Dulal K. Bhaumik
Curriculum Vitae

Department of Psychiatry
Division of Epidemiology and Biostatistics
Department of Bioengineering
University of Illinois at Chicago
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Chicago, IL 60612
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Education

1. B.Sc. (BS) (July, 1981) Calcutta University, India, Statistics

2. M. Stat. (MS) (July, 1983) Indian Statistical Institute, Calcutta, India, Statistics

3. Ph.D. (June, 1988) University of Maryland, Statistics

Professional Experience

Professor, Department of Psychiatry, Division of Epidemiology and Biostatistics, Department of Bioengineering, University of Illinois at Chicago, August 2006 -Present.
Director, Biostatistical Research Center, Department of Psychiatry, University of Illinois at Chicago, September 2011-Present.
Research Biostatistician, Chicago Association for Research & Education in Science, Department of Veterans Affairs, Hines VA Hospital, March 2009-Present.
Research Scientist, Center for Health Statistics, University of Illinois at Chicago, and University of Chicago, September 2001 – Present.
Member, Cancer Center Data Safety Monitoring Committee, April 13-May 14.
Associate Professor, Department of Psychiatry, Division of Epidemiology and Biostatistics, University of Illinois at Chicago, August 2002 – August 2006.
Visiting Associate Professor, Department of Psychiatry, Division of Epidemiology and Biostatistics, University of Illinois at Chicago, August 2001 - July 2002.

Professor, Department of Mathematics and Statistics, University of South Alabama, August 2000 - July 2002.

Associate Professor, Department of Mathematics and Statistics, University of South Alabama, September 1995 - July 2000.

Visiting Scientist, Indian Statistical Institute, Calcutta, India, Fall 1997.

Summer Research Faculty, Brooks Air Force Base, San Antonio, Texas, Summer 1997.

Assistant Professor, Department of Mathematics and Statistics, University of South Alabama, September 1990 - August 1995.

Visiting Assistant Professor, Department of Statistics, Temple University, September 1988 - August 1990.

Teaching Assistant, Department of Mathematics and Statistic, University of Maryland Baltimore County, September 1986 - July 1988.

Honors Received

2002 Youden Award in Interlaboratory Testing for the paper entitled ``Weighted random-Effects Regression Models with Application to Interlaboratory Calibration."

2005 NIH Consensus Panel on the Psychosocial Needs of Children Affected by AIDS in Low-Resource Countries (NIMH).

2006 NIH Consensus Panel on Interventions for Adult Mood and Anxiety Disorders.

2006 Youden Award in Interlaboratory Testing for the paper entitled ``Confidence Regions for Random-Effects Calibration Curves with Heteroscedastic Errors."

2007 NIH Consensus Panel on the Mental Health Dissertation Research Grant to Increase Diversity (NIMH).

2008 Fellow, American Statistical Association.

2008 NIH Consensus Panel on Genomic Parsing of Bipolar Disorder and Schizophrenia: Studies of Large Cohorts in the U.S. and Across the Globe.

2009 The paper entitled `` Random-effect Poisson Regression Analysis of Adverse Event Reports: The Relationship Between Antidepressants and Suicide" received Outstanding Statistical Application Award (by ASA).

2010 NIH Consensus Panel on Biostatistical Methods and Research Design (BMRD).

2010 Veterans Administration Cooperative Study Review.

2013 NIMH Interventions Committee for Adult Disorders.

2014 NIH Consensus Panel on Dental and Craniofacial Research Special Emphasis.

2015 Fellow, Royal Statistical Society, UK.

Professional Membership

American Statistical Association (Fellow)
Society for Clinical Trials
Calcutta Statistical Association
International Indian Statistical Association

Grants:

<u>Ongoing Research Support</u>

1. **Title: Toll-like Receptors and Cytokines in Depression and Suicide Brain**

Source of Support: 1 RO1 MH098554-01, (PI: G Pandey)
Period: 07/01/2012 – 06/30/2017, Role: Co-PI (3.22%)
Description: The goal of this project is to study Toll-like receptors, cytokines and neuroimmune genes in the postmortem brain of normal controls, suicides victims and depressed subjects to determine if abnormalities of the immune function are involved in the pathophysiology of depression and suicide.

2. **Title: Tools for Optimizing, Prescribing, Monitoring and Education**

Source of Support: AHRQ/DHHS, 1U18HS016973-01 (PI: B Lambert)
Period: 09/01/07-08/31/16, Role: Co-PI (2.62%)
Description: Development of a new Pharmacoepidemiology statistical analysis system.

3. **Title: The H3K9 histone switch; 'LEVELS' in schizophrenia blood and brain**

Source of Support: NIMH, (PI: Sharma)
Period: 08/01/2012 – 05/31/2017, Role: Co-I (2.75%).
Description:The purpose of this research is to ascertain whether differences exist between baseline levels of a repressive chromatin mark such as dimethylated lysine 9 of histone 3 (H3K9me2) in patients with schizophrenia and healthy controls.

4. **Title: Dimensional RDoC Modeling across the Range of Negative Mood Dysfunction.**

Source of Support: R01 MH101487-01, (PI: Langenecker**)**
Period: 09/18/2013 – 05/31/2017, Role: Co-I (6.09%)
Description:The objective is to pursue an iterative strategy of (a) cross-modality scale development and consolidation for each subdomain (e.g., PCA, ICA), (b) illness vs well characterization via standard and novel techniques (e.g., support vector), (c) subtyping using scale and disease characteristics for each subdomain (cluster, ICA).

