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Population and Community Health
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Area of Expertise

My primary research goal is to develop novel, intuitive, and practical statistical methods that can contribute to solving real life problems. In fact, the motivation for most of my statistical methodological research comes from real data where conventional statistical approaches are either inadequate or fail completely. To accomplish my research objectives, I actively seek opportunities to collaborate with statisticians and investigators in diverse research fields. I have applied my methods to a broad range of applications including clinical trials, neuroimaging, dose response, psychiatry, and signal processing using a wide array of statistical methods like Multivariate Statistical Analysis, Receiver Operating Characteristics (ROC) methods, Multiple Comparison, Resampling Methods, Machine Learning, Bayesian variable selection, Optimal Designs, and Spatial Statistics.

Qualifications

BS in Statistics, Indian Statistical Institute
MS in Statistics, Indian Statistical Institute
PhD in Probability/Statistics, University of Washington

Recent Publications

Classifying Alzheimer's Disease Neuropathology Using Clinical and MRI Measurements

Zhuang, X., Cordes, D., Bender, A. R., Nandy, R., Oh, E. C., Kinney, J., Caldwell, J. Z. K., Cummings, J. & Miller, J., 30 Jul 2024, In: Journal of Alzheimer's Disease. 100, 3, p. 843-862 20 p.

Interaction between sleep duration and trouble sleeping on depressive symptoms among U.S. adults, NHANES 2015-2018

Wang, S., Rossheim, M. E., Nandy, R. R. & Nguyen, U. S., 15 Apr 2024, In: Journal of Affective Disorders. 351, p. 285-292 8 p.

The associations between type 2 diabetes and plasma biomarkers of Alzheimer's disease in the Health and Aging Brain Study: Health Disparities (HABS-HD)

HABS-HD Study Team, Apr 2024, In: PLoS ONE. 19, 4 April, e0295749.

Associations between e-cigarette use and sleep health among adults in the United States, NHANES 2015–2018

Wang, S., Nandy, R. R. & Rossheim, M. E., Feb 2024, In: Sleep Medicine. 114, p. 220-228 9 p.

Moderation effects of serotype on dengue severity across pregnancy status in Mexico

Annan, E., Nguyen, U. S. D. T., Treviño, J., Wan Yaacob, W. F., Mangla, S., Pathak, A. K., Nandy, R. & Haque, U., Dec 2023, In: BMC Infectious Diseases. 23, 1, 147.

Trends in prevalence of short sleep duration and trouble sleeping among US adults, 2005-2018

Wang, S., Rossheim, M. E. & Nandy, R. R., 11 Jan 2023, In: Sleep. 46, 1

Relationship between Valence and Arousal for Subjective Experience in a Real-life Setting for Supportive Housing Residents: Results from an Ecological Momentary Assessment Study

Nandy, R., Nandy, K. & Walters, S. T., 2023, In: JMIR Formative Research. 7, e34989.

Longitudinal Changes in Cognitive Functioning and Brain Structure in Professional Boxers and Mixed Martial Artists after They Stop Fighting

Zhuang, X., Bennett, L., Nandy, R., Cordes, D., Bernick, C. & Ritter, A., 15 Nov 2022, In: Neurology. 99, 20, p. E2275-E2284

Country-Level Governance Indicators as Predictors of COVID-19 Morbidity, Mortality, and Vaccination Coverage: An Exploratory Global Analysis

Baghbanzadeh, M., Smith, M., Pilz, J., Rahman, M. S., Karamelic-Muratovic, A., Garg, A., Annan, E., Nguyen, U. S. D. T., Schedler, N., Nandy, R., Islam, R. & Haque, U., Nov 2022, In: American Journal of Tropical Medicine and Hygiene. 107, 5, p. 1066-1073 8 p.

Higher Expression of Annexin A2 in Metastatic Bladder Urothelial Carcinoma Promotes Migration and Invasion

Guo, C., Trivedi, R., Tripathi, A. K., Nandy, R. R., Wagner, D. C., Narra, K. & Chaudhary, P., Nov 2022, In: Cancers. 14, 22, 5664.

