland.
6. Maitra, R. & J. E. Besag (1998) Bayesian reconstruction in synthetic Magnetic Resonance Imaging. In A. Mohammad-Djafari (Eds.), *Bayesian Inference in Inverse Problems. Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE 1998) Meetings* (pp. 39-47). San Diego, California.
7. R. Maitra (1997) Synthetic resampling methods for variance estimation in parametric images. In *Springer-Verlag Lecture Notes in Computer Science Series: Information Processing in Medical Imaging* (pp. 271-84). Poultney, Vermont.
8. Maitra, R. & F. O'Sullivan (1996) Estimating the variability in functional images using a synthetic resampling approach. In *1996 IEEE Nuclear Science Symposium and Medical Imaging Conference Record* (pp. 1867-71). Anaheim, California.
9. Maitra, R. & F. O'Sullivan (1995) Estimating the variability of reconstructed PET data: A technique based on approximating the reconstruction filter by a sum of Gaussian kernels. In *1995 IEEE Nuclear Science Symposium and Medical Imaging Conference Record* (pp. 1411-14). San Francisco, California.

#### Peer-Reviewed Abstracts/Extended Summaries:

1. R. Maitra (2014) Efficient bandwidth estimation in clinical positron emission tomography image reconstruction. In *2014 IEEE Medical Imaging Conference*. Seattle, Washington.
2. Zhuo, J., Roys, S. R., Lefkowitz, D. M., Maitra, R., Bedekar, G., Greenspan, J. D. & R. P. Gullapalli (2005) Test-retest study of variability in diffusion parameters in brain regions. In *Proceedings of the 11th Annual Human Brain Mapping Meeting*. Toronto, Canada.

#### Books and Monographs:

1. Maitra, R., Sinha, B. K., Ross, N. P., Lee, J. & S. Herczeg (2003) Combining environmental indicators. In *Monograph on Series in Statistical Methodology*. Washington DC: Office of Environmental Information, United States Environmental Protection Agency. (Refereed monograph.)

#### Book Reviews:

1. Dai, F.\* & R. Maitra. (2020) Review of "Practical Text Analytics: Maximizing the value of text data" by Murugan Anandarajan, Chelsey Hill, and Thomas Nolan (Springer). *Technometrics*, 62(2):285-286.
2. R. Maitra. (2011) Review of "The statistical analysis of functional MRI data" by Nicole A. Lazar (Springer). *Technometrics*, 53(2):211-212.
3. R. Maitra. (2008) Review of "Directional Statistics" by Kanti V. Mardia and Peter E. Jupp (Academic Press). *Technometrics*, 50(4):546-7.
4. R. Maitra. (2007) Review of "Independent Component Analysis: A tutorial introduction" by James V. Stone (MIT Press). *Technometrics*, 49(3):358-9.
5. R. Maitra. (2005) Review of "Statistical Computing for the Social Scientist" by Micah Altman, Jeff Gill, Michael P. Donald (John Wiley). *Technometrics*, 47(2):241-2.
6. Maitra, R. & T. Mathew. (2000) Review of "Analysis of Variance in Statistical Image Processing" by Ludwik Kurz and M. Hafed Benteftifa (Cambridge University Press). *Technometrics*, 42(2):212-3.

#### Software:

1. GroupedCircularBoxplot. R package for displaying labeled angular data. Joint with J. Berlinski\*. Available at <https://www.github.com/jdberlinski/GroupedCircularBoxplot>.
2. kkmeans. R package for efficient kernel k-means clustering. Joint with J. Berlinski\*. Available at <https://www.github.com/jdberlinski/kkmeans>.
3. DeepSynMRI. Python package for deep learning enhancements to synthetic MRI. Joint with Pal, S.\* & S. Dutta. Available at <https://www.github.com/StatPal/DeepSynMRI>.
4. symr. C++ package for model-based synthetic MRI. Joint with Pal, S.\* & S. Dutta. Available at <https://www.github.com/StatPal/symr>.
5. kclips. C package for k-means Clustering in the Presence of Scatter. Joint with I. P. Ramler\*. Available at <http://www.github.com/maitra/kclips>.
6. MixfMRI. R package for Model-based Activation in fMRI. Joint with W.-C. Chen\*. Available at [www.R-project.org](http://www.R-project.org).

7. *BootClust*. C package for bootstrapping for significance in clustering. Joint with V. Melnykov\*. Available at <https://www.mloss.org>.
8. *SynClustR*. R package for Syncytial Clustering. Joint with I. Almodóvar-Rivera\*. Available at <https://www.github.com/ialmodovar/SynClustR>.
9. *RFASTfMRI*. R package for FAST Adaptive Smoothed Thresholding in fMRI. Joint with I. Almodóvar-Rivera\*. Available at <https://www.github.com/ialmodovar/RFASTfMRI>.
10. *Radviz3d*. R package for Three-dimensional Radial Visualization. Joint with Zhu, Y.\*, Dai, F.\* & R. Maitra. Available at <https://github.com/fanne-stat/radviz3d>.
11. *km-means*. C package for  $k$ -means clustering for datasets with incomplete records. Joint with A. Lithio\*. Available at <https://www.github.com/maitra/kmmeans>.
12. *catsim*. R package for calculating a structural similarity metric for categorical images. Joint with G. Z. Thompson\*. Available at <http://www.R-project.org>.
13. *fad*. R package for Exploratory Factor Analysis of High-Dimensional Gaussian Data. Joint with Dai, F.\* & S. Dutta. Available at <https://www.github.com/somakd/fad>.
14. *MixMatrix*. R package for simulating, classification and clustering of Matrix- $t$ -variate populations. Joint with G. Z. Thompson\*. Available at <http://www.R-project.org>.
15. *TiKmeans*. R package for Transformation-Infused  $k$ -means Clustering. Joint with N. S. Berry\*. Available at <https://www.github.com/berrynti/TiKmeans>.
16. *MixtClust*. R package for Robust  $t$ -mixture model-based clustering for complete and incomplete data. Joint with E. M. Goren\*. Available at <https://www.github.com/emilygoren/MixtClust>.
17. *CARP*. The Clustering Algorithms Referee Package. Joint with V. Melnykov\*. Available at <http://www.mloss.org>.
18. *fastICA*. C package for basic Independent Component Analysis. Available at <http://www.mloss.org>.
19. *MixSim*. R package to Simulate from Finite Mixture Models. Joint with Melnykov, V.\* & W.-C. Chen\*. Available at <http://www.R-project.org>.
20. *EMCluster*. R package for inference on Finite Mixture Models. Joint with Chen, W.-C.\* & V. Melnykov\*. Available at <http://www.R-project.org>.
21. *MixedRice*. C package for EM estimation of Rice mixtures. Available at <http://www.mloss.org>.

