

SUPRATEEK KUNDU, PhD

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Website

- <https://sites.google.com/view/suprateek>

Research Interests

- Bayesian networks, factor models, non-and semi-parametric Bayes, high dimensional feature selection, integrative methods, latent variable models, model selection, deep learning, neuroimaging statistics, statistical methods in genetics

Professional Experience

- Director, Data Analytics and Biostatistics Core for Department of Medicine, Emory University, June 1, 2019 - *present*
- Assistant Professor, Department of Biostatistics, Emory University, July 2014 - present.
- Postdoctoral research associate at Department of Statistics, Texas A&M University, and Department of Biostatistics, MD Anderson. Sep 2012 - Jun 2014.
- Research assistant at Translational and Clinical Sciences Institute, UNC Chapel Hill. 2008-2012.

Education

- PhD in Biostatistics at University of North Carolina at Chapel Hill (2008 - 2012), under guidance of Prof. David B. Dunson (Duke University).
Thesis title - "*Bayesian Non-parametric Methods for Conditional Distributions*".
- Postgraduation: MStat, Indian Statistical Institute, Kolkata, India, 2006-2008.
Passed with First division with Distinction.
- Undergraduation: BSc. Honors in Statistics, Presidency College, Kolkata, India, under Calcutta University, 2003-2006.
Passed with First Class.

Affiliations

- Associate Editor for *Biometrics*, July 1, 2019- present
- Core Faculty member at The Center for Biomedical Imaging Statistics
- IPA with The Center for Visual and Neurocognitive Rehabilitation, VA Medical Center, Atlanta.

Teaching Experience

- Instructor for '*Advanced Topics in the Analysis of Neuroimaging Data*', Department of Biostatistics, Emory University, Spring 2020. Course is 2 credits and taught jointly with Dr. Ying Guo.

- Instructor for ‘*Advanced Linear Models*’, Department of Biostatistics, Emory University, Fall, 2015-2019. This course is 4 credits and a core curriculum course for Bios doctoral students
- Co-Lecturer for ‘*Bios Introduction to Large Scale Biomedical Data Analysis*’, Department of Biostatistics, Emory University, Fall 2016-2019.
- Hosted the *Bayesian Journal Club* from 2015-2017.
- Co-Instructor for ‘*Advanced Bayesian Modeling and Computation*’, Department of Statistics, Texas A&M, Spring 2013.
- Teaching assistant for ‘*Principles Of Experimental Analysis*’, Department of Biostatistics, UNC Chapel Hill, spring 2011.

Current Funding Support

- **Director** of Data Analytics and Biostatistics Core in *Department of Medicine*, Emory University. Supported at 15% effort.
- R01MH120299-01 ‘Integrative Brain Network-Based Analysis for Heterogeneous and Multimodal Neuroimaging Data’, **Role: Principal Investigator**, *National Institute of Mental Health*, 09/2019-08/24, 30% effort.
- 508D75011 ‘VA IPA Research and Development Program’, **Role: Principal Investigator**, *US Department of Veterans Affairs*, 10/1/17-9/30/21, 20% effort.
This assignment includes the following funded awards from VA (Role: Co-I).
 - IK2RX002934-01A1 “Multimodal Neuroimaging: Advanced Tracking of Longitudinal Aphasia Recovery” (PI: Krishnamurthy), VA RR& D Career Development Award (CDA-2), 01/01/2019- 01/01/2024.
 - I01 RX002825-01A2, “Graded Intensity Aerobic Exercise to Improve Cerebrovascular Function and Performance in Aged Veterans” (PI: Nocera), Merit Review Award Veterans Health Administration, 02/2019 - 02/2023.
- OPP1126780 ‘Child Health and Mortality Prevention Surveillance (CHAMPS) Network’, (PI: Koplan), **Role: Co-I**, *Bill & Melinda Gates Foundation*, 2015-2025, 25% effort.
- P50 AG02568815S1 “Emory Alzheimer’s Disease Center”, (PI: Levey), **Role: Co-I**, *National Institute on Aging*, **Role: Co-I**, 6/15/19-4/30/20, 7% effort.
- I01 RX003093 “Intention Treatment for Anomia: Investigating Dose Frequency Effects and Predictors of Treatment Response to Improve Efficacy and Clinical Translation” (PI: Rodriguez), *Merit Review Award Veterans Health Administration*, **Role: Co-I**, 04/01/2020- 03/31/2024, 10% effort. This grant is pending and received an Intent to Fund letter from VA.

