Josephine K. Asafu-Adjei, PhD

University of North Carolina at Chapel Hill

Department of Biostatistics

School of Nursing (SON)

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Place of Birth: New York, NY, USA

Research Interests

- Variable Selection Techniques, Machine Learning, Classification Methods, Bayesian Analysis, Discriminant Analysis, Neurostatistics

Education

University of Pittsburgh, Pittsburgh, PA

Ph.D. in Statistics	2011
M.A. in Applied Statistics	2007
B.S. in Mathematics-Economics (joint major), summa cum laude	2004

Professional Experience

Department of Biostatistics, School of Nursing, University of North Carolina at Chapel Hill, Chapel Hill, NC

Research Assistant Professor   2014-Present

- Collaborate with researchers in the Schools of Nursing and Public Health on multiple comparative studies
- Develop and implement statistical analysis methods for research studies in the areas of Nursing and Public Health
- Assist in the design of Nursing research studies
- Provide consulting services as biostatistician for the NC TraCS Institute
- Serve as instructor for BIOS 664-Sample Survey Methodology

Department of Biostatistics, Harvard T.H. Chan School of Public Health, Boston, MA

Yerby Postdoctoral Research Fellow (Mentor: Rebecca Betensky, PhD)   2011-2014

- Developed new statistical methods for variable selection and classification techniques
- Conducted extensive statistical analyses for several studies in neurodegenerative disease research
- Served as coordinator for Neurostatistics Working Group

Department of Statistics, University of Pittsburgh, Pittsburgh, PA

Graduate Student Researcher, Statistics/Data Management Core of the Conte Center for the Neuroscience of Mental Disorders   2007-2011

- Collaborated with Allan Sampson (Core, PI) and David Lewis, M.D. (Center, PI) on multiple comparative analyses between individuals with schizophrenia and normal controls in post-mortem brain tissue studies
- Performed extensive data analyses using a wide range of statistical methods
- Developed new statistical methods for data analysis
- Assisted in designing various human brain imaging and post-mortem brain tissue studies
- Provided statistical analysis plans and methodology sections for grant proposals

Honors and Awards

Harvard T.H. Chan School of Public Health, Boston, MA

- Yerby Postdoctoral Fellowship   2011-2013

American Statistical Association, Pittsburgh Chapter, Pittsburgh, PA

- Student of the Year   2011

University of Pittsburgh, Pittsburgh, PA

- Best Senior Graduate Student of the Year, Department of Statistics   2009
- Best Junior Graduate Student of the Year, Department of Statistics   2007
- K. Leroy Irvis Fellowship, Department of Statistics   2005-2006
- Phi Beta Kappa Society   2004
- Conney M. Kimbo Award   2004
- Helen Faison Scholarship   2000-2004

Publications/Manuscripts

Statistical Methodology

Asafu-Adjei, J.K., Tadesse, M.G., Coull, B.A., Balasubramanian, R, and Betensky R.A. (2016) Bayesian Variable Selection Methods for Matched Case-Control Studies. *The International Journal of Biostatistics.* (*Accepted*)

Asafu-Adjei, J.K. and Sampson, A.R. (2016) Covariate Adjusted Classification Trees (COVACT). *Biostatistics.* (*Revision Requested*)

Asafu-Adjei, J.K. and Betensky R.A. (2015) A Pairwise Naïve Bayes Approach to Bayesian Classification. *International Journal of Pattern Recognition and Intelligence*, 29(7): 1550023(1-22).

Asafu-Adjei, J.K., Sampson, A.R., Sweet, R.A., and Lewis, D.A. (2013) Adjusting for Matching and Covariates in Linear Discriminant Analysis. *Biostatistics*, 14(4):779-91.