## Conference/Poster Presentations:

### Invited/Juried:

1. Gauge reproducibility and repeatability for matrix-variate data with application to forensic fracture surface-matching. *18th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023)*. London, United Kingdom, December, 2024.
2. Fourier-structured tensor-variate distributions for high-resolution imaging applications. *Korean Statistical Society Conference*. Seoul, Korea, July, 2024.
3. Quality assessment of forensic fracture-surface match utilizing 3D microscopy and matrix-variate gauge R&R. *Joint Statistical Meetings*. Portland, Oregon, August, 2024. (Topic-contributed session on "Advances in statistical foundations of forensic science").
4. Reduced-rank tensor-on-tensor regression and tensor-variate analysis of variance. *Statistical Methods in Imaging Conference*. J. W. Marriott Hotel, Indianapolis, Indiana, May, 2024. (Invited session on "Longitudinal Imaging and Biostatistical Methods").
5. Fourier-structured tensor-variate distributions for high-resolution imaging applications. *16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023)*. Berlin, Germany, December, 2023.
6. Accounting for measurement error while clustering gamma ray bursts. *Joint Statistical Meetings*. Toronto, Canada, August, 2023. (Topic-contributed session on "Pulling Signal out of Noise for Data-Driven Discoveries in Astronomy").
7. Exploratory factor analysis for data on a sphere. *International Indian Statistical Association conference*. Colorado School of Mines, Golden, Colorado, June, 2023. (Invited session on "Recent Advances in Factor Analysis").
8. Fourier-structured tensor-variate distributions for high-resolution imaging applications. *Statistical Methods in Imaging Conference*. University of Minnesota, Minneapolis, Minnesota, May, 2023. (Founders' Talk).
9. Reduced-rank tensor-on-tensor regression and tensor-variate analysis of variance. *Conference on Advances in Data Science Theory, Methods and Computation*. College Station, Texas, October, 2022.
10. Reduced-rank tensor-on-tensor regression and tensor-variate analysis of variance. *24th International Conference on Computational Statistics (COMPSTAT2022)*. Bologna, Italy, August, 2022.
11. Model-based segmentation for improved activation detection in single-subject functional magnetic resonance imaging studies. *Statistical Methods in Imaging Conference*. Vanderbilt University, Nashville, Tennessee, May, 2022. (Invited session on "Modern Statistical Analysis on Neuroimaging").

12. Kernel nonparametric overlap-based syncytial clustering. *Joint Statistical Meetings*. Philadelphia, Pennsylvania, August, 2020. (Topic-contributed session on "Highlights of Stat").
13. Kernel nonparametric overlap-based syncytial clustering. *23rd International Conference on Computational Statistics (COMPSTAT2018)*. Iasi, Romania, August, 2018. (Invited Session on "Model-based clustering and classification").
14. Fracture mechanics-based quantitative matching of evidence fragments: Statistical framework. *2018 Impression, Pattern and Trace Evidence Symposium*. Arlington, Virginia, January, 2018.
15. Fracture-mechanics-based quantitative matching of evidence fragments. *International Symposium on Forensic Science Error Management*. Gaithersburg, Maryland, July, 2017.
16. Diagnostics in finite mixture models and model-based clustering. *22nd International Conference on Computational Statistics (COMPSTAT2016)*. Oviedo, Spain, August, 2016.
17. A novel model-based segmentation approach for improved activation detection in fMRI studies. *2016 Annual Meetings of the International Society of Magnetic Resonance in Medicine and Exhibition*. Singapore, May, 2016. (Juried poster presentation).
18. Diagnostics in finite mixture models and model-based clustering. *Twenty-second Workshop on Model-based Clustering*. Seattle, Washington, July, 2015. (Invited Long Talk).
19. Improved activation detection in fMRI. *2015 Joint Statistical Meetings*. Seattle, Washington, August, 2015. (Topic-contributed session on "Recent Advances in Neuroimaging Data Analysis").
20. A practical model-based segmentation approach to improved activation detection in fMRI studies. *International Indian Statistical Association Joint Meetings*. Pune, India, December, 2015.
21. Efficient bandwidth estimation in clinical positron emission tomography reconstruction. *IEEE Medical Imaging Conference (MIC)*. Seattle, Washington, November, 2014. (Juried poster presentation).
22. Practical segmentation-based activation detection in functional MR imaging. *21st International Conference on Computational Statistics (COMPSTAT2014), 5th IASC World Conference*. Geneva, Switzerland, August, 2014.
23. Clustering mutual funds for a balanced investment portfolio. *3rd IIMA International Conference on Advanced Data Analysis, Business Analytics and Intelligence (ICADABAI-2013)*. Ahmedabad, India, April, 2013.
24. Bootstrapping for significance in clustering. *Conference on Contemporary Issues and Applications of Statistics (CIAS-2012)*. Kolkata, India, January, 2012.
25. Bootstrapping for significance in clustering. *XXXI Annual Convention of the Indian Society for Probability and Statistics and International Conference on Statistics, Probability and Related Areas*. Cochin, India, December, 2011.
26. Assessing significance in finite mixture models and model-based clustering. *Eighteenth Workshop on Model-based Clustering*. Grenoble, France, July, 2010. (Invited Long Talk).
27. Bootstrapping for significance in multi-dimensional compact clustering models. *Conference on Resampling Methods and High-dimensional Data*. College Station, Texas, March, 2010. (Invited session on "Resampling Methods").
28. Bootstrapping for significance in multi-dimensional compact clustering models. *International Indian Statistical Association Joint Meetings*. Vishakhapatnam, India, January, 2010. (Invited session on "Resampling Methods").
29. Generating Gaussian mixtures with specified overlap. *Fourteenth Workshop on Model-based Clustering*. Seattle, Washington, July, 2008. (Invited short talk).
30. Clustering in the presence of scatter. *ICSPRAR-2008: International Conference on Statistical Paradigms: Recent Advances and Reconciliations*. Kolkata, India, January, 2008. (Invited Session on "High-dimensional Data Analysis").
31. A GCV approach to bandwidth selection in positron emission tomography image reconstruction. *Joint Statistical Meetings*. Salt Lake City, Utah, August, 2007. (Invited Session on "Advances in Contemporary Nonparametric Methods").
32. Model-based clustering of constrained spherical data: Finding patterns in gene expression time-course sequences. *Thirteenth Workshop on Model-based Clustering*. Dublin, Ireland, July, 2007. (Invited short talk).
33. Clustering massive datasets from arbitrary Gaussian mixtures. *Indian International Statistical Association Joint Meetings*. Cochin, India, January, 2007. (Special Invited Presentation on Data Mining).
34. Classification methods for directional data. *International Statistics Conference, 2005*. Kuala Lumpur, Malaysia, December, 2005.
35. A statistical perspective on data mining. *Workshop on Data Mining and Bioinformatics. Organized by the International Indian Statistical Association and the Department of Statistics, University of Kalyani*. Kalyani, India, May, 2004.
36. Reliability assessment in fMRI studies: A test-retest estimation approach. *International Conference on Emerging Strategies for improving Productivity, Quality and Reliability*. Kolkata, India, December, 2003.
37. Indexing data quality indicators: A multiple-criteria decision-making approach. *TIES 2002. The International Environmetrics Society Meetings*. Genova, Italy, June, 2002.
38. Group analysis of fMRI data using penalized maximum likelihood method. *10th Annual Meetings of the International Society of Magnetic Resonance in Medicine*. Honolulu, Hawaii, May, 2002. (Juried poster presentation).
39. Intra-subject and inter-subject variability of SVS vs CSI spectra from spatially matched voxels. *10th Annual Meetings of the International Society of Magnetic Resonance in Medicine*. Honolulu, Hawaii, May, 2002. (Juried poster presentation).
40. Resampling methods to test reliability of motion-corrected fMRI data. *2001 Joint Annual Meetings of the International Society of*