Completed Funding Support

- 1U01CA187013-01 “Resources for development and validation of Radiomic analyses & Adaptive Therapy”, (MPI: Sharma & Prior), **Role: Co-I**, *National Cancer Institute*, 07/01/14 06/30/19, 15% effort.
- UL1TR002378 ‘Integrative Bayesian Modeling of PTSD severity using brain networks and trauma exposure’, **Role: Principal Investigator**, *GA CTSA BERD*. Amount 20,000USD. 07/2017 - 06/2018.

Pending Support

- R01 DA050831-01 “Post-trauma Anhedonia, Neural Connectivity, and Escalating Substance Use in Recently-traumatized Individuals” (PI: Fani), **Role: Co-I**, *National Institutes of Mental Health*. 04/01/2020-03/31/2025.
- R01 NR018658-01A1 “Interval-based exercise for improved cerebrovascular health in adults at-risk for AD” (PI:Nocera), **Role: Co-I**, *National Institutes of Health*. 04/01/2020-03/31/2023.

Manuscripts (published or under invited revision)

⁺ = student advisee of SK, * = corresponding author

Methods:

1. **Kundu***, S., and Risk, B., 2019+. Bayesian Matrix Normal Graphical Models for Brain Network Estimation, *Revision invited (favorable review)*, *Biometrics*.
2. **Kundu***, S., Lukemire⁺ J., Wang, Y., and Guo, Y., 2019+. A Novel Joint Brain Network Analysis for Longitudinal Alzheimer's Disease Data, *Second Revision invited (favorable review)*, *Nature Scientific Reports*.
3. Higgins, I.⁺, **Kundu**, S., Choi, K.S., and Mayberg, H., and Guo, Y.* , 2019. A Differential Degree Test for Comparing Brain Networks. *Human Brain Mapping*.
4. **Kundu***, S., and Suthaharan, S., 2019. Privacy-Preserving Predictive Model Using Factor Analysis for Neuroscience Applications, *IEEE 5th Intl Conference on Big Data Security on Cloud (BigDataSecurity)*, *IEEE Intl Conference on High Performance and Smart Computing, (HPSC) and IEEE Intl Conference on Intelligent Data and Security (IDS)*, Washington, DC, USA, 2019, pp. 67-73. doi: 10.1109/BigDataSecurity-HPSC-IDS.2019.00023 (acceptance rate 19.7%).
5. Solis-Lemus, C. S., Ma, X.⁺, Hotstetter II, M., **Kundu***, Peng, Q., Pimental, D., 2019. A Deep Learning Framework for Predicting Functional Markers in Flow Cytometry Data. *Statistical Modeling in Biomedical Research - Contemporary Topics and Voices in the Field by Springer Nature*. Edited by Yichuan Zhao and Ding-Geng Chen. **Article invited by Editors**
6. Li, Z., Chang, C., **Kundu**, S., and Long, Q. 2018. Bayesian Generalized Biclustering Analysis via Adaptive Structured Shrinkage. *Biostatistics*, kxy081, <https://doi.org/10.1093/biostatistics/kxy081>.
7. Chang, C., **Kundu**, S.* , and Long, Q., 2018. Scalable Bayesian Variable Selection for Structured High Dimensional Data, *Biometrics*, doi: 10.1111/biom.12882. PubMed PMID: 29738602. **Recipient of travel award from International Society for Bayesian Analysis**
8. Higgins, I.⁺, **Kundu**, S* . and Guo, Y., 2018. Integrative Bayesian analysis of brain functional networks incorporating anatomical knowledge, *NeuroImage*, Volume 181, Pages 263-278, ISSN 1053-8119. **Received media coverage by the popular website ScienceTrends: <https://sciencetrends.com/the-structure-of-spontaneous-brain-activity/> Recipient of the Student Paper Award at Annual Conference on Statistical Methods in Imaging sponsored by ASA Imaging Section, 2017**
9. **Kundu**, S.* , Ming⁺, J., Pierce, J., McDowell, J., and Guo, Y., 2018. Estimating Dynamic Brain Functional Networks Using Multi-subject fMRI Data, *NeuroImage*, Volume 183, Pages 635-649, ISSN 1053-8119.
10. Lukemire, J.D.⁺, **Kundu**, S* ., Pagnoni, G., and Guo, Y. , 2019+, Bayesian Joint Modeling of Multiple Brain Functional Networks, *Accepted, Journal of the American Statistical Association*.
11. **Kundu**, S.* , Cheng, Y., Shin, M., Manyam, G., Mallick, B.K., Baladandayuthapani, V. , 2018. Bayesian Variable Selection with Structure Learning: Applications to Integrative Genomics, *PLOS ONE*, 13(7): e0195070 <https://doi.org/10.1371/journal.pone.0195070>.
12. **Kundu**, S.* , Mallick, B.K., and Baladandayuthapani, V., 2018. Efficient Bayesian Regularization for Graphical Model Selection, *Bayesian Analysis*, advance publication, doi:10.1214/17-BA1086
13. **Kundu**, S.* and Kang, J., 2016. Semi-parametric Bayes Graphical Models Incorporating Covariates for Imaging Genetics Applications, *STAT*, 6(1), 322-337.
14. **Kundu**, S.* , and Dunson, D. , 2014. Bayesian Variable Selection in Semi-parametric Linear Models, *Journal of the American Statistical Association, Theory and Methods*, 109, 437-447. **An earlier version of the article was the recipient of Section on Bayesian Statistical Science student paper award, JSM 2012**