Sponsored Projects

Alzheimer Biomarker Consortium - Down Syndrome (ABC-DS)

O'Bryant, S. (PI), Zhang, F. (Col) & Nandy, R. (Col)

University of Pittsburgh

30/09/20 → 31/08/25

Amyloid Burden among Mexican Americans

O'Bryant, S. (PI), Hall, J. (Col), Johnson, L. (Col) & Nandy, R. (Col)

NIA: National Institute on Aging

30/09/18 → 31/08/19

An Alzheimer's Blood Test for Primary Care

O'Bryant, S. (PI), Hall, J. (Col), Johnson, L. (Col) & Nandy, R. (Col)

NIA: National Institute on Aging

1/06/18 → 31/05/21

A Novel Nonparametric Threshold Free Method in Produce fMR1 Activation Maps Using Minimum Misclassification Rate

Nandy, R. (PI)

University of Maryland, Baltimore

1/12/17 → 31/12/18

A Novel Pathogenic Pathway for Diabetic Keratopathy

Karamichos, D. (PI) & Nandy, R. (Col)

NEI: National Eye Institute

1/01/23 → 31/12/27

Biomarkers of Alzheimer's Disease in Adults with Down Syndrome

O'Bryant, S. (PI) & Nandy, R. (Col)

Columbia University Medical Center

30/09/15 → 30/04/22

Blood-Based Biomarker Profiles for a Precision Medicine Approach to Parkinsons Disease

O'Bryant, S. (PI), Hall, J. (Col), Nandy, R. (Col) & Petersen, M. (Col)

Michael J. Fox Fnd for Parkinson's Res

15/10/19 → 14/04/22

Blood Biomarkers for Discriminating Amongst Neurodegenerative Diseases

O'Bryant, S. (PI), Hall, J. (Col) & Nandy, R. (Col)

Michael J. Fox Fnd for Parkinson's Res

1/06/19 → 30/11/21

CxPM LabCorp SRA

Hall, J. (Col), O'Bryant, S. (Col), O'Bryant, S. (Col), Nandy, R. (Col) & Petersen, M. (PI)

Cx Precision Medicine, Inc.

20/05/20 → 30/11/24

Emerging role of tumor-derived

Chaudhary, P. (PI), Mathew, P. (Col) & Nandy, R. (Col)
NCI: National Cancer Institute
1/08/23 → 31/07/25

Epigenetic Risk Factors for AD

Barber, R. (PI), Johnson, L. (Col), Phillips, N. (Col), Nandy, R. (Col) & Zhou, Z. (Col)
NIA: National Institute on Aging
15/09/21 → 31/05/26

Exploring the Role of Gonadotropins in Down Syndrome

Petersen, M. (PI) & Nandy, R. (Col)
NEI: National Eye Institute
30/09/20 → 30/06/22

Health & Aging Brain Study - Health Disparities (HABS-HD)

O'Bryant, S. (PI), Zhang, F. (Col), Nandy, R. (Col), Large, S. (Col) & Zhou, Z. (Col)
NIA: National Institute on Aging
1/09/22 → 31/08/27

Health and Aging Brain among L

O'Bryant, S. (PI), Kline, G. (Col), Hall, J. (Col), Johnson, L. (Col), Barber, R. (Col), Mason, D. (Col), Nandy, R. (Col) & Large, S. (Col)
NIA: National Institute on Aging
1/08/20 → 30/04/26

Machine & Deep Learning for Finding Multimodal Imaging Biomarkers in Prodromal AD

Nandy, R. (PI)
Cleveland Clinic Foundation
1/04/21 → 31/03/24

Safety of Autologous Stem Cell Treatment for Acquired Hearing Loss in Children

Nandy, R. (PI)
AdventHealth Orlando
4/04/17 → 3/10/17

The Alzheimer's Biomarker Consortium- Down Syndrome (ABC-DS)

O'Bryant, S. (PI), Zhang, F. (Col) & Nandy, R. (Col)
University of Pittsburgh
30/09/20 → 31/08/25

The Alzheimer's Biomarker Consortium- Down Syndrome (ABC-DS)

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The Alzheimers Biomarker Consortium- Down Syndrome (ABC-DS)

O'Bryant, S. (PI), Zhang, F. (Col) & Nandy, R. (Col)
University of Pittsburgh
30/09/20 → 31/08/25

The Intimate Interplay Between Keratoconus, Sex Hormones, and the Anterior Pituitary

Karamichos, D. (PI), Cunningham, R. (Col) & Nandy, R. (Col)
NEI: National Eye Institute

1/09/23 → 31/01/27