- Magnetic Resonance in Medicine and the European Society for Magnetic Resonance in Biology, Glasgow.* Glasgow, Scotland, April, 2001. (Juried poster presentation).
41. A comprehensive approach to estimating test-retest reliability in fMRI. *2001 Joint Annual Meetings of the International Society of Magnetic Resonance in Medicine and the European Society for Magnetic Resonance in Biology.* Glasgow, Scotland, April, 2001. (Juried poster presentation).
  42. Comment on “a Bayesian time-course model for functional magnetic resonance imaging data” by Chris Genovese. *2000 Joint Statistical Meetings.* Indianapolis, Indiana, August, 2000. (Invited discussant).
  43. Optimal fill-time prediction of coin boxes. *1999 Fall Meetings, INFORMS.* Philadelphia, Pennsylvania, November, 1999. (Invited session on “Models in Telecom Services Management”).
  44. Making PET movies. *1999 Joint Statistical Meetings.* Baltimore, Maryland, August, 1999. (Invited session on “Recent Advances in Medical Imaging”).
  45. Bayesian reconstruction in synthetic magnetic resonance imaging. *1999 Chesapeake Bay Chapter Meeting, American Statistical Association.* Aberdeen, Maryland, April, 1999. (Invited keynote presentation).
  46. Variability assessment in PET reconstructions. *1999 Workshop on Shape and Image Analysis.* Calcutta, India, January, 1999.
  47. Bayesian reconstruction in synthetic magnetic resonance imaging. *1998 Meetings of the Society of Photo-Optical Instrumentation Engineers.* San Diego, California, July, 1998. (Invited session on “Bayesian Inference in Inverse Problems”).
  48. Variance estimation in functional images. *1998 Workshop on Image Analysis.* Montreal, Canada, April, 1998.
  49. Synthetic resampling methods for variance estimation in parametric images. *15th International Conference on Information Processing in Medical Imaging.* Poultney, Vermont, June, 1997. (Juried presentation).
  50. Synthetic resampling methods for variability estimation in functional images. *29th Symposium on the Interface: Computing Science and Statistics.* Houston, Texas, April, 1997. (Invited Session on Imaging).
  51. Estimating variability in functional images using a synthetic resampling approach. *1996 IEEE Nuclear Science Symposium and Medical Imaging Conference.* Anaheim, California, October, 1996. (Juried poster presentation).
  52. Estimating precision in functional images. *1996 Joint Statistical Meetings.* Chicago, Illinois, August, 1996. (Juried special contributed paper presentation).
  53. Estimating the variability of reconstructed PET data: A technique based on approximating the reconstruction filter by a sum of Gaussian kernels. *1995 IEEE Nuclear Science Symposium and Medical Imaging Conference.* San Francisco, California, October, 1995. (Juried poster presentation).

#### Contributed/Non-juried:

1. Fast spatial inference in the homogeneous Ising model. *Joint Statistical Meetings.* Denver, Colorado, July, 2019.
2. FAST adaptive smoothed thresholding for activation detection in low-signal fMRI. *Joint Statistical Meetings.* Baltimore, Maryland, August, 2017.
3. Improving  $k$ -means color quantization of images via operations in different color spaces. *Joint Statistical Meetings.* Chicago, Illinois, August, 2016.
4. Practical model-based segmentation for activation detection in functional MRI imaging. *Joint Statistical Meetings.* Boston, Massachusetts, August, 2014. (Topic-contributed session on “Mixture Models and Its Applications”).
5. Invited discussant, session on functional data and registration. *Joint Statistical Meetings.* San Diego, CA, August, 2013. (Topic-contributed session).
6. Finite mixture models in magnetic resonance imaging. *Joint Statistical Meetings.* Miami, Florida, August, 2011. (Topic-contributed session on “Mixture Models and Its Applications”).
7. Assessing significance in finite mixture models. *Joint Statistical Meetings.* Vancouver, British Columbia, August, 2010. (Topic-contributed session on “Mixture Models and Clustering”).
8. Assessing significance in finite mixture models and model-based clustering. *4th Annual Probability and Statistics Day and Silver Jubilee of UMBC Graduate Program in Statistics Conference.* Baltimore, Maryland, April, 2010.
9. Bootstrapping for significance in multi-dimensional compact clustering models. *Joint Statistical Meetings.* Washington, D.C., August, 2009.
10. Estimating significant clusters in model-based clustering. *2008 Joint Statistical Meetings.* Denver, Colorado, August, 2008.
11. GCV estimation of bandwidth in positron emission tomography reconstruction. *International Conference on Multivariate Statistical Methods in the 21st Century: The Legacy of Professor S.N.Roy. Platinum Jubilee Celebrations of the Indian Statistical Institute.* Kolkata, India, December, 2006. (Invited Presentation on Brain Imaging).
12. Initializing optimization partitioning algorithms. *2006 Joint Statistical Meetings.* Seattle, Washington, August, 2006.
13. Grouping mutual funds on the basis of performance. *2005 Joint Statistical Meetings.* Minneapolis, Minnesota, August, 2005.
14. Clustering massive datasets from arbitrary Gaussian mixtures. *55th Session of the International Statistical Institute.* Sydney, Australia, April, 2005.

15. Indexing environmental quality indicators: A multiple criteria decision-making approach. *Statistics in Public Resources and Utilities, and in Care of the Environment (SPRUCE) VI*. Lund, Sweden, June, 2003. (Session on Air Quality and Indicators).
16. Clustering massive datasets from arbitrary Gaussian mixtures. *2002 Joint Statistical Meetings*. New York, New York, August, 2002.
17. Data mining tutorial. *EPA 2001 Statistics Workshop*. Philadelphia, Pennsylvania, May, 2001.
18. Robust aggregated multiple partitioning: RAMPing up the  $k$ -means algorithm. *2001 Joint Statistical Meetings*. Atlanta, Georgia, August, 2001.
19. Clustering massive datasets. *1998 Joint Statistical Meetings*. Dallas, Texas, August, 1998.
20. Synthetic resampling methods for variance estimation in parametric images. *1997 Mid-Atlantic Probability and Statistics Day*. Baltimore, Maryland, October, 1997.
21. Estimating the variability of reconstructed PET data. *1996 Spring Meetings, Pacific North West Statistics Meetings*. Seattle, Washington, April, 1996. (Poster presentation).
22. Estimating variability in PET reconstructions. *1995 Joint WNA/IMS Meetings*. Palo Alto, California, June, 1995.

