

# CURRICULUM VITAE

F. DuBois Bowman, Ph.D.

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## Business Address

Department of Biostatistics and Bioinformatics 1518 Clifton Road, N.E.  
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## Personal Web Sites

Center for Biomedical Imaging Statistics: <http://www.sph.emory.edu/bios/CBIS>  
Department of Biostatistics and Bioinformatics: <http://www.sph.emory.edu/faculty/DBOWMA3>

## Education

- 2000 University of North Carolina, Chapel Hill, NC  
Ph.D. in Biostatistics (Co-advisors: P. K. Sen and Paul Stewart)
- 1995 University of Michigan, Ann Arbor, MI  
M.S. in Biostatistics
- 1992 Morehouse College, Atlanta, GA  
B.S. in Mathematics, Magna Cum Laude, **Phi Beta Kappa**

## Professional Experience

- 2006-present Associate Professor, with tenure  
Department of Biostatistics and Bioinformatics, Emory University.  
**Research areas:** *Functional neuroimaging, cardiac imaging, digital mammography, analysis of correlated data.* **Courses:** (i) *Theory of Linear Models* and (ii) *Advanced Topics in Neuroimaging Statistics* to doctoral students in biostatistics.
- 2007-present Director, Center for Biomedical Imaging Statistics (CBIS)  
The Rollins School of Public Health, Emory University.
- 2008-present Neuroscience Program Faculty Member  
Graduate Division of Biological and Biomedical Sciences, Emory University.
- 2000-2006 Assistant Professor  
Department of Biostatistics, Emory University.

- 2005 Visiting Assistant Professor  
Department of Biostatistics, Johns Hopkins University.
- 2001 Visiting Scholar  
Department of Statistics, Carnegie Mellon University.
- 1997-2000 Statistician  
Rho, Inc., Chapel Hill, North Carolina  
*Statistician for clinical trials targeting drug development in multiple therapeutic areas. Developed statistical analysis plans and study designs, performed statistical analyses, wrote analysis reports, and presented results to clients.*
- 1995 Mathematics Instructor  
Department of Mathematics, Washtenaw Community College  
*Instructor for two courses: Trigonometry and College Algebra.*
- 1993-1995 Statistician/Research Assistant  
University of Michigan, Program for Research on Black Americans  
*Conducted statistical research and analyzed data for a study dealing with reliability of psychiatric diagnoses between groups of observers.*
- 1994-1995 Statistician/Research Assistant  
Department of Biostatistics, University of Michigan  
*Responsible for statistical analyses and report writing for a variety of projects.*

## Honors and Awards

- President-Elect, 2012, Eastern North American Region (ENAR) of the International Biometric Society.
- Fellow of the American Statistical Association, 2012
- Phi Beta Kappa
- Atlanta Hawks Black History Month Trailblazer, 2009
- Graduate Student Advisee Special Honors:
  - Dissertation advisor for 2012 David P. Byar Young Investigator Award winner, Shuo Chen, Biometrics Section of ASA
  - Dissertation advisor for JSM 2011 Student Paper Competition winner, Shuo Chen, Section on Statistical Learning and Data Mining of the American Statistical Association (ASA)
  - Dissertation advisor for ENAR 2009 John Van Ryzin Award winner, Gordana Derado, for best research paper.
- James E. Grizzle Distinguished Alumni Award, 2008, Department of Biostatistics, University of North Carolina at Chapel Hill
- Woodruff Leadership Academy 2007 Fellow, Woodruff Health Sciences Center, Emory University

- On authorship team receiving the Albert E. Levy Scientific Research Award for outstanding scientific contributions by Emory University faculty, 2007 (see Robertson et al., 2007).
- Great Scholars, Great Work Profile, Emory University, 2007
- National Ford Foundation Pre-doctoral Fellow
- National Ford Foundation, Honorable Mention Dissertation Fellow
- National Heart, Lung, and Blood Institute Trainee, University of North Carolina
- Rackham Merit Fellow, University of Michigan
- Minority Presence Fellow, University of North Carolina
- Pi Mu Epsilon Honorary Mathematics Society
- Beta Kappa Chi Science Honors Society
- Golden Key Honors Society
- Who's Who
- Academic Scholarship and Dean's List, Morehouse College

## Editorial and Review Activities

### Associate Editor

*Journal of the American Statistical Association, Applications and Case Studies, 2007-2012*  
*Biometrics, 2007-2009*

### Referee:

*Annals of Applied Statistics*

*Biological Psychiatry*

*Biometrics*

*Biostatistics*

*Brain Imaging and Behavior*

*Human Brain Mapping*

*IEEE Transactions on Biomedical Engineering*

*IEEE Transactions on Medical Imaging*

*Journal of the American Statistical Association*

- *Theory and Methods*
- *Case Studies and Applications*

*Journal of Clinical Oncology*

*Journal of Computational Neuroscience*

*Medical Physics*

*NeuroImage*

*PLOS ONE*

*Statistics and Its Interface*

*Statistics in Medicine*

*Statistical Methods in Medical Research*

*Statistica Sinica*

### Review and Advisory Activities

National Institutes of Health (NIH), **Invited grant reviewer**, Biostatistical Methods and Research Design (BMRD) Study Section, **Invited Grant Reviewer**, 2012.

NIH, **Invited special emphasis panel grant reviewer**, National Institute for Child Health and Human Development (NICHD), ZHD1 DRG-H 52, Learning Disabilities Innovation Hubs, 2012.

**External Advisory Committee member**, Multimodal Neuroimaging Training Program, Carnegie Mellon University and the University of Pittsburgh, 2012.

Emory University Alzheimer's Disease Research Center, **Grant reviewer**, 2012.

National Academies (National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and the National Research Council) Keck Futures Initiative Conference on Imaging Science, **Selected workshop participant**, Irvine, CA, 2010.

NIH, **Invited special emphasis grant review panelist** for health services, clinical, and population health research, 2009.

Atlanta University Center (AUC) National Institute of Mental Health (NIMH) Career Opportunities in Research (COR) **Advisory Board**, 2009-present.

NIH, BMRD Study Section, **Invited Grant Reviewer**, 2008.

ENAR Regional Committee (**RECOM**) Member, 2007-2009, elected position. RECOM is the governing body of ENAR.

NIH, NIMH, **Invited grant review panelist for K99 Pathway to Independence Grants**, telephone meeting, 2007.

NIH, NIMH, **Invited grant review panelist for K99 Pathway to Independence Grants**, Bethesda, MD, 2007.

NIH, BMRD Study Section, **Invited Grant Reviewer**, Bethesda, MD, 2006.

NIH, Reward Neurocircuitry in Adolescent Development and Decision Making Workshop, Sponsored by National Institute on Drug Abuse (NIDA), NIMH, National Institute of Child Health and Human Development (NICHD), and National Institute of Neurological Disorders and Stroke (NINDS), **Invited workshop participant**, Bethesda, MD, 2006.

NIH, National Institute of Biomedical Imaging and Bioengineering (NIBIB), **Invited special emphasis grant review panelist**, Bethesda, MD, 2003.