5. **Title: Brain and Mental Health Recovery**

Source of Support: Department of Veterans Affairs' CSR&D, (PI: Phan)
Merit Review Award for Deployment Health Research (OEF/OIF/OND)
Period: 3/1/2014-2/28/2017 Role: Co-I (10%)
Description: This study proposes to track the mental health and neurophysiological brain markers in our veterans post-deployment who previously experience trauma and other stress-related experiences from combat varying on PTSD diagnosis and clinical course.

6. **Title: rTMS: A Treatment To Restore Function After Severe TBI.**

Source of Support: CDMRP USAMRAA PT1302741 (PI-Pape)
Period: 2014-2017, Role: Co-I (15%)
Description: The purpose of this study is to determining the neurobehavioral and neural effects of repetitive transcranial magnetic stimulation (rTMS) for persons remaining in vegetative (VS) and minimally conscious (MCS) states 3 to 12 months after severe TBI. The specific aims are to: (1) Determine presence, direction and sustainability of rTMS-induced neurobehavioral effects measured with the Disability Rating Scale; (2) Determine presence, direction and sustainability of rTMS-induced changes in functional neural activation and whether or not these changes correlate with improving neurobehavioral function; (3) Examine the effect of rTMS on white fiber tracts and whether or not the rTMS-related effects correlate with improving neurobehavioral function; (4) Confirm rTMS safety for severe TBI.

7. **Title: Center for Alcohol Research in Epigenetics**

Source of Support: NIAAA/NIH (PI-S Pandey)
Period: 2014-2019, Role: Co-I (10%)
Description**:** Alcoholism is a major public health concern worldwide. These novel studies and important collaborations among this exemplary research team will increase our understanding of the epigenetic mechanisms that may be involved in the pathophysiology of alcoholism. Ultimately, these studies may lead to the identification of epigenetic targets, which can be used to develop new pharmacotherapies to treat or prevent alcoholism.

8. **Amantadine +rTMS as a Neurotherapuetic for Disorder Consciousness after TBI**

Source of Support: Eunice Kennedy Shriver National Institute of Child Health & Human Development (CFDA #93.865), (PI-Pape)
Period: August 5, 2013 – July 31, 2015, Role Co-I (5%)
Description: The purpose of this study is to determining the neurobehavioral and neural effects of repetitive transcranial magnetic stimulation (rTMS) for persons remaining in vegetative (VS) and minimally conscious (MCS) states 3 to 12 months after severe TBI.

Pending

1. **Title: Interactive Virtual Training (IVT) for Early Career Teachers in Urban Schools**

Source of Support: Institute of Education Sciences, (PI: Shrenoff)
Period: 02/01/14-01/31/18 Role: Co-PI (10%)
Description:The study proposes to develop, iteratively refine, and pilot test the InteractiveVirtual Training (IVT) systemdesigned to enhance and accelerate ECTs' use of evidence-based behavior management practices with students at risk for developing serious behavior problems by providing opportunities for: (1) *Reflection and Problem Solving,* and (2) *Practice with Feedback*.

2. **Title: Structural-functional connectome in bipolar I disorder during cognitive control.**

Source of Support:NIMH, 1R01MH104549-01, (PI: Liao)
Period: 07/01/2014- 06/30/2019, Role: Co-I (15%)
Description:The proposed study is expected to have substantial impact by: a) further developing new technologies to visualize multi-modal connectome data, b) uncovering connectome imaging biomarkers for executive dysfunction, and c) studying both the prefrontal cortex (PFC) and DMN in bipolar disorder and major depressive disorder to establish the trans-diagnostic neural basis for their shared features.

Completed

1. **Title:PKC and Cellular Signaling in the Suicide Brain**
   R01 MH48153 Pandey (PI) 9/01/07-8/31/11

Source: NIH/NIMH Role: Co-I
Description:The purpose of this study was to determine the role of PKC and cellular signaling in the brains of suicide completers.

2. **Statistical Testing and Power for MH Services Research**
   R01 MH069353-01 Bhaumik (PI) 6/1/05-5/31/08
   Source: NIMH
Description:The purpose of this research was to develop small sample tests for hypothesis testing for fixed and random effects in generalized mixed-effects regression models.

3. Title: Mental Health Services & Predictors of Learning in Urban Schools
R01 MH073749 Atkins (PI) 04/01/08-05/31/13
Source: NIH/NIMH Role: Co-I
Description: To improve the academic performance as well as home and school behavior of children with disruptive behavior by mobilizing indigenous community resources such as leader teachers, community mental health providers, and paraprofessional parent advocates, who work as a team to support teachers and parents of children with disruptive behavior problems

4. Title: Organizational Context & Children's Mental Health in Urban After-School Programs
R01-MH081049 Frazier (PI) 12/01/10-11/30/12
Source: NIH/NIMH Role: Co-I
Description: Community-based mental health agencies to develop strategies for positive system change.

5. Mental Health Computerized Adaptive Testing
R01 MH66302-01 Gibbons (PI) 6/01/02-5/31/05
Source: NIH/NIMH Role: Co-PI
Description: The purpose of this research was to apply computerized adaptive testing to the field of mental health assessment and measurement.

6. Statistical Models for Nested Service Utilization Data
R01 MH56146-04 Hedeker (PI) 7/01/99-6/30/04
Source: NIH/NIMH Role: Co-PI
Description: The purpose of this research was to develop statistical theory and approaches for the analysis of nested mental health service utilization data.