Collaborative Publications

Jacobson Vann, J.C., Jacobson R.M., Coyne Beasley, T., **Asafu-Adjei, J.K.**, and Szilagyi, P. (2016) Patient Reminder and Recall Systems to Improve Immunization Rates. *Cochrane Database for Systematic Reviews.* (*Under Review*)

Santos Jr, H., Fried, E.I., **Asafu-Adjei, J.**, and Ruiz, R.J. (2016) Network Structure of Perinatal Depressive Symptoms in Latinas: Relationship to Stress-Related and Reproductive Hormones. *Research in Nursing & Health.* (*Accepted*)

Yeo, S., Walker, J.S., Caughey, M., Ferraro, A. and **Asafu-Adjei, J.K.** (2016) Analysis of Nutrition and Physical Activity Interventions for Obese and Overweight Women to Reduce Weight Gain During Pregnancy: A Systematic Review. *Obesity Reviews.* (*In Press*)

Albers, A.D., **Asafu-Adjei, J.**, Delaney, M.K., Kelly, K., Sperling, R.A., Hyman, B.T., Betensky, R., Hastings, L., and Albers, M.W. (2016) Episodic Memory of Odors Stratifies Alzheimer Biomarkers in Normal Elderly. *Annals of Neurology*, 80:846-857.

McCausland, F., **Asafu-Adjei, J.**, Betensky, R.A., Palevsky, P.M., Waikar, S.S. (2016) Comparison of Urine Output among Patients Treated with More Intensive Versus Less Intensive RRT: Results from the Acute Renal Failure Trial Network Study. *Clinical Journal of the American Society of Nephrology*, 11(8):1335-1342.

Toles, M., Cólon-Emeric, C., **Asafu-Adjei, J.**, Moreton, E. and Hanson, L.C. (2016) Transitional Care of Older Adults in Skilled Nursing Facilities: A Systematic Review. *Geriatric Nursing*, 37(4): 296-301.

Yeo, S., Samuel-Hodge, C.D., Smith, R., Leeman, J., Ferraro, A.M., and **Asafu-Adjei, J.K.** (2016) Challenges of Integrating an Evidence-based Intervention in Health Departments to Prevent Excessive Gestational Weight Gain among Low-income Women. *Public Health Nursing*, 33(3):224-231.

Zègre-Hemsey, J.K., Sommargren, C.E., **Asafu-Adjei, J.K.**, and Drew, B.J. (2015) Normal Prehospital Electrocardiography is Linked to Long-term Survival in Patients Presenting to the Emergency Department with Symptoms of Acute Coronary Syndrome. *Journal of Electrocardiography*, 48(4):520-526.

Moyer, C.E., Delevich, K.M., Fish, K.N., **Asafu-Adjei, J.K.**, Sampson, A.R., Dorph-Petersen, K.A., Lewis, D.A., and Sweet, R.A. (2013) Intracortical Excitatory and Thalamocortical Boutons are Intact in Primary Auditory Cortex in Schizophrenia. *Schizophrenia Research*, 149(1-3):127-34

Moyer, C.E., Delevich, K.M., Fish, K.N., **Asafu-Adjei, J.K.**, Sampson, A.R., Dorph-Petersen, K.A., Lewis, D.A., and Sweet, R.A. (2012) Reduced Glutamate Decarboxylase 65 Protein Within Primary Auditory Cortex Inhibitory Boutons in Schizophrenia. *Biological Psychiatry*, 72(9):734-43.

Curley, A.A., Arion, D., Volk, D.W., **Asafu-Adjei, J.K.**, Sampson, A.R., Fish, K.N., and Lewis, D.A. (2011) Cortical Deficits of Glutamic Acid Decarboxylase 67 Expression in Schizophrenia: Clinical, Protein, and Cell Type-Specific Features. *The American Journal of Psychiatry*, 168(9):921-929.

Erickson, S., Gandhi, A., **Asafu-Adjei, J.**, Sampson, A., Miner, L., Blakely, R., and Sesack, S. (2011) Chronic Desipramine Treatment Alters Tyrosine Hydroxylase but not Norepinephrine Transporter Immunoreactivity in Norepinephrine Axons in the Rat Prefrontal Cortex. *The International Journal of Neuropsychopharmacology*, 14(9):1219-1232.

Verrico, C.D., Liu, S., **Asafu-Adjei, J.K.**, Sampson, A.R., Bradberry, C.W., and Lewis, D.A. (2011) Acquisition and Baseline Performance of Working Memory Tasks by Adolescent Rhesus Monkeys. *Brain Research*, 1378:91-104.