ENAR Regional Advisory Board (**RAB**), 2003-2005, appointed by President Dr. Tim Gregoire.

ENAR By-laws Review Committee, 2005-2006, appointed by President Dr. Peter Imrey.

Data and Safety Monitoring Board, 2001-2005, "Advance Provision of Emergency Contraceptive Pills," Family Health International (FHI), Indiana University, and University of California at San Francisco. Raymond, E., FHI principal investigator. Sponsored by NIH.

## Grants and Funding

### External Funding for Research

\* See also: Teaching Activities: Training/Educational Grants

**PI: Bowman, F. D.**, National Institutes of Health (NIH) U18, “Analytic Methods for Determining Multimodal Biomarkers for Parkinson's Disease,” National Institute of Neurological Disorders and Stroke (NINDS), 2012-2015, \$908,659 (35%).

**PI: Bowman, F. D.**, National Institutes of Health (NIH) R01, “Analytic Methods for Functional Neuroimaging Data,” National Institute of Mental Health (NIMH), 2007-2012, \$1,063,580 (50%).

**PI: Bowman, F. D.**, NIH K25, “Statistical Methods for Neuroimaging Data,” NIMH, 2002-2007, \$535,982 (75%).

**PI's: Bowman, F. D. and Vidakovic, B.**, “Wavelet Image Interpolation (WII): A Wavelet-based Approach to Enhancement of Digital Mammography Images,” Georgia Cancer Coalition, 2005-2006, \$39,557 (10%).

**Co-investigator: Bowman, F. D.** (PI: Jovanovic, T.), NIH R21, “Neuroimaging correlates of impaired fear inhibition in PTSD,” NIMH, 2012-2015. (10%)

**Co-investigator: Bowman, F. D.** (PI: Schuster, D.), NIH R01, “18F-FACBC PET-CT for the Detection and Staging of Recurrent Prostate Carcinoma,” National Cancer Institute (NCI), 2007-2012. (5%)

**Co-investigator: Bowman, F. D.** (PI: Kilts, C.), NIH R01, “Cocaine Dependence and Cognitive Control of Behavior,” National Institute on Drug Abuse, 2003-2007. (10%)

**Co-investigator: Bowman, F. D.** (PI: Faber, T.), NIH R01, “Detecting Changes in Myocardial Perfusion and Function,” National Heart, Lung, and Blood Institute, 2002-2005. (15%)

### Training/Educational Grants

**Co-Mentor** (0%), NIH K25, “Whole-Brain Analyses via linear and exponential graph modeling methods,” National Institute of Biomedical Imaging and Bioengineering (NIBIB), 2012-2017. (PI: Simpson, S., Wake Forest University).

**Neuroimaging Track Director** and member of training faculty (5%), NIH T32, “Biostatistics in Genetics, Immunology, and Neuroimaging,” 2005-2013. (PI: Waller, L., Emory University).

**Co-PI** and member of training faculty, NIH T32 (MH067547), “Training Program in Neuroimaging Sciences,” 2005-2010. (PIs: Bremner, J. and Hu, X., Emory University and Georgia Institute of Technology).

**Co-investigator**, NIH R13, “Workshop for Junior Biostatisticians in Health Research,” NCI, 2009-2011, \$100,000, (PI: Amy Herring, University of North Carolina)

**Executive Committee Member**, NIH Postbaccalaureate Research Education Program (PREP) for underrepresented minority students at Emory University (PI’s: Gordon Churchward (Microbiology and Immunology) and Cathy Quinones (Center for Science Education)), 2011-present.

**Co-PI**: Emory University Teaching Fund. Funding for the development of a new course entitled “Introduction to Computational and Life Sciences,” 2006-2007 (Primary Co-PIs: Kim Gernert, BimCore Director, and James Lu, Associate Professor of Computer Science).

### **Emory University Funding**

Center for Positron Emission Tomography, 2000-2003 (25%).

## **Research**

### **Peer Reviewed Publications**

\* Indicates publications for which one of Bowman’s Ph.D. students or post-doctoral students is the first author.

### **Chapters in Books and Edited Volumes:**

†peer reviewed

†Caffo, B., **Bowman, F. D.**, Eberly, L., and Bassett, S. S. (2011). A Markov Chain Monte Carlo Based Analysis of a Multilevel Model for Functional MRI Data, Handbook of Markov Chain Monte Carlo: Methods and Applications, edited by Steve Brooks, Andrew Gelman, Galin Jones, and Xiao-Li Meng, Chapman & Hall.

\*†Derado, G., Lee, K., Nicolis, O., **Bowman, F. D.**, Newell, M., Rugger, F. F., and Vidakovic, B. (2008). Wavelet-based 3-D Multifractal Spectrum with Applications in Breast MRI Images. Bioinformatics Research and Applications. Lecture Notes in Bioinformatics, volume 4983, Springer-Verlag: 281-292.

\*†Derado, G., **Bowman, F. D.**, Patel, R., Newell, M., and Vidakovic, B. (2007). Wavelet Image Interpolation (WII): A Wavelet-based Approach to the Enhancement of Digital Mammography Images. Mandoiu and A. Zelikovsky (Eds.) Bioinformatics Research and Applications. Lecture Notes in Bioinformatics, volume 4463, Springer-Verlag: 203-214.

**Bowman, F. D.**, Guo, Y., and Derado, G. (2007). Statistical Approaches to Neuroimaging Data. *Neuroimaging Clinics of North America: Imaging of the Mind* 17(4): Nov. 2007, 441-458.

### **Methodology Papers:**

**Bowman, F. D.** (2014). Imaging Analysis. *Annual Review of Statistics and Its Application*, vol. 1.

(invited article in progress).

Simpson, S., Laurienti, P., and **Bowman, F. D.** (2013). Complex fMRI Networks. *Statistics Surveys*. (invited article in progress).

D'Angelo, G., Lazar, N., and **Bowman, F. D.** (2013). Statistical Analysis and Issues in Resting State fMR Data: Challenges and Future Directions. *Statistics Surveys*. (invited article in progress).

\*Chen, S., **Bowman, F. D.**, and Mayberg, H. A Bayesian Hierarchical Framework for Modeling Brain Connectivity in Neuroimaging Data. (submitted)

\*Xue, W. and **Bowman, F. D.** Modeling Functional Connectivity in the Human Brain with Incorporation of Structural Connectivity. (submitted)

**Bowman, F. D.**, Zhang, L., Derado, G., and Chen, S. (2012). Determining Functional Connectivity using fMRI Data with Diffusion-Based Anatomical Weighting. *NeuroImage*, 62: 1769-1779.

\*Derado, G., **Bowman, F. D.**, and Zhang, L. (2012). Predicting Brain Activity using a Bayesian Spatial Model. *Statistical Methods in Medical Research*, doi: 10.1177/0962280212448972.

\*Zhang, L., Agravat, S., Derado, G., Chen, S., and **Bowman, F. D.** (2012). BSMac: A MATLAB toolbox Implementing a Bayesian Spatial Model for Brain Activation and Connectivity. *Journal of Neuroscience Methods*, 204: 133-143.