15. **Kundu**, S.* , and Dunson, D. , 2014. Latent Factor Models for Density Estimation, *Biometrika*, 101, 641-654. **An earlier version of the article was the recipient of ENAR student paper award, 2011**
16. Gouskova, N.A., **Kundu**, S., Imrey, P.B., Fine, J.P., 2013, Number Needed to Treat for Time to Event Data with Competing Risks, *Statistics in Medicine*, 33, 181-192.

Collaborative:

1. Krishnamurthy, V., Krishnamurthy, L.C., Drucker, J.H., Ji, B., Hortman, K., Roberts, S.R., Mammino, K., Tran, S.M., Gopinath, K., McGregor, K.M., Rodriguez, A.D., Qiu, D., **Kundu**, S., Crosson, B., Nocera, J.R., 2019+, Neuro-sensitization of language fMRI signals using resting cerebral blood flow measures in an aging model. First revision invited, *Frontiers in Neuroscience*.
2. Krishnamurthy, L.C., Krishnamurthy, V., Rodriguez, A.D., McGregor, K.M., Champion, G.N., Hortman, K., Roberts, S.R., Harnish, S.M., Belagaje, S.R., **Kundu**, S., Benjamin, M.L., Gopinath, K., Rosenbek, J.C., McCouch1, N., and Crosson, B.A., 2019+. Not all lesioned tissue is equal: A new look at chronic stroke with Tissue Integrity Gradation via T2w T1w Ratio (TIGR), Second Revision Invited. *Neuroimage Clinical*.
3. Hsu, D., Chokshi, F. H., Hudgins, P. A., **Kundu**, S., Beitler, J. J., Patel, M. R., & Aiken, A. H., 2019. Predictive Value of First Posttreatment Imaging Using Standardized Reporting in Head and Neck Cancer. *Otolaryngology - Head and Neck Surgery*.
4. Hanna TN, **Kundu** S, Singh K, Horny M, Wood D, Prater A, Duszak R Jr. Emergency department imaging superusers. *Emergency Radiology*, 2018 Nov 15. doi:10.1007/s10140-018-1659-y
5. Sule, P., Tilwawala, R., Mustapha, T., Hassounah, H., Noormohamed, A., **Kundu**, S., Graviss, E., Walkup, G., Kong, Y., and Cirillo, J. Rapid Tuberculosis Diagnosis Using Reporter Enzyme Fluorescence (REF). *Journal of Clinical Microbiology*, 2019, doi:10.1128/JCM.01462-19,
6. Chokshi, F.H., Kang, J., **Kundu**, S., Castillo, M. Bibliometric Analysis of Manuscript Title Characteristics Associated With Higher Citation Numbers: A Comparison of Three Major Radiology Journals, AJNR, AJR, and Radiology. *Current Problems in Diagnostic Radiology*, Nov 2016, 45(6):356-360.