Courses Taught

Various undergraduate and graduate statistics courses: Basic Statistics Courses, Courses for Biomedical and Nursing Students: Statistical Reasoning and Applications, Life Testing and Reliability Theory, Categorical Data Analysis, Design of Experiments I and II, A Special Course on Clinical Trials Regression Analysis, Experimental Designs, Multivariate Statistics, Statistical Inferences, Sampling, Mathematical Statistics, Linear Models, Time Series, Reliability, and Quality Control. Multivariate Statistics, Advanced Statistical Inferences, Linear Models, Biostatistics II, Large Sample Theory.

Editorial Experience

2012- Associate Editor: Psychiatric Rehabilitation Journal
(Published by American Psychological Association (APA)).
2007- 2009 Associate Editor: Journal of the American Statistical Association,
2007- 2011 Associate Editor: Sankhya B,

Papers Refereed for the Following Journals

1. American Journal of Epidemiology
2. Biometrics
3. Communications in Statistics
4. Journal of Applied Statistical Sciences
5. Journal of Combinatorics, Information and System Sciences
6. Journal of Statistical Planning and Inference
7. Journal of the American Statistical Association
8. Multivariate Behavioral Research
9. Psychometrika
10. Sankhya B
11. Statistics in Medicine
12. Technometrics
13. The American Statistician

PhD Thesis Supervision:

1. Subhash Aryal, August 2008.
   Title of Dissertation: *Small Sample Tests and Sample Size Determination for Linear and Non-Linear Mixed- Effects Models.*
   Dr. Aryal is an Associate Professor of Biostatistics at University of North Texas Health Science Center, Fort Worth.

2. Kush Kapur, June 2010.

Title of Dissertation: *Hypothesis Testing, Power and Sample Size Determination for Health Science Data.*
Dr. Kapur has joined the Harvard University as a Research Assistant Professor.

3. Anup Amatya, June 2011
Title of Dissertation: *Meta-Analysis of Binary Adverse Event Data and the Case for Percutaneous Coronary Intervention.*
Dr. Amatya is an Assistant Professor of Biostatistics at the University of New Mexico.

4. Yoonsang Kim, June 2011
Title of Dissertation: *Generalized Linear Mixed Model and Calibration for gamma Random Variables: Application to Asbestos Fibers.*
Dr. Kim is a Research Assistant Professor of Biostatistics at University of Illinois at Chicago.

5. Weihan Zhao, December 2013
Title of Dissertation: *Statistical Methodologies for Group Comparisons of Brain Connectivity using Multimodal Neuroimaging Data.*
Dr Zhao is a Biostatistician at Abb Vie Inc., in Chicago.

6. David Morton, November 2014
Title of Dissertation: *Robust Statistical Methodologies for Classifying Hospital Quality Using Hierarchical Nonlinear Mixed-Effects Models.*

7. Helen Shi, (Expected) November 2016
Title of Dissertation: *Statistical Agreements.*

8. Fei Shi, (Expected) November 2015
Title of Dissertation: *Controlling False Discovery Rates for Correlated Data.*

Doctoral Dissertation Committee Member

1. Jungwha Lee, Biostatistics, 2009.
2.David Kauffman, Biostatistics, 2014.
3.Judith Xu, Biostatistics, 2014.

Supervised at least 30 BS and MS Statistics/Biostatistics students.

Professional Activities

Served as the Treasurer of the American Statistical Association, Alabama Chapter (1994-1995).

Organized several Conferences on- Biostatistics, Linear Models, and Environmental Statistics at the University of South Alabama.

Book:

1. Gibbons R.D., **Bhaumik, D. K**., and Aryal, S. *Statistical Methods for Ground-Water Monitoring*, 2nd ed. New York, John Wiley & Sons, 2009.
2. Sample Size Methodologies and Power Analysis: A Practical Approach, New York, John Wiley and Sons, 2016.

Peer Reviewed Publications:

1. Mathew, T. and **Bhaumik, D.K**. ``The Model Robustness and Optimality of Randomized Designs." *Journal of Statistical Planning and Inference*, 23, 371-379, 1989.

2. **Bhaumik, D.K**., and Mathew, T., ``On the Minimax Optimality of Non-randomized Block Designs." *Computational Statistics and Data Analysis*, 8, 59- 66, 1989.

3. **Bhaumik, D.K**., ``On Optimal Block Designs Under the Nearest Neighbor Correlation Model." *Utilitas Mathematica*, 38, 15-25, 1990.

4. **Bhaumik, D.K**., and Whittinghill, D.C., ``Optimality and Robustness to the Unavailability of Blocks in Block Designs." *Journal of the Royal Statistical Society B*, 53: 2, 399-407, 1991.

5. **Bhaumik, D.K**., and Kulkarni, P.R., ``One-Sided Tolerance Limits for Unbalanced One-Way ANOVA Random Effects Model." *Communication of Statistics, Theory and Methods*, 20: 5 and 6, 1665-1675, 1991.

6. Heiberger, R.M., **Bhaumik, D.K**. and Holland, B., ``Optimal Data Augmentation Strategies for Additive Models," *Journal of the American Statistical Association*, 88, 926-938, 1993.

7. **Bhaumik, D.K**., ``On Optimal Block Designs in the Presence of a Linear Trend." *Sankhya, Series B*, 55, 91-102, 1993.