Holmstrand, E.C., **Asafu-Adjei, J.**, Sampson, A.R., Blakely, R.D., and Sesack, S.R. (2010) Ultrastructural Localization of High-Affinity Choline Transporter in the Rat Anteroventral Thalamus and Ventral Tegmental Area: Differences in Axon Morphology and Transporter Distribution. *Journal of Comparative Neurology*, 518(11):1908-1924.

Presentations

Asafu-Adjei, J.K., Tadesse, M.G., Coull, B.A., Balasubramanian, R, and Betensky R.A. (2013) Bayesian Variable Selection Methods for Matched Case-Control Studies. 2013 Joint Statistical Meeting, Montréal, Québec.

Asafu-Adjei, J. (2013) Bayesian Variable Selection Methods for Matched Case-Control Studies. 2013 New England Science Symposium, Boston, MA.

Asafu-Adjei, J. (2012) Bayesian Variable Selection Methods for Matched Case-Control Studies. Neurostatistics Working Group, Harvard School of Public Health, Department of Biostatistics, Boston, MA.

Asafu-Adjei, J.K. and Sampson, A.R. (2012) Covariate Adjusted Classification Trees (COVACT) with Applications to Neuroscience. 2012 Joint Statistical Meeting, San Diego, CA.

Asafu-Adjei, J.K., Sampson, A.R., and Sweet, R.A. (2012) Adjusting for Matching and Covariates in Linear Discriminant Analysis. Eastern North American Region, International Biometric Society 2012 Spring Meeting, Washington, DC.

Asafu-Adjei, J. (2011) Covariate Adjusted Discrimination with Applications to Neuroscience. Neurostatistics Working Group, Department of Biostatistics, Harvard School of Public Health, Boston, MA.

Asafu-Adjei, J.K., Sampson, A.R., and Sweet, R.A. (2009) Adjusting for Matched Samples in Discriminant Analysis of Schizophrenia Biomarkers for Post-Mortem Tissue Studies. 2009 Joint Statistical Meeting, Washington, DC.

Posters

Statistical Methodology

Asafu-Adjei, J.K. and Sampson, A.R. (2012) Covariate Adjusted Classification Trees (COVACT) with Applications to Neuroscience. 2012 Institute of Mathematical Statistics New Researchers Conference in Statistics and Probability, San Diego, CA.

Collaborative Posters

Tran, R., Aldemerdash, A., Chang, P., Sueta, C., Kaufman, B., **Asafu-Adjei, J.**, Vardeny, O., Daubert, E., Kucharska-Newton, A.M., Stearns, S. and Rodgers, J.E. (2016) Mortality Following Initiation or Discontinuation of Guideline Directed Medical Therapy in Hospitalized Heart Failure Patients in the Atherosclerosis Risk in Communities Study. American College of Cardiology, 2016 Conference, Chicago, IL.

Henderson, K.H., Kaufman, B.G., Rotter, J.S., Stearns, S.C., Couper, D., Sueta, C.A., Kucharska-Newton, A.M., Foraker, R.E., **Asafu-Adjei, J.** and Chang, P.P. (2016) Validation of the Atherosclerotic Cardiovascular Disease (ASCVD) Pooled Cohort Risk Equations by Educational Level: The Atherosclerosis Risk in Communities (ARIC). American College of Cardiology, 2016 Conference, Chicago, IL.

Yeo, S., Samuel-Hodge, C., Henderson, M.K., Smith, R., and **Asafu-Adjei, J.** (2014) Integrating Evidence-Based Behavioral Weight Management Interventions (EBIs) in Health Departments to Prevent Excessive Gestational Weight Gain. North Carolina Public Health Association, 2014 Fall Educational Conference, Wilmington, NC.

Albers, A.D., Kelly, K.E., **Asafu-Adjei, J.**, Yan, S., Hyman, B.T., Betensky, R.A., Hastings, L., and Albers, M.W. (2013) Perception of Odor Episodic Memory Screen (POEMS) as a Potential Biomarker for Preclinical Alzheimer's Disease. 2013 Alzheimer's Association International Conference, Boston, MA.