\*Chen, S. and **Bowman, F. D.** (2011). A Novel Support Vector Classifier for Longitudinal High-dimensional Data and Its Application to Neuroimaging Data. *Statistical Analysis and Data Mining*, 4(6): 604-611. [Winning paper for JSM 2011 Student Paper Competition, ASA Section on Statistical Learning and Data Mining]

\*Derado, G., **Bowman, F. D.**, Ely, T., and Kilts, C. (2010). Evaluating Functional Autocorrelation within Spatially Distributed Neural Processing Networks. *Statistics and Its Interface*, 3: 45-57.

\*Derado, G., **Bowman, F. D.**, and Kilts, C. (2010). Modeling the spatial and temporal dependence in fMRI data. *Biometrics*, 66: 949-957. [Based on ENAR 2009 John Van Ryzin Award for best research paper]

Guo, Y. and **Bowman, F. D.** (2008). Modeling Dose-Dependent Neural Processing Responses Using Mixed Effects Spline Models. *NeuroImage*, 40: 698-711.

Guo, Y., **Bowman, F. D.**, and Kilts, C. D. (2008). Predicting the Brain Response to Treatment using a Bayesian Hierarchical Model with Application to a Study of Schizophrenia. *Human Brain Mapping*, 29(9): 1092-1109.

**Bowman, F. D.**, Caffo, B. A, Bassett, S., and Kilts, C. (2008). Bayesian Hierarchical Framework for Spatial Modeling of fMRI Data. *NeuroImage* 39: 146-156.

- Bowman, F. D.** (2007). Spatio-Temporal Models for Region of Interest Analyses of Functional Neuroimaging Data, *Journal of the American Statistical Association* 102(478): 442-453.
- Lyles, R., Manatunga, A., Moore, R., and **Bowman F. D.** (2007). Improving point predictions of random effects for subjects at high-risk, *Statistics in Medicine* 26: 1285-1300.
- \*Patel, R., **Bowman, F. D.**, and Rilling, J. K. (2006a). A Bayesian Approach to Determining Connectivity of the Human Brain. *Human Brain Mapping* 27: 267-276.
- \*Patel, R., **Bowman, F. D.**, and Rilling, J. K. (2006b). Determining Hierarchical Functional Networks from Auditory Stimuli fMRI. *Human Brain Mapping* 27: 462- 470.
- \*Patel, R., Van De Ville, D., and **Bowman, F. D.** (2006). Determining Significant Connectivity by 4D Spatiotemporal Wavelet Packet Resampling of Functional Neuroimaging Data. *NeuroImage* 31: 1142 - 1155.
- Bowman, F. D.** Spatiotemporal Modeling of Localized Brain Activity (2005). *Biostatistics* 6(4): 558-575.
- Bowman, F. D.** and Manatunga, A. (2005). A Joint Model for Longitudinal Data Profiles and Associated Event Risks With Application to a Depression Study. *Journal of the Royal Statistical Society, Series C, Applied Statistics* 54(2): 301-316.
- Bowman, F. D.** and Waller, L. A. (2004). Modeling of Cardiac Imaging Data with Spatial Correlation. *Statistics in Medicine* 23(6): 965-985.
- Bowman, F. D.** (2004). Predicting Power for Longitudinal Studies with Attrition, *Biometrical Journal* 46(4): 453-459.
- Bowman, F. D.** and Patel, R. (2004) Identifying Spatial Relationships in Neural Processing Using a Multiple Classification Approach. *NeuroImage* 23: 260-268.
- Bowman, F. D.**, Patel, R., and Lu, C. (2004) Methods for Detecting Functional Classifications in Neuroimaging Data. *Human Brain Mapping* 23(2): 109-119.  
\***Special Recognition:** Featured on the cover of the October issue of *Human Brain Mapping*.
- Bowman, F. D.**, Stewart, P. W., Sen, P. K., and Helms, R. W. (2004) Making Inferences about Projected Completers in Longitudinal Studies. *Journal of Biopharmaceutical Statistics* 14(4): 947-967.
- Bowman, F. D.** and Kilts, C. (2003). Modeling Intra-subject Correlation Among Repeated Scans in Positron Emission Tomography (PET) Neuroimaging Data. *Human Brain Mapping* 20(2): 59-70.



### Applications Papers:

- Kennedy, A. P., Binder, E. B., **Bowman, F. D.**, Harenski, K., Ely, T., VanNess, S., Kilts, C. D. (2012). A common *TPH2* haplotype regulates the neural processing of a cognitive control demand. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*. (accepted).
- Schuster D. M., Savir-Baruch B., Nieh P. T., Master V. A., Halkar R. K., Rossi P. J., Lewis M. M., Nye J. A., Yu W., **Bowman F. D.**, Goodman M. M. (2011). Detection of recurrent prostate carcinoma with *anti*-1-amino-3 [<sup>18</sup>F]fluorocyclobutane-1-carboxylic acid (*anti*-3-[<sup>18</sup>F]FACBC) PET-CT and <sup>111</sup>Indium-capromab-pendetide (ProstaScint) SPECT-CT. *Radiology*, 259(3): 852-861.
- Schuster, D. M., Halkar, R. K., Esteves, F. P., Garcia, E. V., Cooke, C. D., Syed, M. A., **Bowman, F. D.**, and Votaw, J. R. (2008). Investigation of Emission Transmission Misalignment Artifacts on Rubidium-82 Cardiac PET with Adenosine Pharmacologic Stress. *Molecular Imaging and Biology*, 10:201-208.
- Robertson, D., Snarey, J., Ousley, O., Harenski, K., **Bowman, F. D.**, Gilkey, R., Kilts, C. (2007) The neural basis of moral sensitivity to issues of justice and care: an fMRI study. *Neuropsychologia* 45(4): 755-766.  
**\*Special Recognition:** Earned the Albert E. Levy Scientific Research Award, Emory University.
- Schuster D. M., Votaw J., Nieh P. T., Yu W., Nye J. A., Master V., **Bowman F. D.**, Issa M. M., Goodman M. M. (2007). Initial experience with the radiotracer anti 1-amino-3-[<sup>18</sup>F]fluorocyclobutane-1-carboxylic acid with PET/CT in prostate carcinoma. *The Journal of Nuclear Medicine* 48: 56-63.
- Kilts, C. D., Kelsey, J. E., Knight, B., Ely, T. D., **Bowman, F. D.**, Gross, R. E., Selvig, A., Gordon, A., Newport, D. J., Nemeroff, C. B. (2006) The Neural Correlates of Social Anxiety Disorder and Response to Pharmacotherapy. *Neuropsychopharmacology* 31: 2243-2253.
- Page, S. T., Amory J. K., **Bowman, F. D.**, Anawalt, B. D., Matsumoto, A. M., Bremner, W. J., Tenover, J. L. (2005). Exogenous Testosterone (T) Alone or T with Finasteride Increases Physical Performance, Grip Strength, and Lean Body Mass in Older Men with Low Serum T. *The Journal of Clinical Endocrinology and Metabolism* 90(3): 1502-1510.
- Votaw, J., Byas-Smith, M., Hua, J., Voll, R., Martarello, L., Levey, A. I., **Bowman, F. D.**, Goodman, M. (2003). Interaction of Isoflurane with the Dopamine Transporter. *Anesthesiology* 98: 404-411.