### Other Invited Professional Presentations:

1. Reduced-rank tensor-on-tensor regression and tensor-variate analysis of variance. *Statistics Seminar*, Pennsylvania State University, University Park, Pennsylvania, November, 2022.
2. Exploratory factor analysis of data on a sphere. *Statistics Colloquium*, Naval Postgraduate School, Monterey, California, May, 2022.
3. Exploratory factor analysis of data on a sphere. *Statistics Colloquium*, University of Texas Rio Grande Valley, Brownsville, Texas, December, 2021.
4. Exploratory factor analysis of data on a sphere. *Statistics Colloquium*, Iowa State University, Ames, Iowa, August, 2020.
5. Kernel nonparametric overlap-based syncytial clustering. *Statistics Colloquium*, University of Iowa, Iowa City, Iowa, October, 2019.
6. Kernel nonparametric overlap-based syncytial clustering. *Statistics Colloquium*, Iowa State University, Ames, Iowa, October, 2019.
7. Kernel nonparametric overlap-based syncytial clustering. *Statistics Seminar*, McGill University, Montreal, Quebec, April, 2018.
8. FAST adaptive smoothed thresholding for improved activation detection in low-signal fMRI. *Department of Statistics Colloquium*, Iowa State University, Ames, Iowa, February, 2017.
9. Improved activation detection in single-subject fMRI studies. *Big Data Seminar Series*, Iowa State University, Ames, Iowa, November, 2016.
10. Efficient  $k$ -means semi-supervised clustering for massive datasets. *Department of Statistics Colloquium*, National University of Singapore, Singapore, May, 2016.
11. Assessing significance in clustering with effortless application to massive datasets. *Department of Statistics Colloquium*, Oregon State University, Corvallis, Oregon, March, 2015.
12. Accounting for scatter in clustering. *College Colloquium*, Culverhouse College of Business, University of Alabama, Tuscaloosa, Alabama, December, 2013.
13. A GCV approach to bandwidth selection in positron emission tomography reconstruction. *Statistics Colloquium, Département de mathématiques et de statistique*, Université de Montréal, Montreal, Canada, November, 2013.
14. Assessing significance in clustering. *Biostatistics Department Colloquium*, Columbia University, New York, New York, October, 2013.
15. A GCV approach to bandwidth selection in positron emission tomography reconstruction. *PET Working Group Seminar*, Columbia University, New York, New York, October, 2013.
16. Assessing significance in finite mixture models. *Bayesian and Inter-disciplinary Research Unit colloquium*, Indian Statistical Institute, Kolkata, India, April, 2013.
17. Assessing significance in clustering. *College Colloquium*, College of Science and Mathematics, North Dakota State University, Fargo, North Dakota, November, 2010.
18. Assessing significance in clustering. *Statistics Colloquium*, Department of Statistics, North Carolina State University, Raleigh, North Carolina, November, 2010.
19. Assessing significance in clustering. *Statistics Colloquium*, Department of Statistics, Iowa State University, Ames, Iowa, October, 2010.
20. Assessing significance in model-based clustering with application to studies of population genetic structure. *Statistics Seminar Series, Statistical Center for HIV/AIDS Research & Prevention (SCHARP)*, Vaccines & Infectious Diseases Institute (VIDI), Fred Hutchinson Cancer Research Center, Seattle, Washington, March, 2010.
21. Assessing significance in finite mixture models. *Statistics Colloquium*, Fox School of Business, Temple University, Philadelphia, Pennsylvania, October, 2008.
22. Assessing significance in finite mixture models. *Statistics Colloquium of McGill University, University of Montreal, Concordia University, University of Quebec at Montreal*, Concordia University, Montreal, Canada, October, 2008.
23. Clustering in the presence of scatter. *Department of Statistics Colloquium*, Texas A&M University, College Station, Texas, November, 2007.

24. GCV estimation of bandwidth in positron emission tomography reconstruction. *Department of Statistics and Statistical Laboratory Colloquium*, Iowa State University, Ames, Iowa, October, 2006.
25. Reliability assessment in fMRI studies: A test-retest estimation approach. *Applied Statistics Seminar Colloquium*, Indian Statistical Institute, Kolkata, India, May, 2005.
26. Statistical issues in functional imaging: From the operating room to hollywood. *VIGRE Seminar Series in Statistical Computing*, Department of Statistics and Statistical Laboratory, Iowa State University, October, 2004.
27. Reliability assessment in fMRI studies: A test-retest estimation approach. *VIGRE Seminar Series in Statistical Computing*, Department of Statistics and Statistical Laboratory, Iowa State University, September, 2003.
28. Clustering massive datasets from arbitrary mixtures of Gaussian populations. *Department of Statistics and Statistical Laboratory Colloquium*, Iowa State University, April, 2003.
29. Reliability assessment in fMRI studies: A test-retest estimation approach. *Department Colloquium*, Vanderbilt University Division of Epidemiology and Biostatistics, Nashville, Tennessee, March, 2003.
30. Indexing data quality indicators: A multiple-criteria decision-making approach. *Seminar*, Office of Information Analysis and Access, United States Environmental Protection Agency, Washington, DC, September, 2002.
31. Bayesian reconstruction in synthetic magnetic resonance imaging. *Statistics Seminar*, Biomathematics and Statistics Scotland (BIOSS), University of Edinburgh, Edinburgh, Scotland, April, 2001.
32. Bayesian reconstruction in synthetic magnetic resonance imaging. *Statistics Seminar*, University of Nottingham, Nottingham, United Kingdom, April, 2001.
33. Optimal Bayesian decisions on collecting coin-boxes. *Applied Statistics Seminar*, Indian Statistical Institute, Calcutta, India, March, 2001.
34. Statistical data mining — what? Why and where? *Part I of Special Invited Panel Series*, Department of Statistics, Case Western Reserve University, Cleveland, Ohio, February, 2001.
35. Statistical data mining — how? *Part II of Special Invited Panel Series*, Department of Statistics, Case Western Reserve University, Cleveland, Ohio, February, 2001.
36. Statistical data mining — the future. *Part III of Special Invited Panel Series*, Department of Statistics, Case Western Reserve University, February, 2001.
37. Data mining – a statistical perspective. *Special Statistics Colloquium*, Office of Environmental Information, United States Environmental Protection Agency, Washington D. C., February, 2001.
38. Optimal Bayesian decisions on collecting coin-boxes. *Joint Mathematics and Statistics Colloquium*, Department of Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, Maryland, October, 2000.
39. Clustering massive datasets. *Statistics Colloquium*, Division of Theoretical Statistics and Mathematics, Indian Statistical Institute, Calcutta, India, March, 2000.
40. Clustering massive datasets. *Statistics Colloquium*, Department of Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, Maryland, February, 2000.
41. Clustering massive datasets. *Statistics seminar*, Applied Research Division, AT& T Research, Florham Park, New Jersey, March, 1999.
42. Clustering massive datasets. *Statistics colloquium*, Applied Research Area, Telcordia Technologies, Morristown, New Jersey, March, 1999.
43. Variance estimation in functional images. *Biostatistics Colloquium*, Department of Biostatistics, University of Michigan, Ann Arbor, Michigan, February, 1999.
44. Variance estimation in functional images. *Statistics Colloquium*, Department of Statistics, Carnegie Mellon University, Pittsburgh, Pennsylvania, November, 1998.
45. Variance estimation in functional images. *Statistics Colloquium*, Department of Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, Maryland, March, 1998.
46. Synthetic resampling methods for variance estimation in parametric images. *Statistics Colloquium*, Department of Mathematics, University of Maryland, College Park, College Park, October, 1997.
47. Synthetic resampling methods for variance estimation in parametric images. *Seminar*, Department of Electrical Engineering and Computer Science, University of Maryland, Baltimore County, Baltimore, Maryland, September, 1997.
48. Synthetic resampling methods for variance estimation in parametric images. *Statistics seminar*, Statistics and Mathematics Division, Indian Statistical Institute, Calcutta, India, July, 1997.
49. An affirmative action scheme for clustering massive datasets, with application to software patch classification. *Statistics colloquium*, Microsoft Research, Redmond, Washington, May, 1997.
50. Variability estimation in PET reconstructions. *Statistics seminar*, Department of Mathematics and Statistics, University of Massachusetts, Amherst, Massachusetts, March, 1997.
51. Variability estimation in PET reconstructions. *Statistics Colloquium*, Department of Statistics, Case Western Reserve University, Cleveland, Ohio, February, 1997.