8. **Bhaumik, D.K**. and Saha, G.M., ``Construction of a Series of Affine Resolvable BIBDS," *Calcutta Statistical Association Bulletin*, 43, 257-262, 1994.

9. **Bhaumik, D.K**., ``Majorization and D-Optimality Under the Nearest Neighbor Correlation Model", *Journal of the Royal Statistical Society, Series B*, 139-143, 1995.

10. **Bhaumik, D.K**., ``Optimality in the Competing Effects Model", *Sankhya Series B*, 57, 48-56, 1995.

11. **Bhaumik, D.K**. and Mathew, T. ``Minimaxity of Randomized Optimal Designs with Respect to a General Optimality Criterion," *Sankhya Series B*, 57, 122-127, 1995.

12. Dasgupta, R. and **Bhaumik, D.K**., ``Upper and Lower Tolerance Limits of Atmospheric Ozone Level, and Extreme Value Distribution", *Sankhya Series B*, 57, 182-199, 1995.

13. Bagui, S., **Bhaumik, D.K.** and Parnes, M., ``One-Sided Tolerance Limit for Unbalanced m-way Random Effects ANOVA Models,*" Journal of Applied Statistical Sciences*, 3, 135-148, 1996.

14**. Bhaumik, D.K**. and Kulkarni, P.M., ``A Simple and Exact Method of Constructing Tolerance Intervals for the One-Way ANOVA with Random Effects ", *The American Statistician*, 50, 319-323, 1996.

15. Hossain, A.M, **Bhaumik, D.K**., Selukar, R.S., Huff, C., Ritz, B., and Thorneycroft, I.H., ``Assessment of the Relationship of Sperm Morphology with Seminal and other Clinical Conditions of Semen Donors", *Archives of Andrology*, 39, 111-117, 1997.

16**. Bhaumik, D.K**. and Shah, A. K.,``Exact Tests in Crossover Designs," *Journal of Statistical Planning and Inference*, 72, 79-88, 1998.

17. **Bhaumik, D.K**. and Zhang, X.M., ``A New Criterion to Measure the Efficiency of A Design", *Sankhya Series B*, 60, 315-330, 1998.

18. Johnson, G.D., Formichella, C., Thomas, J.S., **Bhaumik, D.K.,** Degruy, III, F.V., and Riordan, C.A., `` Stress and Distress among Gulf of Mexico Shrimp Fishermen", *Human Organization*, 57, 404-413, 1998.

19. **Bhaumik, D.K**., and Sen, P.K., ``Universal Optimality of Bayesian Experimental Designs and Optimal Data Augmentation", *Sankhya Series B*, 469-487, 1999.

20. Gibbons, R.D., and **Bhaumik, D.K**. ``Weighted Random-effects Regression Models with Application to Inter-laboratory Calibration", *Technometrics*, 43, 192-198, 2001.

21**. Bhaumik, D.K.,** and Mathew, T., ``Optimal Data Augmentation for the Estimation of a Linear Parametric Function in Linear Models", *Sankhya, Series B*, 10-26, 2001.

22. **Bhaumik. D.K**., and Sarkar, S. ``On the Power Function of the Likelihood Ratio Test for MANOVA", *Journal of Multivariate Analysis*, 82, 416-421, 2002.

23. **Bhaumik, D.K**., Khattree, R. and Bagui, S.C., ``Statistical Tests for Nested Designs under Partial Balance", *Communication in Statistics, Theory and Methods*, 31, 1795-1813, 2002.

24. **Bhaumik, D.K.** and Gibbons, R.D.``An Upper Prediction Limit for the Arithmetic Mean of a Lognormal Random Variable", *Technometrics*, 46, 239-248, 2004.

25. Gibbons, R.D., Lazar, N., **Bhaumik, D. K.,** Sclove, S. N., Chen, H.Y., Thulborn, K.R., Sweeney, J.A., Patterson, D. ``Estimation and Classification of fMRI Hemodynamic Response Patterns ", *NeuroImage*, 22, 804-814, 2004.

26. Bagui, S. C., **Bhaumik, D. K.** ``Glimpses of inequalities in probability and statistics". *International Journal of Statistical Sciences*, 3, 9-15, 2004.

27. Bagui, S. C, **Bhaumik, D.K**. ``Computing Jacobians Using Exterior Products", *Statistical Methodology*, 1, 71-80, 2004.

28. Gibbons, R.D., **Bhaumik, D.K.,** Cox, D.R., Grayson, D.R., Davis, J.M., and Sharma, R.P. ``Statistical Analysis of Microarray Data", *Journal of Statistical Planning and Inference*, 129, 19-37, 2005.

29. Gibbons, R.D., Hur, K., and **Bhaumik, D.K**., Mann, J.J., ``The Relationship Between Antidepressant Medication Use and Rate of Suicide." *Archives of General Psychiatry*, 62, 165-172, 2005.

30. **Bhaumik, D.K**., and Gibbons, R.D., ``Confidence Regions for Random-Effects Calibration Curves with Heteroscedastic Errors." *Technometrics*, 47, 223 –231, 2005.

31. **Bhaumik, D. K**., and Gibbons, R.D., ``One-sided Prediction Intervals for at Least p of m Observations from a Gamma Population at each of r Locations", *Technometrics*, 48, 112-129, 2006.

32. Gibbons, R. D., and **Bhaumik. D. K.** `` Simultaneous Gamma Prediction Limits for Ground Water Monitoring Applications", *Ground Water Monitoring and Remediation*, 3, 105-116, 2006.