### Other Manuscripts

- Bowman, F. D.**, Caffo, B. A, Bassett, S., and Kilts, C. (2007). Bayesian Hierarchical Framework for Spatial Modeling of fMRI Data. Johns Hopkins University, Dept. of Biostatistics Working Papers, Number 139. <http://www.bepress.com/jhubiostat/paper139>
- Patel, R. S., **Bowman, F. D.**, Guo, Y., and Derado, G. (2006). Integrating Support Vector

Machines, Supervised Principal Components, and Boosting to Interpret Brain Activity. Pittsburgh Brain Activity Interpretation Competition. Held at the Organization for Human Brain Mapping, 12<sup>th</sup> Annual Meeting, Florence, Italy.

**Bowman, F. D.** (2004). Spatio-Temporal Models for Volume of Interest Analyses of Neuroimaging Data, Technical Report Number: 04-10, Department of Biostatistics, Emory University.

Helms, R. W., **Bowman, F. D.**, Kesler, K. K., Marquis, C. (1999). Learning to Fly with Longitudinal Logistic Regression Models and Generalized Estimating Equations. Copyrighted unpublished manuscript, Rho, Incorporated, Chapel Hill, NC.

### **Keynote and Grand Rounds Presentations**

Bowman, F. D. (2013). "Statistical Methods for Determining Biomarkers from Brain Imaging Data: Applications to Parkinson's Disease and Major Depression," invited speaker in the Public Health Sciences Grand Rounds, Rollins School of Public Health, Emory University, Atlanta, GA.

Bowman, F. D. (2008). "Exploring the Human Brain through Statistical Methods for Neuroimaging Data," invited speaker in the Center for Rehabilitation Medicine Grand Rounds, Emory Healthcare, Atlanta, GA.

Bowman, F. D. (2008). "Modeling Brain Imaging Data to Find Neural Representations of Behavior and Disease", Keynote address at the 10<sup>th</sup> Annual Symposium on Statistics in Psychiatry, New York University, University of Pennsylvania, Columbia University, and Yale University, New York, NY.

Bowman, F. D. (2008), "Statistics: A Pathway to a Promising Future." StatFest: A Conference for Undergraduates, sponsored by the American Statistical Association, October 2008, Beaumont, TX.

Bowman, F. D. (2007), "Staying the Course: Pursuing Research Careers in Mental Health." The 2007 NIMH Career Opportunities in Research (COR) Annual Colloquium, November 2007, Albuquerque, New Mexico.

Bowman, F. D. (2005). "Characterizing Experimentally Induced Neural Processing: A Spatial Model for Neuroimaging Data," invited seminar for Biostatistics Grand Rounds, Johns Hopkins Bloomberg School of Public Health.

### **Invited Research Paper Presentations**

Bowman, F. D. (2012). "A Multimodal Technique for Determining Connectivity within the Human Brain," Invited speaker at the Multimodal Neuroimaging Training Program, Carnegie Mellon University and the University of Pittsburgh, Pittsburgh, PA.

Bowman, F. D. (2012). "Analysis of Large-scale Neuroimaging Data: Methods for Determining Functional Connectivity and Task-Related Changes in Neural Processing," Invited speaker

in the Division of Biostatistics, Washington University School of Medicine, St. Louis, MO..

- Bowman, F. D. and Chen, S. (2012). "A Novel Support Vector Classifier for Longitudinal High-dimensional Data," invited talk at ENAR Spring Meeting, Washington, D. C.
- Bowman, F. D. (2012). "A Bayesian Spatial Model for the Analysis of Large-scale Neuroimaging Data," Invited speaker at the 5th Annual Bayesian Biostatistics Conference, The University of Texas MD Anderson Cancer Center, Houston, TX.
- Bowman, F. D. (2011). "Characterizing Behavior-Related Neural Processing Changes and Functional Connectivity in the Human Brain," Invited speaker at the John and Mary Franklin Foundation Paul D. Coverdell Neuroimaging Program, University of Georgia, Athens, GA.
- Bowman, F. D. (2011). "A Bayesian Spatial Model for the Analysis of Large-scale Neuroimaging Data," Invited speaker at The Brad Efron Honorary Symposium on Large-Scale Inference, Social and Scientific Systems, Inc., Silver Spring, MD.
- Bowman, F. D. (2011). "Statistical Analysis of Neuroimaging Data: A look at current methods and challenges," Invited speaker at the National Science Foundation Workshop on Statistical Analysis of Neuroimaging Data for Social and Behavioral Science Research, Arlington, VA.
- Bowman, F. D. (2011). "Predicting Brain Activity using a Bayesian Spatial Model," Invited speaker in the Bernoulli Society sponsored session "Statistics in Neuroscience", International Statistical Institute, Dublin, Ireland.
- Bowman, F. D. (2011). "A Bayesian Spatial Model for Predicting Brain Activity," Invited speaker JSM, Miami, FL.
- Bowman, F. D. (2011). "Predicting Brain Activity using a Bayesian Spatial Model," Invited speaker at the Statistical Methods for Very Large Data Sets Conference, Baltimore, MD.
- Bowman, F. D. (2011). "A Spatial Modeling Framework for Functional Neuroimaging Data," Invited speaker at the University of Florida Workshop on High Dimensional Inference, Gainesville, FL.
- Bowman, F. D. (2010). "Statistical Modeling of Brain Imaging Data: An Overview, Challenges, and Future Directions," Invited speaker at the Statistical and Applied Mathematical Sciences (SAMSI) 2010-11 Analysis of Object Data Opening Workshop and Tutorials, Research Triangle Park, NC.
- Bowman, F. D., Derado, G., and Chen, S. (2010). "Determining Differences in Functional Connectivity using a Combined fMRI/DTI Analysis," Topic Contributed Paper Session at the Joint Statistical Meetings, Vancouver, British Columbia, Canada.
- Bowman, F. D., Derado, G., and Chen, S. (2010). "Determining Resting-State Neural Processing

Networks: A Combined fMRI-DTI Approach," invited talk at ENAR Spring Meeting, New Orleans, LA.

Bowman, F. D. (2009). "Determining Resting-State Neural Processing Networks: A Combined fMRI-DTI Approach," invited talk in a session entitled "Emerging Applications in High-Dimensional Data Analysis" at the 60<sup>th</sup> Anniversary of the Department of Biostatistics, University of North Carolina, Chapel Hill, NC.

Bowman, F. D. (2009). "Determining Resting-State Neural Processing Networks: A Combined fMRI-DTI Approach," speaker in the Statistica Sinica Invited Paper Session "Analysis of complex and high-dimensional data" at the Joint Statistical Meetings, Washington, D. C.

Bowman, F. D. (2009), "Characterizing Neural Processing and Mechanisms of treatment using Neuroimaging Statistics," invited talk in the NIMH Mentored Training Program to Increase Diversity in HIV, Substance Use and Mental Health (R25MH080669-01A1), Morehouse School of Medicine, Atlanta, GA.