Casgal-Getkin, O., Banigan, M., Patel, N., **Asafu-Adjei, J.**, Betensky, R.A., and Vanderburg, C. (2013) Analysis of Exosomal microRNAs in Cerebrospinal Fluid from Alzheimer's Disease Patients. 2013 International Society for Extracellular Vesicles Annual Conference, Boston, MA.

Moyer, C.E., Delevich, K.M., Fish, K.N., **Asafu-Adjei, J.**, Deo, A.J., Lewis, D.A., and Sweet, R.A. (2010) Effects of antipsychotic exposure on intracortical excitatory, thalamocortical, and inhibitory boutons in primate primary auditory cortex. 2010 Society for Neuroscience Annual Meeting, San Diego, CA.

Research Grants

Funded

NIH/NCI − R21 CA212516-01   2016-2018

- Project Title: Enhancing Survivorship Care Planning for Patients with Localized Prostate Cancer Using A Couple-focused Web-based Tailored Symptom Self-Management Program
- Principal Investigator: Lixin Song
- Project Role: Co-Investigator (10% salary support)

NIH/NIEHS − K23   2016-2021

- Project Title: Inflammatory Markers, Hazardous Air Pollutants, and Psychosocial Factors
- Principal Investigator: Jada Brooks
- Project Role: Statistician (5% salary support)

NIH/NCATS − TraCS $5k-$50k Pilot Award 550KR131619   2016-2017
- Project Title: Postpartum Depressive Symptoms in Latinas: Associations with Oxytocin Function and Stressors
- Principal Investigator: Hudson Santos
- Project Role: Biostatistician

PCORI   2016-2018
- Project Title: Enhancing Patient Ability to Understand and Utilize Complex Information Concerning Medication Self-Management
- Principal Investigator: Susan Blalock
- Project Role: Biostatistician (5% salary support)

NIH/NICHD − R21 HD082707   2016-2018
- Project Title: Enhancing Caregiver-Infant Communication to Prevent Obesity
- Principal Investigator: Eric Hodges
- Project Role: Biostatistician (5% salary support)

NIH/NHLBI − HHSN 268201100012C   2010-2016
- Project Title: Cardiovascular Outcomes Research Center for the Atherosclerosis Risk in Communities (ARIC) Study
- Principal Investigator: Sally Stearns
- Project Role: Biostatistician (10% salary support)

NIH/NCATS − 5 UL1 TR001111-03   2013-2018
- Project Title: North Carolina Translational Clinical Sciences Institute - Biostatistic Services
- Principal Investigator: John Buse
- Project Role: Biostatistician (10% salary support)

NIH/NINDS − F32 NS081904   2012-2014
- Project Title: Bayesian Variable Selection Methods for Matched Case-Control Studies
- Project Role: Principal Investigator (Award Amount: $84,150)

Service on Doctoral Committees
School of Nursing, University of North Carolina at Chapel Hill, Chapel Hill, NC
- Sherry L. Leviner, "Going With the Flow: Left Without Being Seen in the Emergency Department" Member. (Advisor: Debbie Travers)
- Jen-Huei (Vicky) Yeh, "Mastery Learning with Deliberate Practice: Measuring the Impact of Using an Online Approach to Develop Nursing Students Critical Incident SBAR Reporting Competency." Member. (Advisor: Gwen Sherwood)
- Nakia C. Best, "Lack of Reliable and Valid Data to Measure the Value of School Children The Impact of School Nurses on the Health and Academic Success of School Children." Member. (Advisor: Debbie Travers)

University Committee Service
Department of Biostatistics, University of North Carolina at Chapel Hill, Chapel Hill, NC
- Tenure-track Assistant/Associate/Full Professor Search Committee (Member)   2016-present
- Master's Examination Committee (Member)   2015-present
- Tenure-track Assistant Professor Search Committee (Member)   2015

Professional Memberships

- American Statistical Association
- Institute of Mathematical Statistics
- Eastern North American Region, International Biometric Society

Computing Skills

- R, SAS, STATA, LaTeX, Microsoft Office