33. Gibbons, R. D., Bock, D.R., Hedeker, D., Weiss, D., **Bhaumik, D.,** Kupfer, D., Frank, E., Grochocinski, V. ``Full-Information Item Bi-Factor Analysis of Graded Response Data." *Applied Psychological Measurement*, 31, 4-19, 2007.

34. Gibbons, R.D., Hur, K., and **Bhaumik, D.K**., Mann, J.J ``The Relationship Between Antidepressant Prescription Rates and Rate of Early Adolescent Suicide, *The American Journal of Psychiatry*, 163, 1898-1904, 2006.

35. Roy, A., **Bhaumik, D. K.,** Gibbons, R. D., Aryal, S. Sample Size ``Determination for Hierarchical Longitudinal Mixed Effects Models with Differential Attrition Rates", *Biometrics*, 63, 699-707, 2007.

36. Gibbons R.D., Brown C.H., Hur K., Marcus S., **Bhaumik D.K**., Mann J.J. `` The relationship between antidepressants and suicide: Results of analysis of the Veterans Health Administration datasets", *American Journal of Psychiatry*, 164, 1044-1049, 2007.

37. Gibbons R.D., Hur K., **Bhaumik D**., Bell C.C. ``Profiling of county-level foster care placements using random-effects Poisson regression models". *Health Services Outcomes Research Methodology*, 97-108, 7, 2007.

38. Gibbons R.D., Brown C.H., Hur K., Marcus S., **Bhaumik D.K**., Erkens J.A., Herings R.M.C., Mann J.J. ``Early evidence on the effects of the FDA black box warning on SSRI prescriptions and suicide in children and adolescents", *American Journal of Psychiatry*, 164:9, 1-8, 2007.

39. Aryal, S., **Bhaumik, D.K**., Matthew, T. and Gibbons, R.D. ``Approximate Tolerance Limits and Prediction Limits for the Gamma Distribution." *Journal of Applied Statistical Sciences*, 16:2, 253-262, 2008.

40. Gibbons, R.D., Segawa, E., Karabatsos, G., Amatya, A., **Bhaumik, D.K.**, Brown, C.H., Kapur, K., Marcus, S., Hur, K., Mann, J.J. `` Random-effect Poisson Regression Analysis of Adverse Event Reports:

The Relationship Between Antidepressants and Suicide". *Statistics in Medicine*, 27, 1814-1833, 2008.

41. **Bhaumik, D. K**., Roy, A., Aryal, S., Hur, K., Duan, N., Normand, S-L, Brown, H., and Gibbons, R. D. Sample Size Determination for Studies with Repeated Continuous Outcomes, *Psychiatric Annals,* 38:12, 765-771, 2008.

42. Gibbons R.D., Weiss D.J., Kupfer D.J., Frank E., Fagiolini A., Grochocinski V.J., **Bhaumik D.K.,** Stover A. Bock R.D., Immekus J.C. Using computerized adaptive testing to reduce the burden of mental health assessment. *Psychiatric Services*, 59, 361 – 368, 2008.

43**. Bhaumik, D. K.,** Roy, A., Lazar, N., Kapur, K., Aryal, S., Sweeney, J.A., Patterson, D., and Gibbons, R. D. `` Hypothesis Testing, Power and Sample Size Determination for Between Group Comparisons in fMRI Experiments." *Statistical Methodology*, 6, 133-149, 2009.

44. Aryal, S., **Bhaumik, D.K**., Santra, S. and Gibbons, R.D., "Confidence Interval for Random-Effects Calibration Curves with Left-Censored Data". *Environmetrics*, 20, 181-189, 2009.

45. **Bhaumik, D.K**., Kapur, K., and Gibbons, R. D. "Testing Parameters of a Gamma Distribution for Small Samples." *Technometrics*, 51, 336-334, 2009.

46. **Bhaumik, D.K**., Santra, S., Aryal, S., and Gibbons, R.D.``One-Sided Simultaneous Prediction Limits for Left-censored Normal Random Variables." *Sankhya Series B*, 248-266, 70, 2009.

47. Kapur, K., Roy, A., **Bhaumik, D.K**., Gibbons, R., Lazar, N., Sweeney, J., Aryal, A., and Patterson, D. "Estimation and classification of BOLD responses over multiple trials". *Communication in Statistics*, 38, 3099-3113, 2009.

48. Gibbons, R.D., Amatya, A.K., Brown, C., Hur, K., Marcus, S., **Bhaumik, D.K**., Mann, J.J. ``Post–Approval Drug Safety Surveillance". *Annual Review of Public Health*, 31, 419-437, 2010.

49. **Bhaumik, D.K**., Kim, Y. `` Asbestos Research Roadmap", Institute of Medicine/NRC 2010.

50. **Bhaumik**, D.K., Aryal, S., Amatya, S., Kapur, K., and Gibbons, R. D.``Sample Size Determination for Between Group Comparisons in Mixed-effects Logistic Regression Models for Analysis of Longitudinal Data", *Journal of Applied Statistical Science*, 2012 (in print).

51**. Bhaumik, D.K**., Amatya, A., Normand, S-L., Greenhouse, J., Kaizar, E., Neelon, B., and Gibbons, R.D. ``Meta-Analysis of Rare Binary Adverse Event Data", *Journal of the American Statistical Association*, 106,1067-1074, 2012.

52. Gibbons, R.D., **Bhaumik, D.K**, Aryal, S. `` Ground Water Monitoring, Detection and Compliance", *Encyclopedia of Environmetrics* 2, John Wiley & Sons, 2012.