Manuscripts Under Review

1. Xin⁺, M., **Kundu**^{*}, S., and Stevens, J. (2019+). Semi-parametric Bayes Regression with Network Valued Covariates. <https://arxiv.org/abs/1910.03772> (pertaining to the NIH award R01MH120299-01)
2. **Kundu**^{*}, S., Ming⁺, J., and Stevens, J. (2019+). Dynamic Brain Functional Networks Guided By Anatomical Knowledge. <http://arxiv.org/abs/1910.03577> (pertaining to the NIH award R01MH120299-01)
3. Lyles, R.H., Cunningham, S.A., **Kundu**, S., Bassat, Q., Mandomando, I., Sacoar, C., Akelo, V., Onyango, D., Zielinski-Gutierrez, E., Whitney, C.G., Blau, D., and Taylor, A.W., 2019+. Extrapolating Sparse Gold Standard Cause of Death Designations to Characterize Broader Catchment Areas. (*Related to the CHAMPS project*)
4. Beret, A., Lai, L., Xu, Y., Zheng, Z., **Kundu**, S., Lennox, J., Waldrop-Valverde, D., Franklin, D., Letendre, S., Anderson, A., 2019+. CSF inflammatory cells are related to cognition and neuronal damage in HIV-infected individuals. (*Result of collaborative research under DAB*)

Manuscripts Under Preparation

1. Min⁺, J., **Kundu**^{*}, S., Stevens, J. “Structurally Informed Fused Lasso Approach for Change Point Analysis”.
2. Joshi, S., Garlapati, C., Ye⁺, Y., Bhattarai, S., Singh, R., Mercer, R., Torres, M., **Kundu**, S., Aneja, R. “Integrated multi-omics approach to understand the role of exosomes in breast cancer chemoresistance”.

3. Wu, X., She, Y., **Kundu**, S., Sinha, D. (2019+). “Capturing Skewness and Sparsity in High-Dimensions”.

Awards and Honors

- Nominated for Dean’s Distinguished Dissertation Award by Department of Biostatistics, UNC Chapel Hill.
- Distinguished Student Paper Award at Eastern North American Region (ENAR) Conference, 2012, for the manuscript “Bayes Variable Selection in Semi-parametric Linear Models”.
- Student Paper Competition winner for the Section on Bayesian Statistical Science (SBSS), Joint Statistical Meetings, 2011, for the manuscript “Single Factor Transformation Priors for Density Regression”.
- Reynolds Fellowship offered by UNC for “... highest academic potential and the most impressive record of achievement in undergraduate education and work and life experiences”.
- 2009 Hardison scholarship offered by the Department of Biostatistics, UNC to “...outstanding applicant in the Department of Biostatistics to encourage studies in health informatics in the department”.
- Satia Scholarship offered by School of Public Health 2010, UNC for innovative Public health work in underdeveloped areas.
- Biostatistics International Travel Fund awarded by the Department of Biostatistics, UNC Chapel Hill, 2010.
- Stat Bowl champion, awarded by American Statistical Association at Joint Statistical Meetings, Miami, USA, 2011.
- Winning team member of Stat Bowl team champion, awarded by American Statistical Association at Joint Statistical Meetings, Miami, USA, 2011.
- Winning team member for 2011 American Statistical Association “Promoting the Practice and Profession of Statistics” Video Competition.
- Nominated for best teaching award in the Department of Biostatistics, Emory University, 2016-2017.
- *Featured Speaker* at the Georgia Statistics Day 2016.
- Awarded Fund for Innovative Teaching (FIT) grant (\$3000.00) by Center for Faculty Development & Excellence, Emory University, April 2017.
- Recipient of Young Investigator Travel Award at 11th Conference on Bayesian Nonparametrics, Paris, June 2017.
- Emory PI for research fellowship to study data privacy in fMRI data which was awarded to Dr. Shan Suthaharan at UNC-Greensboro, and funded by the Institute for Quantitative Methods and Theory at Emory University, 2018.
- *Featured Speaker* at Advanced Biomedical Engineering and Instrumentation Summit (ABEIS-2019), San Francisco, June 2019.
- Received travel funding to attend SAMSI Deep Learning Opening Workshop, SAMSI, Raleigh, NC, Aug 2019.
- Received 10th percentile score in first submission for the R01 proposal to NIMH (role: PI) titled *Integrative Brain Network-Based Analysis for Heterogeneous and Multimodal Neuroimaging Data*, Feb 2019.