Bowman, F. D. (2009), "Bayesian vs. Frequentist Statistical Methods in Neuroimaging Applications," invited speaker in symposium entitled "To Be Bayesian or Frequentist or Not: A Debate on Functional Imaging Analyses," 15th annual meeting of the Organization for Human Brain Mapping (OHBM), San Francisco, CA. Published *NeuroImage*, v. 47, pp. S7.

Bowman, F. D. (2009). "Identifying Behavior-Related Neural Processing Alterations and Functional Connections in the Human Brain: A Spatial Modeling Approach for fMRI Data," invited speaker at Brown University, Center for Statistical Sciences, Providence, RI.

Bowman, F. D. (2009). "A Unified Approach for Identifying Behavior-Related Neural Processing Alterations and Functional Connections in the Human Brain: A Spatial Modeling Approach for fMRI Data," invited speaker at Columbia University, Department of Statistics Seminar Series, New York, NY.

Bowman, F. D. (2008). "Bayesian spatial hierarchical modeling," invited speaker at the Institute for Pure and Applied Mathematics (IPAM) Program entitled "Mathematics in Brain Imaging," University of California at Los Angeles (UCLA), Los Angeles, CA.

Bowman, F. D. (2008). "Discovering Patterns of Connectivity within the Human Brain," invited talk at the Joint Statistical Meetings, Denver, CO.

Bowman, F. D. (2008). "A Look into the Human Brain: Neural Processing Representations of Behavior and Disease," James Grizzle Distinguished Alumni Award Lecture, University of North Carolina at Chapel Hill, Department of Biostatistics, Chapel Hill, NC.

- Bowman, F. D. (2008). "Bayesian Analysis for fMRI Data," invited speaker at the 14th annual meeting of the Organization for Human Brain Mapping (OHBM), Advanced fMRI Course, Melbourne, Australia.
- Bowman, F. D. (2008). "A Unified Approach for Identifying Behavior-Related Neural Processing Alterations and Functional Connections in the Human Brain: A Spatial Modeling Approach for fMRI Data," Special invited lecture at Statistical Analysis of Neuronal Data Workshop (SAND4), Carnegie Mellon University, Pittsburgh, PA.
- Bowman, F. D. (2008). Statistical Modeling Approaches to Characterize Experimentally-Induced Alterations in Human Brain Function, invited talk at the University of Georgia, Department of Statistics, Athens, GA.
- Bowman, F. D. (2007). "Bayesian Hierarchical Modeling of Functional Neuroimaging Data," invited talk at the International Chinese Statistical Association, Applied Statistics Symposium, Raleigh, NC.
- Bowman, F. D. (2007). "Detecting Differential Patterns of Activation in the Human Brain," invited talk at the 11th Biennial CDC & ATSDR Symposium on Statistical Methods: Analyzing and Mapping Health Inequities to Impact Policies for Eliminating Disparities, Atlanta, GA.
- Bowman, F. D. (2007). "Statistical Modeling Approaches to Characterize Experimentally-Induced Alterations in Human Brain Function," invited talk at Massachusetts Institute of Technology, Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Harvard-Massachusetts Institute of Technology Division of Health Sciences & Technology and the Massachusetts General Hospital, Boston, MA.
- Bowman, F. D. (2007). "Bayesian Hierarchical Modeling of Functional Neuroimaging Data," invited talk at ENAR Spring Meeting, Atlanta, GA.
- Bowman, F. D. (2007). "Spatial Modeling Approaches to Characterize Experimentally-Induced Alterations in Human Brain Function", invited talk at Vanderbilt University School of Medicine, Department of Biostatistics, Nashville, TN.
- Bowman, F. D. (2007). "Statistical Modeling Approaches to Characterize Experimentally-Induced Alterations in Human Brain Function", invited talk at the University of Michigan, Department of Biostatistics, Ann Arbor, MI.
- Bowman, F. D. and Patel, R. (2006). "A Bayesian Hierarchical Model for Determining Connectivity of the Human Brain," Functional Connectivity Working Group, Biomedical Imaging Technology Center, Emory University.
- Bowman, F. D. (2006). "Prediction of post-treatment brain activity using a Bayesian Hierarchical Model," invited talk at Joint Statistical Meetings, Seattle, WA.

- Bowman, F. D. (2006). "Prediction of post-treatment brain activity using a Bayesian Hierarchical Model," invited talk at WNAR Summer Meeting, Flagstaff, AZ.
- Bowman, F. D. (2005). "Modeling Spatial Correlations in Functional Neuroimaging Data," invited seminar at North Carolina State University, Department of Statistics, Raleigh, NC.
- Bowman, F. D. (2005). "Modeling Spatial Correlations in Functional Neuroimaging Data," invited seminar at Centers for Disease Control and Prevention.
- Bowman, F. D. (2005). "Covariance Modeling for High-Dimensional Data Problems: Issues and Strategies," Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, invited seminar for Neuroimaging and Expressionist Working Groups.
- Bowman, F. D. (2005). "Modeling Spatial Correlations in Functional Neuroimaging Data," invited talk in Topic Contributed Session (Modeling for Brain Imaging Data), Joint Statistical Meetings, Minneapolis, MN.
- Bowman, F. D. (2005). "Spatial Modeling of Localized Brain Activity in PET Neuroimaging Data," invited talk in Topic Contributed Session, ENAR Spring Meeting, Austin, TX.
- Bowman, F. D. (2004). "Biostatistical Methods in Imaging Research," invited presentation for the 40<sup>th</sup> Anniversary Celebration of the Department of Biostatistics, Emory University.
- Bowman, F. D. and Patel, R. (2004). "Exploring Spatial Relationships in PET Neuroimaging Data," invited seminar at Carnegie Mellon University, Department of Statistics.
- Bowman, F. D. (2003). "Estimating Localized Brain Activity in Positron Emission Tomography (PET) Neuroimaging Data Using Linear Models with Structured Covariance Matrices," invited seminar at Johns Hopkins University, Department of Biostatistics.
- Bowman, F. D. (2003). "Borrowing Strength to Detect Changes in Localized Brain Activity in Positron Emission Tomography (PET) Neuroimaging Data," invited seminar at Georgia State University, Image Analysis Seminar Series, Department of Mathematics and Statistics.
- Bowman, F. D. (2003). "Detecting Localized Brain Activity Changes in Positron Emission Tomography (PET) Neuroimaging Data," invited seminar at Emory University, Department of Biostatistics.
- Bowman, F.D. and Manatunga, A. (2002). "Jointly Modeling Longitudinal Data Profiles and Response-Altering Event Risks," invited talk in Topic Contributed Session (Analyzing Response Profiles from Longitudinal Data Using Mixed Models) at Joint Statistical Meetings, New York, NY.
- Bowman, F.D. and Manatunga, A. (2002). "Jointly Modeling Longitudinal Data Profiles and Response-Altering Event Risks," invited talk in Dedicated Session (A Mixed View of Current Longitudinal Data Methods) at International Biometrics Conference, Freiberg, Germany.