53. Guidotti, Alessandro; Dong, Erbo; Gavin, David; Veldic, Marin; Zhao, Weihan; **Bhaumik, Dulal**; Pandey, Subhash; Grayson, Dennis, ``DNA-methylation/demethylation network expression in psychotic patients with a history of alcohol abuse" . Alcoholism: Clinical and Experimental Research, 37, 417-424, 2013.

54. Amatya, A., **Bhaumik, D.K**., and Gibbons, R.D. ``Sample Size Determination for Clustered Count Data", *Statistics in Medicine*, 32, 4162-4179, 2013.

55. **Bhaumik, D.K**., Kapur, K., Gibbons, R.D., and Keating, J. ``Small Sample Tests for Shape Parameters of Gamma Distributions". *Communication in Statistics, Simulation*, (in print) 2013.

56. **Bhaumik, D.K**., Kapur, K., Bhaumik, R., Reda, D. ``Sample Size Determination for Testing the Mean of a Lognormal Distribution". Journal of Environmental Statistics, 5, 1-21, 2013.

57. Bagui, S. C., **Bhaumik D. K**., and Mehra, K. L. ``A Few Counter Examples Useful in Teaching Central Limit Theorems**",** *The American Statistician,* 67, 49-56, 2013.

58. **Bhaumik, D.K**., Aryal, S., Gibbons, R.D., and Mathew, T.`` An Optimal Test for Variance Components of Multivariate Mixed-Effects Linear Models." *Journal of Multivariate Analysis*, 124, 166–178, 2014.

59. Sinha, A. and **Bhaumik, D.K**., ``Treatment Expenditure Pattern of Epileptic Patients: A Study from a Tertiary Care Hospital, Kolkata, India" *Neurology Research International*, 2014, Article ID 869572.

60. Kapur, K., Bhaumik, R., Tang, X.C., Hur, K., Moritz, T.E., Domenic J. Reda, D.J., and **Bhaumik, D.K.,** ``Sample Size Determination for Longitudinal Binary Data.", *Statistics in Medicine*, 33, 3781–3800, 2014.

61. Amatya, A., **Bhaumik, D.K**., Normand, S-L., Greenhouse, J., Kaizar, E., Neelon, B., and Gibbons, R.D. `` Likelihood-based Random Effect

Meta-analysis of Binary Events", *Journal of Biopharmaceutical Statistics*, 2014 (in print).

62. Naihua, D., **Bhaumik, D.K**., Palinkas, L. A., Hoagwood, K., `` Optimal Design and Purposeful Sampling: Complementary Methodologies for Implementation Research." *Administration and Policy in Mental Health and Mental Health Services Research* 2014 (in print).

63. Kumar A, Yang S, Ajilore O, Wu M, Cohen J, Lamar M, **Bhaumik, D.** Biophysical Changes in Subcortical Nuclei: The Impact of Diabetes and Major Depression, *Molecular Psychiatry*, [EPub Ahead of Print], 2015.

64. Pape, T.L., Rosenow, J.M., Steiner, M., Parrish, T., Geurnon, A., Harton, B., Patil, V., **Bhaumik, D.K**., McNamee, S., Walker, M., Froelich, K., Buress, C., Odle, C., Wang, X., Herrold, A.A., Zhao, W., Reda, D., Mallinson, T., Conneely, M., Nemeth, A.J. Placebo-Controlled Trial of Familiar Auditory Sensory Training for Acute Severe Traumatic Brain Injury: A Preliminary Report. *Neurorehabilitation and Neural Repair*, DOI: 10.1177/1545968314543308, 2015.

65. Bruce, L., Zhao, Weihan, Bhaumik, R., **Bhaumik, D.K.** `` Detection and Prediction Limits for Identifying Highly Confusable Drug Names from Experimental Data", *Journal of Biopharmaceutical Statistics*, 2015 (in print).

Manuscripts Submitted for Publication

66. Morton, D., and **Bhaumik, D.K**., ``Hospital Profiling Using Composite Scores". Statistics in Medicine, (Under Revision) 2012.

67. Kim, Y., **Bhaumik, D.K**., and Gibbons, R.D.``Confidence and Prediction Intervals for Small Sample Asbestos Fiber Counts Based on Lognormal and Gamma Distributions".

68. Chen, H. Y., Gibbons, R. D., Hur, K., Marcus, S. and **Bhaumik, D. K.**`` A Growth Mixture Model for Estimating Patterns of Change in Attention Deficit Hyperactivity Disorder."

69. Chen, H. Y., Gibbons, R. D., Hur, K., **Bhaumik, D. K**.``Mixed-Effects Probit Model for Longitudinal Data with Multiple Discrete Outcomes."

70. Ramati, A., Kapur, K., Keedy, S., Khine, T., **Bhaumik, D. K**., Gibbons, R. D., and Sweeney, J. ``Reliability of a Hierarchical Bayesian Modeling Approach for Event-Related functional MRI Data".

Paper Presentations

1. Optimality and Robustness to the Unavailability of Blocks in Block Designs. - Indian Statistical Institute, Calcutta, India, August, 1991.

2. One-sided Tolerance Limits for Unbalanced One-way ANOVA Random Effects Model - ASA and IMS Spring Conference, Houston, March, 1991.

3. Bayes Optimal Incomplete Block Designs for Comparing Treatments with a Control - University of Maryland (UMBC), March, 1991.