Graduate Student Advisee Awards:

- Dissertation advisor for RSPH 2018 Livingston Fellow, Ixavier Higgins (jointly advised with Dr. Y Guo)
- Dissertation advisor for 2017 Statistical Methods in Imaging Conference Student Paper Award Winner, Ixavier Higgins (Jointly advised with Dr. Y. Guo)

- Dissertation advisor for First place winner, Senior Student Presentations 2019, Emory University, Joshua Lukemire (Jointly advised with Dr. Y. Guo)

Presentations and Workshops

- Presented “*Number Needed to Treat for Time to Event Data with Competing Risks*” at Eastern North American Region Conference, New Orleans, 2010.
- Presented “*Latent Factor Models for Density Estimation*” at 3rd International Conference of the ERCIM working group on Computing & Statistics, London, U.K., 2010.
- Presented “*Latent Factor Models for Density Estimation*” at Eastern North American Region Conference, Miami, 2011.
- Invited to attend Workshop on Sensing and Analysis of High-Dimensional Data, Duke University, Durham, USA, 2011.
- Invited presentation “*Bayes Variable Selection in Semi-parametric Linear Models*” at Joint Statistical Meetings, Miami, 2011.
- Presented “*Bayes Variable Selection in Semi-parametric Linear Models*” at Eastern North American Region Conference, Orlando, 2013.
- Invited to the LDHD workshop, SAMSI, Raleigh, NC, 2013.
- Invited presentation “*Bayes Regularized Graphical Model Estimation in High Dimensions*” at Department of Biostatistics, MD Anderson, Houston, TX, Nov 2013.
- Invited presentation “*Flexible Bayesian Approaches for Regression and Variable Selection*” at Department of Biostatistics, University of Florida, FL, Jan 2014.
- Invited presentation “*Bayesian Regularized Approaches for High-Dimensional Graphical Models*” at the Department of Statistics, University of California at Santa Cruz, Jan 2014.
- Contributed presentation “*Bayesian Variable Selection with Structure Learning: Applications to Integrative Genomics*” at the Joint Statistical Meetings, Seattle, 2015.
- Poster Presentation at the Organization of Human Brain Mapping (OHBM) in June 2016, Switzerland.
- Contributed Presentation “*Scalable Bayesian Variable Selection for Structured Data*” at Joint Statistical Meetings, Chicago, IL, 2016.
- Invited presentation “*Estimating Dynamic Brain Functional Networks Using Multi-subject fMRI Data*” at the ICSA 2016 conference, Georgia State University, Atlanta, GA 2016.
- Invited presentation at the Department of Biomedical Engineering, Emory University (Dr. Keilholz Lab) titled “*Estimating Dynamic Brain Functional Networks Using Multi-subject fMRI Data*”, 2016.
- *Featured Speaker* at the Georgia Statistics Day 2016.
- Invited presentation at the Joint Statistical Meetings 2017 titled “*Scalable Bayes Variable Selection for Structured High Dimensional Data*”
- Invited presentation at the ICSA 2018 conference titled “*Scalable Bayes Variable Selection for Structured High Dimensional Data*”
- Invited presentation at IISA 2018 titled “*Scalable Bayes Variable Selection for Structured High Dimensional Data*”, May, 2018.
- Invited for presenting “*Integrative Analysis of Brain Networks Incorporating Anatomical Knowledge*”, Joint Statistical Meetings, 2018.

- Invited talk scheduled at Department of Biostatistics, Virginia Central University, Jan 2019 titled “*Bayesian Matrix Normal Graphical Models for Brain Networks*”.
- Invited talk at Department of Biostatistics, U of Pennsylvania, Jan 2019 titled *Bayesian Matrix Normal Graphical Models for Brain Networks*
- Invited talk at Statistics in Medical Imaging conference, June 2019, UCI, CA titled *A Semi-parametric Bayesian approach for Regression with Network-valued Covariates*
- Invited talk at IEEE Big Data and Cybersecurity Conference, Washington D.C., titled *Privacy-preserving Factor Analysis Models for High-dimensional Neuroimaging Data*, May 2019.
- *Featured Speaker* at Advanced Biomedical Engineering and Instrumentation Summit (ABEIS-2019), San Francisco, June 2019.
- Invited talk at School of Business, Indian Institute of Technology, Delhi, India, June 2019, titled *Privacy-preserving Factor Analysis Models for High-dimensional Neuroimaging Data*
- Invited to Deep Learning Workshop, SAMSI, Raleigh, NC, Aug 12-16, 2019.
- Invited talk at Department of Biostatistics, UNC Chapel Hill, Sept 2019 titled *Integrative statistical methods for brain network analysis*
- Invited talk at Department of Statistics, Texas A&M University, Sept 2019 titled *Integrative statistical methods for brain network analysis*
- Invited to present the activities of the Data Analytics and Biostatistics Core program based in the Department of Medicine at the Emory Division of Digestive Diseases retreat at Callaway Resort & Gardens in Pine Mountain, Georgia, Oct 2019.
- Invited talk at iBRIGHT conference, Nov 2019, MD Anderson Cancer Research Center, Nov 2019 titled *Estimating Dynamic Brain Networks Using Change-point Analysis*