**Contributed Research Paper and Poster Presentations**

Bowman, D. and Derado, G. (2011). "Predicting Brain Activity Using a Bayesian Spatial Hierarchical Model," 17th annual meeting of the Organization for Human Brain Mapping (OHBM), Quebec City, Canada.

Bowman, F.D. (2010). "A Bayesian Spatial Model for Identifying Localized Brain Activity Changes and Functional Connectivity," International Biometrics Conference, Florianopolis, Santa Catarina, Brazil.

Bowman, D., Derado, G., and Chen, S. (2009). "Evaluating Functional Connectivity using fMRI Data with Diffusion-Based Anatomical Weighting," 15th annual meeting of the Organization for Human Brain Mapping (OHBM), San Francisco, CA. Published *NeuroImage*, v. 47, pp. S147.

Bowman, F. D. and Derado, G. (2008). "Modeling the spatial and temporal dependence in fMRI data: An application to a study of inhibitory control in cocaine addiction," 14th annual meeting of the Organization for Human Brain Mapping (OHBM), Melbourne, Australia. Published *NeuroImage*, v. 41, p. S30.

Bowman, F. D. and L. A. Waller (2001). "Exploring Statistical Models for Cardiac Imaging Data." Joint Statistical Meetings, Atlanta, GA.

Bowman, F. D. (2000). "The First Steps to Analyzing Neuroimaging Data from PET Studies: An Introduction to the General Linear Model." Center for Positron Emission Tomography, Emory University.

Bowman, F. D., Sen, P. K., Stewart, P. W. (1999). "Making Inferences about Projected Completers in a Disability Study with Nonignorable Dropout." Joint Statistical Meetings, Baltimore, MD.

Bowman, F. D., Sen, P. K., Stewart, P. W. (1999). "Strategies for Making Inferences about Projected Completers in Longitudinal Studies with Nonignorable Dropout." Duke University, Emory University, Harvard University, and the University of Pennsylvania.

Bowman, F. D. (1999). "Designing Hypertension Trials to Mitigate the Effects of Bias Caused by Dropouts." The University of North Carolina at Chapel Hill, Collaborative Studies Coordinating Center, Cardiovascular Disease Clinical Trials Group.

Bowman, F. D. (1994). "Statistical Methods for Analyzing Time to Event Data with Censored Observations." National Ford Foundation Conference, Irvine, CA.

Bowman, F. D., Aubert, R. (1992). "Association between Psychosocial Factors and Hypertension among African-Americans." Centers for Disease Control and Prevention, Atlanta, GA.

**Presentations (Paper and Poster) as Non-presenting Co-Author**

- Chen, S. and Bowman, F. D. (2012). "A Bayesian Hierarchical Framework for Modeling Brain Connectivity of Neuroimaging Data," Topic Contributed talk at the Joint Statistical Meetings, San Diego, CA.
- Xue, W. and Bowman, F. D. (2012). "Modeling Functional Connectivity In The Human Brain With Incorporation Of Structural Connectivity," Joint Statistical Meetings, San Diego, CA.
- Zhang, L., Bowman, F. D., and Wang, M. (2012). "An Extended Gee Model With Latent Variables For Brain Fmri Connectivity," poster presentation at Joint Statistical Meetings, San Diego, CA.
- Chen, S., Bowman, F. D., and Zhang, L. (2012). "A Bayesian Hierarchical Framework for Modeling Brain Connectivity of Neuroimaging Data," ENAR Spring Meeting, Washington, D. C.
- Xue, W. and Bowman, F. D. (2012). "A Bayesian Approach to Determining Functional Connectivity in the Human Brain with Incorporation of Structural Connectivity," ENAR Spring Meeting, Washington, D. C.
- Zhang, L., Kang, J., and Bowman, F. D. (2012) "A Bayesian Random Shape Model for fMRI and MRI Data," poster at the ENAR Spring Meeting, Washington, D. C.
- Amzat R, Taleghani P, Savir-Baruch B, Nieh PT, Master VA, Rossi P, Halkar RK, Goodman MM, Bowman FD, Schuster DM (2012). "Extraprostatic recurrent prostate carcinoma detection with synthetic amino acid PET/CT surpasses imaging with <sup>111</sup>Indium-capromab-pendetide plus diagnostic CT," Society for Nuclear Medicine Annual Meeting, Miami, Florida.
- Chen, S. and Bowman, D. (2011). "A Novel Support Vector Classifier for Longitudinal Functional Neuroimaging Data," 17th annual meeting of the Organization for Human Brain Mapping (OHBM), Quebec City, Canada.
- Zhang, L., Agravat, S., Derado, G., Chen, S., and Bowman, D. (2011). "BSMac: A MATLAB toolbox Implementing a Bayesian Spatial Model for Brain Activation and Connectivity," 17th annual meeting of the Organization for Human Brain Mapping (OHBM), Quebec City, Canada.
- Chen, S. and **Bowman, D.** (2010). "A Bayesian Hierarchical Framework for Modeling of Resting-state fMRI Data," ENAR Spring Meeting, New Orleans, LA.
- Derado, G., **Bowman, D.**, Guo, Y., and Kilts, C. (2010). "Predicting Post-baseline Brain Activity using a Bayesian Spatial Hierarchical Model," ENAR Spring Meeting, New Orleans, LA.
- Schuster DM, Savir-Baruch B, Nieh PT, Master V, Halkar RK, Rossi P, Lewis M, **Bowman FD**, Yu W, Goodman MM (2010). Report of a clinical trial of anti-1-amino-3-[18F]fluorocyclobutane-1-carboxylic acid (anti-[18F]FACBC) PET-CT in recurrent



prostate cancer. 2010 Society for Nuclear Medicine Annual Meeting, Salt Lake City, Utah.