4. Bayes Optimal Incomplete Block Designs for Comparing Treatments with a Control - Alabama ASA Chapter Meeting, March, 1991.

5. Minimaxity of Randomized Optimal Designs with Respect to a General Optimality Criterion - The First International Triennial Calcutta Symposium, December, 1991.

6. Optimal Data Augmentation Strategies for Additive Models, Mississippi State University, February, 1992.

7. On Extreme Value Distributions, University of West Florida, Pensacola, March, 1992.

8. Optimal Data Augmentation Strategies for Additive Models. IMS and ASA Summer Conference, San Francisco, August, 1993.

9. The Ozone Layer - International Conference On Environmental Problems: Issues, Statistical Models and Methods, Calcutta, India, December, 1993.

10. (Invited) Universal Optimality of Bayesian Experimental Designs and Optimal Data Augmentation, GLM Meeting, Gainesville, Florida, September, 1994.

11. Exact Tests in Crossover Designs, Joint Statistical Meetings, ASA, IMS - Orlando, FL, August, 1995.

12. Universal Optimality of Bayesian Experimental Designs and Optimal Data Augmentation, University of Southwestern Louisiana, Fall 1995.

13. Universal Optimality of Bayesian Experimental Designs and Optimal Data Augmentation, University of South Alabama, Spring, 1996.

14. One-Sided Tolerance Limits for Unbalanced m-Way Random-Effects ANOVA Models, Joint Statistical Meetings, ASA, IMS, - Chicago, August, 1996.

15. A New Criterion to Measure the Efficiency of A Design, University of Maryland Baltimore County, Spring 1997.

16. (Invited) Tolerance Regions for Random-Effects Calibration Curves with Heteroscedastic Errors, - Maine, - Summer 1997.

17. (Invited) Universal Optimality of Bayesian Experimental Designs and Optimal Data Augmentation, Benaras, India- Winter 1997.

18. Tolerance Regions for Random-Effects Calibration Curves with Heteroscedastic Errors- Indian Statistical Institute, India - Fall 1997.

19. Optimal Data Augmentation for the Estimation of a Linear Parametric Function in Linear Models, - National Seminar on Statistics and Decisions, Calcutta, India, - Summer 1999.

20. On the Power Function of the Likelihood Ratio Test for MANOVA, Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago, October, 2000.

21. An Upper Prediction Limit for the Arithmetic Mean of a Lognormal Random Variable, Joint IMS, ASA Statistical Meetings, August, 2001.

22. (Invited) An Upper Prediction Limit for the Arithmetic Mean of a Lognormal Random Variable, - International Conference of Computational Mathematics and Modeling, Bangkok, Thailand, December, 2002.

23. (Invited) Statistical Analysis of Microarray Data, International Conference on Applied Statistics, DeKalb, Illinois, May,2002.

24. Statistical Analysis of Microarray Data, Department of Mathematics, University of Louisiana, Spring, 2003.

25. Single and Multiple Use Confidence Regions for Random-Effects Calibration Curves with Heteroscedastic Errors. Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago, Fall 2003.

26. (Invited) Estimation and Classification of fMRI Hemodynamic Response Patterns, Fifth International Triennial Calcutta Symposium on Probability and Statistics, December 2003.

27. Single and Multiple Use Confidence Regions for Random-Effects Calibration Curves with Heteroscedastic Errors. Department of Mathematics and Statistics, Mahidol University, Thailand, November, 2004.

28. Single and Multiple Use Confidence Regions for Random-Effects Calibration Curves with Heteroscedastic Errors. Department of Mathematics and Statistics, University of Waterloo, Canada, November, 2004.

29. (Invited) Single and Multiple Use Confidence Regions for Random-Effects Calibration Curves with Heteroscedastic Errors, ASA-Northern Illinois Chapter, March, 2005.

30. One-sided Prediction Intervals for at Least p of m Observations from a Gamma population at each of r locations. Department of Mathematical Sciences, Northern Illinois University, DeKalb, April, 2005.

31. One-sided Prediction Intervals for at least p of m Observations from a gamma population at each of r locations, University of North Carolina, Chapel Hill, February, 2007.

32. (Invited) Sample Size Determination for Hierarchical Longitudinal Mixed Effects Models with Differential Attrition Rates, JSM Utah, August, 2007.

33. Sample Size Determination for Hierarchical Longitudinal Mixed-Effects Models with Differential Attrition Rates, Department of Biostatistics, University of Pittsburgh, November, 2007.

34. (Invited) Testing Parameters of a Gamma Distribution for Small Samples, 2nd Annual Probability and Statistics Day, Department of Mathematics and Statistics, University of Maryland Baltimore County, April 2008.

35. (Invited) Random-effect Poisson Regression Analysis of Adverse Event Reports: The Relationship Between Antidepressants and Suicide, Mathematical Association of America (MAA), University of West Florida, Pensacola, November 2009.

36. (Invited) Random-effect Poisson Regression Analysis of Adverse Event Reports: The Relationship Between Antidepressants and Suicide, Integrative & Personalized Medicine and 42nd Annual Conference of the Indian Pharmacological Society (IPSCON-2009), Kolkata, India, December 2009.

37. (Invited) Meta-Analysis of Binary Adverse Event Data and the Case For Percutaneous Coronary Intervention, The 33rd Annual Midwest Biopharmaceutical Statistics Workshop, Ball State University, Muncie, Indianan, May 2010.