Other presentations/poster/abstracts as non-presenting co-author

- Hsu, D, Chokshi, FH, Hudgins PA, **Kundu**, S, Beitler, JJ, Patel, MR, & Aiken, AH. “NI-RADS Performance on First Post-Treatment FDG-PET/Contrast-Enhanced CT in Head and Neck Squamous Cell Carcinoma to Detect Residual Disease: ROC Analysis of Surgical and Non-Surgical Treatment Groups”. *Oral Presentation presented at: RSNA 2017; November, 2017; Chicago, IL, USA.*
- Hanna, TN, Singh, K, **Kundu**, S, Theriot, DM, Wood, D, Duszak, R. “Characterizing the Most Frequent Users of Emergency Department Imaging”. *Scientific Poster: American Society of Emergency Radiology, Toronto, Canada, September 2017*
- Hanna, TN, Singh, K, **Kundu**, S, Theriot, D, Wood, D, Duszak, R. “Emergency Department Imaging Super-users: Utilization Characteristics of the Most Resource Intense Patients”. *Scientific Presentation: Radiological Society of North America, Chicago, IL Nov 30, 2017.*
- Chang, C., **Kundu**, S., and Long, Q. “Bayesian Variable Selection Incorporating Biological Pathway Information Using Dependent Shrinkage Priors,” *Eastern North American Region Spring Meeting, Austin, TX, March 2016.*
- Chang, C., **Kundu**, S., and Long, Q. “Bayesian Variable Selection with Dependent Priors for Regularization Parameters,” *Joint Statistical Meeting, Seattle, WA, August 2015*
- Chang, C., **Kundu**, S., and Long, Q. “Scalable Bayesian Variable Selection for Structured High-Dimensional Data,” *International Society for Bayesian Analysis World Meeting, Sardinia, Italy, June 2016. Recipient of the Young Researchers Travel Award, International Society for Bayesian Analysis World Meeting, 2016.*

- Higgins, I., **Kundu**, S., and Guo, Y. “Anatomically Informed Estimation of Functional Brain Networks”, *Joint Statistical Meeting, Baltimore, MD, August 2017*
- Li, Z., Chang, C., **Kundu**, S., and Long, Q. “Bayesian Biclustering Analysis via Adaptive Structured Shrinkage”, *The 6th workshop on Biostatistics and Bioinformatics, Atlanta, GA. 2018*
- Li, Z., Chang, C., **Kundu**, S., and Long, Q. “Bayesian Biclustering Analysis via Adaptive Structured Shrinkage”, *ENAR 2018 Spring meeting, Atlanta, GA. March, 2018*
- Lukemire, J., **Kundu**, S., Pagnoni, G., and Guo, Y. Bayesian Joint Modeling of Multiple Brain Networks. *Eastern North American Region Meeting, 2018.*
- Lukemire, J., **Kundu**, S., Pagnoni, G., and Guo, Y. Bayesian Joint Modeling of Multiple Brain Networks. *Poster at Georgia Statistics Day 2018 Presentations*
- Lukemire, J., **Kundu**, S., Pagnoni, G., and Guo, Y. “Bayesian Joint Modeling of Multiple Brain Functional Networks”, *Joint Statistical Meetings 2019.*
- Lukemire, J., **Kundu**, S., Pagnoni, G., and Guo, Y. “Statistical Methods for Brain Network Estimation”. *Senior Student Presentations 2019, Department of Biostatistics, Emory University.*
- Guo, Y., **Kundu**, S., Higgins, I. “Statistical methods for exploring brain networks using multimodality neuroimaging”. *Joint Statistical Meetings (JSM), Vancouver, CA, Aug., 2018.*
- Higgins, I., **Kundu**, S., and Guo, Y. “Comparison of Functional Brain Networks via Correlation Preserving Random Networks”. *Contributed Session “Brain Structural and Functional Connectivity Analysis”. Joint Statistical Meetings (JSM), Vancouver, Canada, 2018.*
- Ma, X., **Kundu**, S., Stevens, J. “Latent scale prediction model for network valued covariates. *Poster at Georgia Statistics Day 2018.*
- Ma, X., **Kundu**, S., Stevens, J. “Latent Scale Prediction Model for Network Valued Covariates. *Poster at ENAR spring meeting 2019.*
- Ma, X., **Kundu**, S., Stevens, J. “Bayesian Network Manifold Regression. *Presentation at the EPICORE meeting at the Epidemiology Department, 2019.*
- Suthaharan, S., and **Kundu**, S. Illuminating privacy weaknesses in predictive models of fMRI data using compressed sensing and compressed learning. *Poster presented at Stanford Compression Workshop 2019 .*
- Guo, Y., **Kundu**, S., Lukemire, J., and Higgins, I. Statistical methods for reliable and reproducible brain network analysis. *Invited Session Advancing the statistical analysis of neuroimaging data. Joint Statistical Meetings (JSM), Denver, CO, Aug., 2019.*
- Anderson A.M., Tang, B., Vaida, F., Okwuegbuna, O., McClernon, D., Deutsch, R., **Kundu**, S., Cherner, M., Cookson, D., Crescini, M., Grant, I., Ellis, R.J., Letendre, S.L. “CSF CXCL-10 is associated with the presence of low-level CNS HIV during suppressive ART”. *Abstract submitted to Conference on Retroviruses and Opportunistic Infections (CROI), Chicago, IL, 2021.*