- Chen, S., Derado, G., Guo, Y., Mayberg, H., and **Bowman, D.** (2009). "Classification Methods for Identifying the Neural Characteristics of Antidepressant Treatment," Invited oral presentation at the Organization for Human Brain Mapping, 15<sup>th</sup> Annual Meeting, San Francisco, CA. Published *NeuroImage*, v. 47, p. S71.
- Chen, S., Derado, G., Guo, Y., Mayberg, H., and **Bowman, D.** (2009). "Classification Methods for Identifying the Neural Characteristics of Antidepressant Treatment," Poster presentation at the Organization for Human Brain Mapping, 15<sup>th</sup> Annual Meeting, San Francisco, CA. Published *NeuroImage*, v. 47, p. S71.
- Chen, S., **Bowman, D.**, and Derado, G. (2009). "Connectivity Analysis Based on fMRI and DTI Brain Imaging Data," ENAR Spring Meeting, San Antonio, TX.
- Derado, G. and **Bowman, D.** (2009). "Modeling the Spatial and Temporal Dependence in fMRI Data," ENAR Spring Meeting, San Antonio, TX.
- Schuster, D. M., Savir-Baruch, B., Nieh, P. T., Votaw, J. R., Nye, J. A., Master, V., Halkar, R. K., **Bowman, F. D.**, Goodman, M. M. (2009). Initial report of a clinical trial of anti-1 amino 3 [18F]fluorocyclobutane-1-carboxylic acid (anti-[18F]FACBC) PET-CT in recurrent prostate cancer. 2009 Society for Nuclear Medicine Annual Meeting, Toronto, Canada.
- Caffo, B., **Bowman, F. D.**, Bassett, S., and Kilts, C. (2008). "A Bayesian Hierarchical Framework for Spatial Modeling of fMRI Data," Organization for Human Brain Mapping, 14<sup>th</sup> Annual Meeting, Melbourne, Australia. Published *NeuroImage*, v. 41, p. S17.
- Derado, G., Lee, K., Nicolis, O., **Bowman, F. D.**, Newell, M., Rugger, F. F., Vidakovic, B. (2008). "Wavelet-based 3-D Multifractal Spectrum with Applications in Breast MRI Images," 4<sup>th</sup> International Symposium on Bioinformatics Research and Applications, Atlanta, GA.
- Nye, J., Tudorascu, D., **Bowman, F. D.**, Santana, C., Faber, T., Votaw, J. (2007). A post-imaging method for correcting heart drift in PET/CT cardiac imaging. *Journal of Nuclear Medicine* 48(S2):50P-c.
- Guo, Y., Pagnoni, G., **Bowman, F. D.** (2007). "Comparison of Methods of Group Independent Component Analysis for Multisubject fMRI Data," Organization for Human Brain Mapping, 13<sup>th</sup> Annual Meeting, Chicago, IL. Published *NeuroImage* v. 36, p. 124.
- Derado, G., Nair, H. P., **Bowman, F. D.**, Drexler, K., Kilts, K. (2007). "Functional Activity Differences in Brain Regions Related to Emotional Regulation in Recovered Cocaine Addicts," Organization for Human Brain Mapping, 13<sup>th</sup> Annual Meeting, Chicago, IL. Published *NeuroImage* v. 36, p. 99.
- Derado, G., **Bowman, D.**, Patel, R., Newell, M., and Vidakovic, B. (2007). Wavelet Image Interpolation (WII): A Wavelet-based Approach to Enhancement of Digital Mammography Images. International Symposium on Bioinformatics Research and Applications, Atlanta,

GA.

- Derado, G. and **Bowman, D.** (2007). "Modeling the spatial and temporal dependence in fMRI data: An application to an inhibitory control study of cocaine addicts," ENAR Spring Meeting, Atlanta, GA.
- Clay, L. and **Bowman, D.** (2007). Examining the Effects of Ethanol on Neural Processing in the Human Brain. The NIMH Career Opportunities in Research (COR) Annual Colloquium, Albuquerque, New Mexico.
- Patel, R., **Bowman, D.**, Guo, Y., and Derado, G. (2006). "Interpreting Experience-Based Cognition from fMRI: The Brain Activity Interpretation Competition," Joint Statistical Meetings, Seattle, WA.
- Harenski, K., Alford, A., Gross, R., Ely, T., Drexler, K., **Bowman, D.**, Kilts, C. (2006). "Effects of cocaine addiction and treatment-related cocaine abstinence on the neural representation of the inhibitory control of behavior," Organization for Human Brain Mapping, 12<sup>th</sup> Annual Meeting, Florence, Italy.
- Patel, R. S., Van DeVille, D., **Bowman, F. D.** (2006). "Determining Significant Connectivity by 4D Spatiotemporal Wavelet Packet Resampling of Functional Neuroimaging Data." Organization for Human Brain Mapping, 12<sup>th</sup> Annual Meeting, Florence, Italy.
- Guo, Y. and **Bowman, D.** (2006). "Prediction of post-treatment brain activity using a Bayesian Hierarchical Model," ENAR Spring Meeting, Tampa, FL.
- Ely, T., **Bowman, D.**, Gross, R., Kilts, C. (2005). "The nonlinear neural representation of executive cognition in schizophrenia and dissociation of the effects of antipsychotic medications," Organization for Human Brain Mapping, 11<sup>th</sup> Annual Meeting, Toronto, Ontario.
- Patel, R. and **Bowman, D.** (2005). "A Bayesian Approach to Determining Connectivity of the Human Brain," invited talk in Topic Contributed Session, Joint Statistical Meetings, Minneapolis, MN.
- Patel, R. and **Bowman, D.** (2005). "A Bayesian Approach to Determining Connectivity of the Human Brain," ENAR Spring Meeting, Austin, TX.
- Patel, R., **Bowman, D.**, and Rilling, J. K. (2005). "A Bayesian Approach to Determining Connectivity of the Human Brain," Functional Imaging Analysis Contest (FIAC), Organization for Human Brain Mapping, 11<sup>th</sup> Annual Meeting, Toronto, Ontario.
- Kilts, C., Ely, T., Gross, R., **Bowman, D.**, Nemeroff, C., Jarboe, K., Temple, L., Lewine, R. (2004). "The Neural Representations of Cognitive Deficits Associated with Schizophrenia." Janssen Pharmaceutica.
- Robertson, D., Snarey, J., Ousley, O., Harenski, K., **Bowman, D.**, Gilkey, R., Kilts, C. (2004).

“The Neural Basis of Moral Sensitivity.” Paper presented to the Third Transatlantic Business Ethics Conference, Barcelona, Spain.

Page, S. T., Amory J. K., **Bowman, F. D.**, Anawalt, B. D., Matsumoto, A. M., Bremner, W. J., Tenover, J. L. (2004). “Exogenous Testosterone or Testosterone with Finasteride Increases Physical Performance, Grip Strength, and Lean Body Mass in Older Men with Low Serum Testosterone.” International Congress of Endocrinology, Lisbon, Portugal. Abstract published in Journal of Investigative Medicine 53(1), S97-S97, Jan. 2005

Patel, R. and **Bowman, F. D.** (2004). “Exploring Spatial Relationships in PET Neuroimaging Data,” ENAR Spring Meeting, Pittsburgh, PA.

Ely, T. D., Gross, R. E., Temple, L., **Bowman, D.**, Kilts, C. (2003). “Comparative effects of risperidone and olanzapine pharmacotherapy on prefrontal cortical activations related to the cognitive mediation of behavior,” American College of Neuropsychopharmacology Annual Meeting, San Juan, Puerto Rico.

Lyles, R.H., Manatunga, A.K., Moore, R.H., **Bowman, F.D.** (2003). “Improving Point Predictions of Random Effects for Subjects at High Risk: A Case Study”, Joint Statistical Meetings of ASA and Biometric Society, San Francisco, CA.

Harenski, K., Robertson, D., **Bowman, D.**, Snarey, J., Ousley, O., Gilkey, R., and Kilts, C. (2003). “The Neural Basis of Moral Intuition and Moral Reasoning.” Organization for Human Brain Mapping, 9<sup>th</sup> Annual Meeting, New York, NY.

Robertson, D., Snarey, J., Ousley, O., Harenski, K., **Bowman, D.**, Gilkey, R., Kilts, C. (2003). “The Neural Basis of Thinking Morally.” Cognitive Neuroscience Society Annual Meeting, New York, NY.

Ely, T., Gross, R., **Bowman, D.**, Kilts, C. (2002). “Neural correlates of the effects of schizophrenia and atypical antipsychotic drug administration on working memory.” Organization for Human Brain Mapping, 8<sup>th</sup> Annual Meeting, Sendai, Japan.