52. Variability estimation in PET reconstructions. *Statistics Colloquium*, Department of Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, Maryland, February, 1997.
53. Variability estimation in PET reconstructions. *Statistics Colloquium*, Department of Statistics, Michigan State University, East Lansing, Michigan, February, 1997.
54. Variability estimation in PET reconstructions. *Statistics seminar*, Applied Research Area, Bell Communications Research, Morristown, New Jersey, April, 1996.
55. Variability estimation in PET reconstructions. *Statistics Colloquium*, Division of Statistics, University of California, Davis, Davis, California, February, 1996.
56. Bayesian reconstruction in synthetic magnetic resonance imaging. *Applied Statistics Seminar*, Indian Statistical Institute, Calcutta, India, September, 1994.
57. On best equivariant estimation and admissibility of mean direction vector in Langevin populations. *Graduate Seminar*, Department of Statistics, University of Washington, Seattle, Washington, November, 1992.
58. On best equivariant estimation and admissibility of mean direction vector in Langevin populations. *Applied Statistics Seminar*, Indian Statistical Institute, Calcutta, India, September, 1992.

### **Mentored Student Awards and Honors:**

1. 2025: Pal, S.\*, ASA Section on Medical Device and Diagnostics Student Paper Competition award for “Tensor-on-Tensor Time Series Regression for Integrated One-step Analysis of fMRI Data.”
2. 2023: Pal, S.\*, ASA Section on Statistical Computing and Graphics Student Paper Competition award for “Fast matrix-free methods for model-based personalized synthetic MR imaging.”
3. 2023: Ghosal, S.\*, Student Poster Award at the 2023 International Indian Statistical Association conference award for “The envelope of a complex Gaussian random variable.”
4. 2022: Llosa-Vite, C.\*, First place, ASA Section on Statistics in Imaging Student Paper Competition award for “Reduced-Rank Tensor-on-Tensor Regression and Tensor-variate Analysis of Variance.”
5. 2022: Llosa-Vite, C.\*, Runners’-up, Statistical Methods in Imaging Student Paper Competition award for “Tensor-variate Elliptically Contoured distributions with Application to Image Learning.”
6. 2022: Pal, S.\*, International Indian Statistical Association Student Paper competition award for “Model-based Personalized Synthetic Magnetic Resonance Imaging.”
7. 2022: Pal, S.\*, Outstanding Student Presentation Award: Honorable Mention at the 21st Conference on Artificial Intelligence for Environmental Science, held as part of the 102nd American Meteorological Society Annual meeting award for “‘Blowin’ in the wind” - Diagnosing the Probability that a Severe Thunderstorm Wind Report is Truly Due to Severe Intensity Wind Event.”
8. 2021: Llosa-Vite, C.\*, People’s Choice Award, 3MT: Three Minute Thesis Competition, Iowa State University award for “Assessing Suicide Risk Using Statistics.”
9. 2021: Zhu, Y.\*, ASA Section on Statistical Computing and Graphics Student Paper Competition award for “Three-dimensional radial visualization of high-dimensional mixed-featured datasets.”
10. 2021: Thompson, G. Z.\*, Joint first place, ASA Section on Statistics in Imaging Student Paper Competition award for “CatSIM: A categorical image similarity metric.”
11. 2020: Dai, F.\*, ASA Section on Statistical Computing and Graphics Student Paper Competition award for “A matrix-free likelihood method for exploratory factor analysis of high-dimensional gaussian data.”
12. 2019: Dai, F.\*, Student Poster award at Second Midwest Machine Learning Symposium award for “FAD: factor analysis of data.”
13. 2018: Amodóvar-Rivera, I. A., Second place, ASA Section on Medical Devices and Diagnostics Student Paper Competition award for “FAST Adaptive Smoothing and Thresholding for Improved Activation Detection in Low-Signal fMRI.”
14. 2014: Thompson, G. Z.\*, ASA Section on Statistical Computing and Graphics Student Paper Competition award for “An Adaptive Method for Lossy Compression of Big Images.”
15. 2012: Pazdernik, K. T.\*, ASA Section on Statistical Computing and Graphics Student Paper Competition award for “Efficient Maximum Likelihood Estimation for Fixed Rank Kriging.”
16. 2011: Chen, W.-C.\*, ASA Section on Statistical Learning and Data Mining award for “A New AECM Algorithm Tuned to a Faster Beat for Model-Based Clustering of Regression Time Series Data.”

### **Ph. D. Students:**

#### **Major Professor (Dissertation Advisor) of Dissertation Advisees:**

1. C. Llosa-Vite\* (2022, awarded by ISU, currently Senior Statistician, Sandia National Laboratories).
2. G. Z. Thompson\* (2021, awarded by ISU, currently Data Engineering Technical Leader, Cisco Systems).
3. Y. Zhu\* (2021, awarded by ISU, currently Staff Scientist, inDeed).

4. F. Dai\* (2020, awarded by ISU, currently Assistant Professor, Michigan Technological University; *Joint with Somak Dutta*).
5. N. Berry\* (2019, awarded by ISU, currently Statistical Scientist, Berry Consultants).
6. A. Lithio\* (2017, awarded by ISU, currently Research Scientist, Lily; *Joint with Dan Nettleton*).
7. I. A. Almodóvar-Rivera\* (2017, awarded by ISU, currently Assistant Professor, University of Puerto Rico).
8. K. T. Pazdernik\* (2013, awarded by ISU, currently Senior Data Scientist, Pacific Northwest National Laboratories).
9. D. W. Adrian\* (2011, awarded by ISU, currently Associate Professor, Grand Valley State University).
10. A. Peterson\* (2011, awarded by ISU, currently Teaching Professor, ISU; *Joint with Arka Ghosh*).
11. V. Melnykov\* (2009, awarded by ISU, currently Professor and Associate Department Head, University of Alabama).
12. I. P. Ramler\* (2008, awarded by ISU, currently Associate Professor, St. Lawrence University).
13. R. M. Guidi\* (2003, awarded by UMBC, currently Senior Adviser (Retired), Bank of Brazil).
14. S. Pal\* (2025, expected to be awarded by ISU, ISU; *Joint with Somak Dutta*).
15. J. Berlinski\* (2025, expected to be awarded by ISU, ISU).