Grant Reviewer Experience

- Invited Reviewer for grant proposals in the Methodology, Measurement, and Statistics Program in NSF, Oct 2019.
- Invited reviewer for the NSF grant funding mechanism titled “Neural and Cognitive System (NCS) Panel D - P161646”, April 21-22 2016.

Journal Reviewer Experience

- Associate Editor for *Biometrics*, June 1, 2019-present.

- Served as journal referee for

Journal of American Statistical Association

Journal of the Royal Statistical Society

Annals of Applied Statistics

Journal of Computational and Graphical Statistics

Biometrics

Bayesian Analysis

Plos One

Biostatistics

NeuroImage

Bioinformatics

Australian and New Zealand Journal of Statistics

Computational Statistics and Data Analysis

BMJ Open

Current Medical Imaging

Book review *New Advances in Statistics and Data Science*, ICSA Book Series in Statistics by **Springer**

Professional Service Activities

- Appointed to the Committee for Student Paper Awards for Section on Bayesian Statistical Sciences (SBSS), Joint Statistical Meetings, 2016.
- Local organizing committee for Georgia Statistics Day in 2015-2017.
- Organized Student Poster Competition and obtain external sponsor for student prizes in Georgia Statistics Day 2017 at Emory.
- Helped set up the conference website and manage registrations and abstract submissions in Georgia Statistics Day 2017 at Emory.
- Chair and Organizer of ENAR Invited Session 2017 titled “Integrative Analysis for Brain Imaging Studies”.
- Designed and conducted a Webinar “Graphical Models with Applications to Brain Networks” for the GA Chapter of ASA, 2018.
- Chair for Invited Session titled “Bayesian Methods for Inverse Problems” at the Meeting for International Indian Statistical Association, University of Florida, 2018.
- Chair for contributed session titled “Computationally Intensive Bayesian Methodology” in Joint Statistical Meetings 2019.
- Served in the Scientific Organizing Committee and Committee for Student paper competition for Meeting of International Indian Statistical Association, Mumbai, Nov 2019.
- Appointed to the Committee for Student Paper Awards for the Meeting of International Indian Statistical Association, Mumbai, Nov 2019.
- Appointed to the Local Scientific Organizing Committee for Statistical Methods in Imaging Conference, Emory University, June 2020.
- Appointed to the Committee for Student Paper Awards for the Mental Health Section, Joint Statistical Meetings, 2019
- Appointed to the Committee for Student Paper Awards for Statistics in Imaging Section, Joint Statistical Meetings, 2019.

Service Activities at Emory

- Served as Biostatistics liaison for Emory STEM symposium in 2015-2016.
- Served in the Committee for Shepard Awards for Best MS thesis in Rollins School of Public Health, 2017-present.
- Seminar chair for Department of Biostatistics for Fall, 2015.
- Served in PhD admissions committee for Department of Biostatistics, in 2015-present.
- Served in qualifying examination committee for PhD qualifying exams in 2015-present.
- Served in the doctoral curriculum committee, Department of Biostatistics, Emory University.
- Served as Wellness Champion, Rollins School of Public Health.
- Member of Rollins School of Public Health Education Committee, Emory University.
- Conducted Yoga and Meditation Sessions for Students, Faculty and Staff at Emory.