38. (Invited) Confidence and Prediction Intervals for Small Sample Asbestos Fiber Counts Based on Lognormal and Gamma Distributions, US Environmental Protection Agency, Washington DC, September 2010.

39. (Invited) Confidence and Prediction Intervals for Small Sample Asbestos Fiber Counts Based on Lognormal and Gamma Distributions, Louisiana Chapter of the American Statistical Association, November 2010.

40. (Invited) Estimation and Classification of BOLD Responses Over Multiple Trials, In the Session Title: Advances in the Spatio-Temporal Analysis of Functional Magnetic Resonance Imaging (fMRI) Data, International Biometric Society/Eastern North American Region, March 2011.

41. Meta-Analysis of Binary Adverse Event Data and the Case For Percutaneous Coronary Intervention, Department of Preventive Medicine, Northwestern University, March, 2011.

Consultation

Was the Stat-Consultant in the Department of Mathematics and Statistics at the University of South Alabama for the academic years 1992-93 and 1998-1999. A list of some important consulting projects.

1. ``Chlorine Solubility in Aqueous Solutions," M.S. Thesis in Chemical Engineering. Bruce Zimmerman.

2. ``Parental Presence During Procedures: A Pediatrician's Perspective," research work, Kenneth R. Retting, M.D., Associate Professor of Pediatrics, Division of Endocrine and Metabolic Disease.

3. ``Cardiac Catherization/PTCA Balloon Inflation Times," Rita McConnell (student), Department of Allied Health.

4. ``Most Efficient Method to Compare and Contrast Matched-Pair Data," Master's Thesis, Scotty D. Stokley, SY/AN.

5. ``Appropriate Statistical Tests," Ph.D. Thesis, Nancy Bledsoe, Accounting, CBM.

6. ``The Effect of Treadmill Walking at Faster than Comfortable Speed on the Temporal/Distance Gail Parameters and Lower Extremity Muscle Strength in Hemipartic Subjects," J. Waagfjord, Instructor, Department of Physical Therapy.

7. ``An Experiment to Discover the Effects of Artificial Coloring on Women's Facial Attractiveness," Master's Project, Kate Adler, Department of Psychology.

8. ``How Effective is My New Teaching Technique?" Dyes Roy, Graduate Student, Department of Education.

9. ``Statistical Techniques and Tests," Research Project, R.F. Sweet, Department of Accounting.

10. ``Biomonitoring in Urban Environment: Utilization of Small Reptiles as Urban Biocentanal Species," EPA project, Dr. L.G. Tate, Department of Biology.

11. ``Characteristics of Students that Successfully Complete Two-Year Degree Programs at an Urban, Historically Black Comprehensive Community College," Lisa Hammons, Ed D. Student,
Bishop State College.

12. ``A Logistic Model for Altitude Decompression Sickness," Michael Funches, Allied Health Student.

13. ``To Test Routine Swimming Speeds of Two Groups of Fish," Jonathan O'Neal, Graduate Student, Marine Sc.

14. ``Ownership Structure and the Value of the Firm," Professor H. S. Friday, Dept. of Finance.

15. ``Interactions Between Size and Molt Stage of Callinectes Sapidus and Parasitism by Loxothylacus Texanus," Melissa Lawrence, MS Student in Biology.

16. ``Freshwater Turtles' Biodiversity in Bay Reserve," Krista K Van Amerongen, MS Student in Biology.

17. ``The Effect of Physical Activity on Inspiratory Muscles," Tanya Little and Christy Ramey, BS Students, Cardiorespiratory Care.

18. ``Evaluation of the Accuracy of the i-Stat Analyzer," Glenda Parker, BS Student, Cardiorespiratory Care.

19. ``The Use of Mechanical Ventilation," Angela McDonald and Andre Fincey, BS Students, Cardiorespiratory Care.

20. ``rTMS vs Acute ECT and Maintenance Drug Treatment," Prof. Philip Janicak, Department of Psychiatry, University of Illinois at Chicago.

21. ``Health-Care Encounters between Elderly Patients, Physicians, and Other Care Providers," Professor Kalman J. Kaplan, Department of Psychiatry, University of Illinois at Chicago.

22. ``Altered Gene Expression of Brain-Derived Neurotrophic Factor and Receptor Tyrosine Kinase B in Postmortem Brain of Suicide subjects," Dr. Yogesh Dwivedi, Department of Psychiatry, University of Illinois at Chicago.

23. ``Protein Kinase A Postmortem Brain of Depressed Suicide Victims: Altered Expression of Specific Regulatory and Catalic Subunits," Dr. Yogesh Dwivedi, Department of Psychiatry, University of Illinois at Chicago.
24. ``Does Fluoxetine Enhance Physical or Cognitive Therapy in Multiple Sclerosis? " Dr. Daniel B. Hier, Department of Neurology and Rehabilitation, University of Illinois at Chicago.

25. ``Alcoholism, Depression and Relapse: A Comparative Study of African-American and Non-Hispanic Caucasian Adult Males," (A Clinical Research Project: submitted to the faculty of The Illinois School of Professional Psychology of Argosy University/Chicago in Partial fulfillment of the requirements for the degree of Doctor of Psychology in Clinical Psychology.) Dennis R. Karamitis.

26. ``Hyponatremia: An alternative phenotype of schizophrenia", Dr. Morris B Goldman, Department of Psychiatry, University of Illinois at Chicago.

27. ``Epigenetic Studies in Primary Corticalneurons", Dr. Rajiv Sharma, Department of Psychiatry, University of Illinois at Chicago.

References:

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