#### Other Committee Memberships:

(i) E. Macias\* (2023, awarded by ISU, Major: Physics and Astronomy). (ii) S. Sanchez-Falero\* (2022, awarded by ISU, Major: Physics and Astronomy). (iii) B. Dawood\* (2021, awarded by ISU, Major: Aeronautical Engineering). (iv) P. Tiffany-Dantes\* (2020, awarded by ISU, Major: Agriculture and Biosystems Engineering). (v) J. Sepulveda-Quiroz\* (2018, awarded by ISU, Major: Physics and Astronomy). (vi) J. Liu\* (2013, awarded by ISU, Major: Statistics). (vii) X. Ma\* (2013, awarded by ISU, Major: Industrial and Manufacturing Systems Engineering). (viii) M. Riddles\* (2013, awarded by ISU, Major: Statistics). (ix) Y. Tian\* (2013, awarded by ISU, Major: Statistics). (x) W.-C. Chen\* (2011, awarded by ISU, Major: Statistics). (xi) W. Lu\* (2011, awarded by ISU, Major: Electrical and Computer Engineering). (xii) A. T. Pintar\* (2010, awarded by ISU, Major: Statistics). (xiii) M. Li\* (2010, awarded by ISU, Major: Statistics). (xiv) T. Bancroft\* (2009, awarded by ISU, Major: Statistics). (xv) H. Ma\* (2009, awarded by ISU, Major: Statistics). (xvi) C. Gao\* (2009, awarded by ISU, Major: Statistics). (xvii) W. Zhang\* (2007, awarded by ISU, Major: Statistics). (xviii) R. DeCook\* (2006, awarded by ISU, Major: Statistics). (xix) Y. Wang\* (2006, awarded by ISU, Major: Statistics). (xx) E. Moulton\* (2004, awarded by *University of Maryland, Baltimore*, Major: neuroscience). (xxi) X. Li\* (2000, awarded by UMBC, Major: Statistics). (xxii) X. Gu\* (2000, awarded by UMBC, Major: Statistics). (xxiii) Y.-T. Li\* (1999, awarded by UMBC). (xxiv) V. Mats\* (1997, awarded by UMBC, Major: Statistics). (xxv) S. Benidt\* (2018, expected to be awarded by ISU, Major: Statistics). (xxvi) Z. Gu\* (2024, expected to be awarded by ISU, Major: Statistics). (xxvii) S. Ghosal\* (2024, expected to be awarded by ISU, Major: Statistics).

#### External Dissertation Examiner:

1. S.-H. Leong\*, *University of Malaya*. Title: Mixture model clustering for very large datasets.

#### M. S. Students:

##### Major Professor (Creative Component Advisor) of Dissertation Advisees:

1. J. Berlinski\* (2021, awarded by ISU, last-known affiliation: ISU).
2. M. Silerio-Vázquez\* (2019, awarded by ISU, last-known affiliation: ISU).
3. C. Llosa-Vite\* (2018, awarded by ISU, last-known affiliation: ISU).
4. Y. Zhu\* (2018, awarded by ISU, last-known affiliation: ISU).
5. N. Berry\* (2016, awarded by ISU, currently Statistical Scientist, last-known affiliation: Berry Consultants).
6. J. P. Rodriguez-Ramirez\* (2016, awarded by ISU, last-known affiliation: California State University, Bakersfield).
7. I. A. Almodóvar-Rivera\* (2014, awarded by ISU, last-known affiliation: University of Puerto Rico, Mayaguez).
8. C. Bruno\* (2011, awarded by ISU, last-known affiliation: Hokua Software).
9. A. Peterson\* (2008, awarded by ISU, last-known affiliation: ISU; *Joint with Arka Ghosh*).
10. A. T. Pintar\* (2007, awarded by ISU, last-known affiliation: National Institute of Standards Technology).
11. W. Baumann\* (2006, awarded by ISU, last-known affiliation: Minnesota State Community and Technical College).
12. E. K. McMurtry\* (2005, awarded by ISU, last-known affiliation: Mayo Clinic).
13. N. M. Gray\* (2005, awarded by ISU, last-known affiliation: Mercer).
14. P. N. Hoekstra\* (2004, awarded by ISU, last-known affiliation: Expedia).
15. S. Majumdar\* (2025, expected to be awarded by ISU, last-known affiliation: ISU).

#### Other Committee Memberships:

(i) B. Fuhrman\* (2020, awarded by ISU, Major: Statistics). (ii) F. Dai\* (2019, awarded by ISU, Major: Statistics). (iii) Y. Wang\* (2017, awarded by ISU, Major: Statistics). (iv) B. Klinedinst\* (2017, awarded by ISU, Major: Interdisciplinary Graduate Studies). (v) E. G.

Sagas\* (2006, awarded by ISU, Major: Statistics). (vi) J. Gong\* (2005, awarded by ISU, Major: Electrical Engineering).

### Undergraduate Research Advising:

1. A. Washington<sup>†</sup>, ISU, 2018-19, Undergraduate Honors project.
2. B. Mulaosmanovic<sup>†</sup>, 2009, First Year Honors Mentoring Program.
3. M. Wallace<sup>†</sup>, ISU, 2009, First Year Honors Mentoring Program.
4. S. Wilkerson<sup>†</sup>, Xaviers' University, New Orleans, Louisiana, 2008, NSF Alliance (AGEP).
5. A. Bennett<sup>†</sup>, Simpson College, Indianola, Iowa, 2004, NSF VIGRE Undergraduate Summer Research Experience.

### Research Assistants Funded:

(i) J. Berlinski\* (2022–). (ii) S. Pal\* (2019–). (iii) C. Llosa-Vite\* (2019–22). (iv) G. Z. Thompson\* (2020). (v) G. Z. Thompson\* (2017–19). (vi) E. M. Goren\* (2018). (vii) N. M. Garton (2016–17). (viii) I. A. Almodóvar-Rivera\* (2014–16). (ix) W.-C. Chen\* (2008–10). (x) J. J. Riddles\* (2008–10). (xi) V. Melnykov\* (2007–09). (xii) D. Faden\* (2007–08). (xiii) K. T. Pazdernik\* (2007). (xiv) I. P. Ramler\* (2005–07). (xv) W. Baumann\* (2005–06). (xvi) T. McConville (2004–05).

### Classes taught:

#### Iowa State University:

(Note that “\*” denotes course conception and/or (re-)development while “<sup>†</sup>” denotes classes taught with additional online distance sections.)