Mentorship

Assistant Professors and Postdocs

- Mentor to Postdoc Dr. Changge Chang (Primary mentor: Dr. Qi Long).
Currently research faculty at University of Pennsylvania.
Recipient of Young Researchers Travel Award, International Society for Bayesian Analysis World Meeting, 2016.
- Mentor for VA Career Development award to Dr. Lisa Crystal Krishnamurthy titled "*Beyond lesion-language mapping in aphasia: A novel imaging-based prediction model*".
Funding received. Award period 07/2018-2020
- Mentor for K23-award submitted by Dr. Jessica Keller titled "*Neurobiology of treatment response in an intensive outpatient exposure therapy for PTSD*"
- Mentor for K23-award submitted by Dr. Sara Turbow, MD, MPH (Assistant Professor of Medicine Division of General Medicine and Geriatrics) titled "*iCAREFOR: Inter-hospital Care Fragmentation in Older Adults with Dementia*"

Doctoral Students

- Dissertation Advisor for Dr. Ixavier Higgins (2014-2019); co-advisor Dr. Ying Guo
Dissertation: Analysis of Functional Brain Networks. Graduated, currently at Eli Lilly
- Recipient of the Student Paper Award at Annual Conference on Statistical Methods in Imaging sponsored by ASA Imaging Section, 2017
- Recipient of RSPH Livingston Fellow, 2018
- Dissertation Advisor for Mr. Joshua Lukemire (2015-present, co-advisor Dr. Ying Guo)
-Recipient of First Prize in Senior Student Presentations 2019, Department of Biostatistics, Emory.
- Dissertation advisor for Mr. Jin Ming (2016-present)
- Dissertation advisor for Ms. Xin Ma (2016-present)
- Faculty Mentor to first year doctoral students Ms. Ye Yue and Mr. Sohail Nizam

- Dissertation Committee of Dr. Shi Ran
 - currently a doctoral student in London School of Economics

Masters Students

- Summer Research Supervisor for Ms. Ye Yue (Summer 2018)
 - Completed MS in Statistics from Columbia University
 - Currently first year doctoral student in the Department of Biostatistics, Emory University
- Masters thesis advisor for Ms. Junhan Fang (MS, 2014-2016). Joint with Dr. Ying Guo.
 - Thesis title “Between-group comparisons of structural and functional brain connectivity”
 - Currently doctoral student in Biostatistics at the University of Waterloo)
- Masters thesis advisor for Mr. Jin Ming (MS, 2014-2016)
 - Thesis title “A Bayesian approach for dynamic brain networks”
 - Currently doctoral student in Biostatistics & Bioinformatics at Emory University
- Masters thesis advisor for Mr. Praveen Suthaharan (MS, 2017-2019)
 - Thesis title “Latent Class Analysis for PTSD Subtype Discovery”.
 - Currently an intern in Computational Psychiatry Research at Harvard University, McLean Hospital under the supervision of Dr. Diego A. Pizzagalli
- Masters thesis committee for Mr. Yuchen Yan (2019)
 - Thesis title “Cell-type specific alternation of DNA methylation in Alzheimer’s Disease.”
- Masters Thesis committee for Mr. Zhifang Sang (2016)
 - Thesis title “Extending and Evaluating Scalable Markov chain Monte Carlo Algorithms for Big Data Problems ”

Memberships

- American Statistical Association (since 2010)
- International Biometric Society (since 2010)
- International Society for Bayesian Analysis (since 2011)
- International Indian Statistical Association (Lifetime Membership).

Software

- **EMSHS**: R package for for *Scalable Bayesian Variable Selection for Structured High Dimensional Data*
<https://cran.r-project.org/web/packages/EMSHS/index.html>
- siGGM: R package for *Integrative Bayesian analysis of brain functional networks incorporating anatomical knowledge*
<https://github.com/Emory-CBIS/siGGM>
- CCPD: Matlab toolbox for *Estimating Dynamic Brain Functional Networks Using Multi-subject fMRI Data*
<https://github.com/Emory-CBIS/CCPD>
- Matlab toolbox for *Bayesian Joint Learning of Multiple Brain Functional Networks*
<https://github.com/JoshuaLukemire/BJNL>
- DDT: A Matlab toolbox for *A Differential Degree Test for Comparing Brain Networks.*
<https://github.com/Emory-CBIS/DDT>