1. Stat 105 – Introduction to Statistics for Engineers (S'14, F'14, S'15)
2. HONS 290 – Freshman Honors Program (S'06, S'09)
3. Stat 305 – Engineering Statistics (S'20, F'20, F'20)
4. Stat 330\* – Probability and Statistics for Computer Scientists and Engineers (F'09, F'10, S'12, F'13)
5. Stat 341 – Introduction to the Theory of Probability (F'17, S'19)
6. Stat 342 – Introduction to the Theory of Probability and Statistics – II (S'12)
7. Stat 407 – Multivariate Statistical Methods (F'18, F'19)
8. Stat 490H – Undergraduate Honors Research (S'19)
9. Stat 490 – Undergraduate Capstone Research (S'19)
10. Stat 501\* – Multivariate Statistical Methods (S'04, S'11<sup>†</sup>, S'12, S'13, S'16, S'17, S'18)
11. Stat 515 – Theory and Applications of the Non-linear Model (F'03)
12. Stat 579/5790\* – An Introduction to R (F'06, F'07, F'08, F'11<sup>†</sup>, F'15<sup>†</sup>, F'16<sup>†</sup>, F'17<sup>†</sup>, F'21, F'22, F'24)
13. Stat 580\* – Statistical Computing (S'05, S'06, S'07, S'08, S'10, S'13, S'14, S'20, S'24)
14. Stat 590 B\* – Deep Learning Methods for Statistics (F'23)
15. Stat 647\* – Advanced Multivariate Analysis (F'22)
16. Stat 680/690E/6800\* – Advanced Statistical Computing (F'05, F'07, F'08, F'09, F'11, F'14, F'16, F'18, F'21, F'24)

#### University of Maryland Baltimore County:

(Note that “\*” denotes course conception and/or (re-)development.)

1. Stat 121 – An Introduction to Statistics for the Social Sciences (Su'01)
2. Stat 350 – Statistics with Applications in the Biological Sciences (F'98, S'98, F'99, S'99, S'00, F'00, F'01, F'02)
3. Stat 355 – Probability and Statistics for Scientists and Engineers (F'96, F'97, S'98)
4. Stat 432 – A Tutorial Introduction to SAS (F'00, winter'01)
5. Stat 433\* – Introduction to Statistical Computing (S'02)
6. Stat 454\* – Applied Statistics (F'01)
7. Stat 490/CMSE 491C\* – An Introduction to Data Mining (S'02)
8. Stat 601\* – Applied Statistics (F'97, F'98)
9. Stat 625/700\* – Spatial Statistics and Image Analysis (S'98, F'99, F'00)
10. Stat 633/700\* – Statistical Computing (S'02)

### Professional Activities:

2025-27

Editor, *Sankhyā: The Indian Journal of Statistics, Series B: Applied and Inter-disciplinary Statistics.*

- 2024 Member, Scientific Program Committee, The 18th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CMStatistics), CFE-CMStatistics 2024, King's College, London, United Kingdom.
- 2024 Member, Scientific Program Committee, International India Statistical Association Conference 2024, Cochin University of Science and Technology, Kochi, India.
- 2024 Organizer, "Methodology for Analyzing Complex-structured Data" in International India Statistical Association Conference 2024, Cochin University of Science and Technology, Kochi, India.
- 2024 Organizer, "Improving statistical image analysis" in The 17th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2024), King's College, London, United Kingdom.
- 2023-24 Panelist for reviewing proposals submitted to Pathophysiological Basis of Mental Disorders and Addictions of the National Institutes of Health: *Temporary member*.
- 2023 Organizer, "Methodology for Structured Data" in The 17th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023), HTW Berlin, University of Applied Sciences, Berlin, Germany.
- 2023-present Member, ASA Committee on Publications Sub-Committee on Diversity and Inclusion.
- 2022 Organizer, "Recent Statistical Advances in Imaging" in The 16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2022), King's College, London, United Kingdom.
- 2022 Organizer, "Collaborative Case Study Session on *Engineering and Statistical Models for Error Quantifications in Comparative 3D Microscopy for Physical Match Analysis*" in Statistical Methods in Imaging Conference, Vanderbilt University, Nashville, Tennessee.
- 2020 Workshop on Recent Advances in Statistical Analysis of Imaging Data, Organizing Committee.
- 2018-22 Panelist for reviewing proposals submitted to Neural Basis of Psychopathology, Addictions and Sleep Disorders Study Section of the National Institutes of Health: *Standing committee member*.
- 2018-20 Editor, (Area: *Statistical Methodology*), *Statistical Analysis and Data Mining: The ASA Data Science Journal*.
- 2017-18 Panelist for reviewing proposals submitted to Neural Basis of Psychopathology, Addictions and Sleep Disorders Study Section of the National Institutes of Health: *Temporary member*.
- 2017 Organizer, Topic-contributed Session on "Clustering Methods for Big Data Problems" in 2017 Joint Statistical Meetings.
- 2017 Chair, Topic-Contributed Session on "Optimal Transport and Scalable Bayes: A Fruitful Synergy?" in 2017 Joint Statistical Meetings.
- 2017 Panelist for reviewing proposals submitted to Neural Basis of Psychopathology, Addictions and Sleep Disorders Section of the National Institutes of Health.
- 2017-present Member, ASA Committee on Publications.
- 2016 Organizer, Topic-contributed Session on "Novel Statistical Methodologies for Neuroimaging Data" in 2016 Joint Statistical Meetings.
- 2016-present Mentor to Evercita Eugenio, JSM Mentoring Program, American Statistical Association.
- 2015 Organizer and Chair, Topic-contributed Session on "Statistical Methods for Improved Processing and Analysis of fMRI Data" in 2015 Joint Statistical Meetings.
- 2015-present Mentor to J. L. Ding and Sandeep Saha, JSM Mentoring Program, American Statistical Association.
- 2014 Panelist for reviewing proposals submitted to Division of Mathematical Sciences - Statistics Program Panel of the National Science Foundation.
- 2014-present Mentor to Aymeric Stamm and Qiong Zhang, JSM Mentoring Program, American Statistical Association.
- 2012-14 Publications Officer, ASA Section on Statistics in Imaging.
- 2012-14 Member, Executive Committee, ASA Section on Statistics in Imaging.
- 2012 International Indian Statistical Association (IISA) Representative, 2012 Joint Statistical Meetings (JSM) Program Committee.
- 2012 Panelist for reviewing proposals submitted to Division of Mathematical Sciences - Statistics Program Panel of the National Science Foundation.
- 2011-12 Organizer, Invited Session on "Recent Advances and Unresolved Challenges in Statistical Genetics" in 2012 Joint Statistical Meetings.
- 2010-25 Editor, *Statistics Surveys*.
- 2010-11 Organizer, Invited Session on "Recent Advances in Finite Mixture Models and Clustering" in 2011 Joint Statistical Meetings.
- 2010 Organizer and Chair, Topic-Contributed Session on "Finite Mixture Models and Model-Based Clustering" in 2010 Joint Statistical Meetings.
- 2010 Chair, Session on "Methods for High-Dimensional Datasets" in Conference on Resampling Methods and High-dimensional Data, College Station, Texas.

2010	Reviewer for Senate Grants for Research and Scholars of the West Virginia University, Morgantown West Virginia.
2010-present	Founding Member, ASA Section on Statistics in Imaging.
2009	Organizer, Invited Session on “High-dimensional Methods” in Conference to Celebrate the 75th Anniversary of the Statistical Laboratory, Department of Statistics, Iowa State University, Ames, IA.
2008-22	Associate Editor, <i>Sankhyā: The Indian Journal of Statistics, Series A: Theoretical Statistics, Probability Theory and Stochastic Processes</i> .
2008-11	Reviewer for Discovery Grants of the Natural Sciences and Engineering Research Council of Canada.
2008-10	Associate Editor, <i>Statistics Surveys</i> .
2008	Panelist for reviewing proposals submitted to Scientific Computing Research Environments for the Mathematical Sciences (SCREMS) of the National Science Foundation.
2004	Panelist for reviewing proposals submitted to Mathematical and Computer Science Panel of the National Science Foundation.
2003	Organizer and Chair, “Session on MCMC computations for large-dimensional problems” in Joint Statistical Meetings, San Francisco, California.
2002-05	Editor, Section on Statistical Computing, American Statistical Association, <i>Statistical Computing and Graphics Newsletter</i> .
2002	Chair, “Invited Session on International Environmental Statistics” in TIES 2002, The International Environmental Society Meetings, Genova, Italy.
2001	Chair, Session on Applications of Nonparametrics in 2001 Joint Statistical Meetings, Atlanta, GA.
1999	Invited Participant, National Research Council (NRC) Workshop on “Statistical Methods for Reducing Uncertainty in Ocean Science Models,” National Academy of Sciences.
1997-05	Member, Executive Committee, Section on Statistical Computing, American Statistical Association.
1997-02	Continuing Education Co-Liason, Section on Statistical Computing, American Statistical Association.
1996	Reviewer for papers submitted to: 1996 IEEE Nuclear Science Symposium and Medical Imaging Conference, <i>Annals of Applied Statistics, Applied Soft Computing, Biological Psychiatry, Biometrics, Computational Statistics, Computational Statistics and Data Analysis, Entropy, Environmental and Ecological Journal, Human Brain Mapping, IEEE Transactions on Medical Imaging, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Information Sciences, Journal of Agricultural Biological and Environmental Statistics, Journal of Classification, Journal of Computational and Graphical Statistics, Journal of Environmental Statistics, Journal of Machine Learning Research, Journal of NeuroEngineering and Rehabilitation, Journal of Statistical Computation and Simulation, Journal of Statistical Education, Journal of Statistical Planning and Inference, Journal of Statistical Software, Journal of the American Statistical Association – Applications and Case Studies, Journal of the American Statistical Association – Theory and Methods, Journal of the Royal Statistical Society – Series C, Mathematical Programming, Naval Research Logistics, Naval Research Statistics, Neurocomputing, PLOS One, Pattern Analysis and Applications, R Journal, Statistica Sinica, Statistical Analysis and Data Mining, Statistics and Computing, Statistics and Its Interface, Statistics and Probability Letters, and Technometrics.</i>

### Departmental Service:

2023-24	Chair, Post-Tenure Review Committee, Iowa State University.
2023-24	Chair, Organizing Committee, Iowa State University Department of Statistics’ 75th Anniversary Research Conference, Iowa State University.
2022-24	Chair, Honors and Awards Committee, Iowa State University.
2021-26	Member, Advisory Committee on Promotion and Tenure, Iowa State University.
2021-22	Member, PhD Curriculum Review Committee, Iowa State University.
2021-22	Member, External Advisory Board Formation Committee, Iowa State University.
2021-22	Chair, Foundation Account Review Committee, Iowa State University.
2021-22	Member, Department Webpage Development and Maintenance Committee, Iowa State University.
2021-22	Member, Honors and Awards Committee, Iowa State University.
2020-present	Primary Affiliate Liason, National Institute of Statistical Sciences, Iowa State University.
2019-present	Mentor to Somak Dutta, Department of Statistics, Iowa State University.
2018-20	Member, Sustainability Committee, Iowa State University.
2017-18	Chair, Fall Colloquia, Iowa State University.
2017-present	Member, Computation Advisory Committee, Iowa State University.
2016-17	Member, Advisory Committee to the Chair, Iowa State University.



2015-17	Chair, Computation Advisory Committee, Iowa State University.
2014-16	Chair, Library Liason, Iowa State University.
2014-16	Coordinator, Fall Working Group on Semi- and Unsupervised Learning in Massive Datasets, Iowa State University.
2014-15	Member, Memorial Lecture Series, Iowa State University.
2014-15	Member, Faculty Search Committee, Iowa State University.
2013-14	Member, Computation Advisory Committee, Iowa State University.
2013-present	Mentor to Kris de Brabanter, Department of Statistics, Iowa State University.
2012-14	Member, Honors and Awards Committee, Iowa State University.
2012-13	Co-chair, Big Data Faculty Search Committee, Iowa State University.
2011-12	Chair, Fall Colloquia, Iowa State University.
2010-13	Member, Graduate Admissions Committee, Iowa State University.
2009-13	Coordinator, Fall Working Group in Statistical Computing and Computationally-Intensive Methods, Iowa State University.
2009-10	Chair, Fall Colloquia, Iowa State University.
2008-09	Chair, Fall Colloquia, Iowa State University.
2008-09	Chair, Computation Advisory Committee, Iowa State University.
2008-09	Member, Graduate Admissions Committee, Iowa State University.
2008-09	Member, Memorial Lecture Series, Iowa State University.
2007-08	Co-chair, Computation Advisory Committee, Iowa State University.
2007-08	Chair, Journals Rankings Committee, Iowa State University.
2006-07	Member, Faculty Search Committee, Iowa State University.
2005-09	Coordinator, NSF RTG/VIGRE Working Group on Statistical Computing, Iowa State University.
2004-06	Member, Strategic Planning Committee, Iowa State University.
2004	Chair, Computation Advisory Committee, Iowa State University.
2003-11	Member, Computation Advisory Committee, Iowa State University.
2003-04	Chair, Spring Colloquia, Iowa State University.
2001-03	Member, Department Undergraduate Committee, University of Maryland, Baltimore County.
1999-01	Member, Department Computer Committee, University of Maryland, Baltimore County.
1998	Acting chair, Department Computer Committee, University of Maryland, Baltimore County.
1994-95	Organizer, 1994-1995 Statistics Department Student Seminar Series, University of Washington.

### University and Community Service:

2022-present	Member, CAPER: College of Agriculture and Life Sciences (CALs) Advisory Panel for Engaged Research, Iowa State University.
2017-20	LAS Senate Caucus Representative, Research Policy and Planning Committee, Iowa State University.
2016-19	College of Liberal Arts and Sciences, LAS Honors and Awards Committee, Iowa State University.
2010-12	LAS Senate Caucus Representative, Faculty Appeals Committee, Iowa State University.
2009-12	Departmental Representative, Faculty Senate, Iowa State University.
1999-00	Member, Faculty Classroom Instructional Technology Committee, University of Maryland, Baltimore County.
1997-03	Volunteer, UMBC Graduate School Open House.