## Teaching Activities

### Courses

BIOS 707, Advanced Linear Models

Emory University    Spring 2012  
                                  Spring 2011  
                                  Spring 2010  
                                  Spring 2009  
                                  Spring 2008  
                                  Spring 2007  
                                  Spring 2006  
                                  Spring 2004

**F. DuBois Bowman, Ph.D.**

BIOS 760R(560R), Adv. Topics in Neuroimaging Statistics	Emory University	Spring 2010 Spring 2005
BIOS 797R, Directed Study	Emory University	Spring 2009 Spring 2009 Spring 2007
BIOS 707, Theory of Linear Models	Emory University	Fall 2002 Fall 2001 Fall 2000
BIOS 790R(590R), Advanced Seminar in Biostatistics	Emory University	Fall 2000

**Guest Lectures**

IBS 538, Design and Analysis of Experiments	Emory University	Spring 2007 Spring 2008
BIOS 780, Advanced PhD Seminar	Emory University	Spring 2000- Spring 2010

**Other Teaching Activities**

Invited Instructor, Statistical Analysis and Applied Mathematics Institute (SAMSI) Neuroimaging Data Analysis Workshop, 2013, Research Triangle Park, NC. Topic: Statistical Methods for fMRI Analysis.

Invited speaker at 15th annual OHBM Meeting, "Bayesian vs. Frequentist Statistical Methods in Neuroimaging Applications," symposium entitled *To Be Bayesian or Frequentist or Not: A Debate on Functional Imaging Analyses*, San Francisco, CA, June 2009. Published *NeuroImage*, v. 47, pp. S7.

ENAR 2009 Short Course Instructor. Statistical Modeling and Analysis of Brain Imaging Data, by F. D. Bowman and Y. Guo. San Antonio, TX.

Invited Speaker at the Institute for Pure and Applied Mathematics (IPAM) Program entitled "Mathematics in Brain Imaging," University of California at Los Angeles (UCLA), July 2008.

Invited Speaker at the 14th annual OHBM Meeting, "Bayesian Analysis for fMRI Data," Advanced fMRI Course, Melbourne, Australia, June 2008.

Developed the Neuroimaging Biostatistical Research Group (NBRG) as a central unit to conduct research on statistical methodology for functional neuroimaging data and to engage in collaborative functional neuroimaging research projects, Department of Biostatistics, Emory University, 2005-2007.

Organized a neuroimaging statistics reading group to discuss current research articles and related topics in bi-weekly meetings, Department of Biostatistics, Emory University, 2004.

Co-organizer of a summer workshop in Biostatistics for students interested in biomedical sciences, Department of Biostatistics, Emory University, 2003.

Developed a biostatistics short-course, directed research activities for an undergraduate student in the Ronald E. McNair Scholars Undergraduate Research Program (in conjunction with Morehouse College), 2002.

### **Research Advising/Mentoring**

#### **Junior Faculty:**

Jian Kang, PhD, Assistant Professor of Biostatistics and Bioinformatics, Emory University.

Ying Guo, PhD, Assistant Professor of Biostatistics and Bioinformatics, Emory University.

Sean Simpson, PhD, Assistant Professor, Department of Biostatistical Sciences, Wake Forest University School of Medicine. Member of mentoring team for an NIH-K01 grant and a Wake Forest intramural career development award in imaging.

Loni Philip Tabb, PhD, Assistant Professor, Department of Epidemiology and Biostatistics, School of Public Health, Drexel University. Mentor for Drexel University intramural career development award.

#### **Postdoctoral Students:**

Lijun Zhang, PhD in Computer Science, University of Louisville. CBIS applications developer and data analyst.

Alexandre Franco (2009-2011), PhD in Electrical Engineering, University of New Mexico. Neuroscience Initiative Postdoctoral Fellowship, Psychiatry (Mayberg), Biostatistics and Bioinformatics (Bowman), and Biomedical Engineering (Hu) at Emory University.

Otis Smart, PhD, Postdoctoral Fellow, Department of Neurosurgery, Emory University School of Medicine Minority Postdoctoral Council (MPC), Minority Mentoring Program (MMP), 2012-present.

#### **Doctoral Students:**

**Anthony Pileggi** (2010-present), Topic: Statistical methods for determining brain connectivity. **Dissertation co-advisor** (with Brent Johnson).

**Phebe Brenne** (2011-present), Topic: Methods for Brain Network Analyses Using fMRI and DTI Data. **Dissertation co-advisor** (with Ying Guo).

**Wenqiong Xue** (2010-present), Topic: Statistical methods for determining brain connectivity. **Dissertation advisor**.

Callie McGrath (2010-present), Graduate Student in the Neuroscience Program, Graduate Division of Biological and Biomedical Sciences, Emory University. Dissertation committee member.

**Shuo Chen** (2012), Topic: "New Statistical Techniques for High-dimensional Neuroimaging Data," **Dissertation advisor.**

- \*David P. Byar Young Investigator Award winner, 2012, Biometrics Section of ASA
- \*Student Paper Competition Winner, 2011, Section on Statistical Learning and Data Mining (SLDM) of the American Statistical Association and Statistical Analysis and Data Mining (SAM), Joint Statistical Meetings (Miami, Florida)

Anna Jolly Blackstock (2011). "Techniques for Pattern Recognition in High-Throughput Metabolomic Data," Dissertation committee member.

Ashley Kennedy (2011), Ph.D. in Molecular & Systems Pharmacology, Graduate Division of Biological and Biomedical Sciences, Emory University. Dissertation committee member.

**Gordana Derado** (2010), "Methods for Addressing Spatial Correlations in Functional Neuroimaging Data," **Dissertation advisor.**

- \*John Van Ryzin Award for the **best paper** in the 2009 ENAR Distinguished Student Paper Award Competition, "Modeling the spatial and temporal dependence in fMRI data," San Antonio, TX.

Yuemei Wang (2007), "Statistical Performance of Spatial System," Dissertation committee member.

Sara Crawford (2007), "Detecting Multiple Sources of Informative Dropout in Clustered Longitudinal Data," Dissertation committee member.

**Rajan Patel** (2006), "Assessing group changes in functional connectivity of the human brain," **Dissertation advisor.**

Renee H. Moore (2006), "Improving Point Estimation for Subjects at High Risk," Dissertation committee member.

Eric Tassone (2006), "Small Area Estimation of Local Health Disparity via Hierarchical Models," Dissertation committee member.

DeMarc Hickson (2005), "Assessing the Improvement of Model Fit and Interpretation in a Multilevel (Hierarchical) Analysis of the Human Immunodeficiency Virus and High Risk Sexual Behavior," Dissertation committee member.

Feng Gao (2002), "Tree-structured methods for multivariate survival data," Dissertation committee member.

**Master's Degree Students:**

Denise Bradford (2011-present), Mentor, 2011 Cavell Brownie JSM Mentoring Program, M. S. Program in Applied Statistics, Purdue University, West Lafayette, IN.

Julia Cleveland (2008), Thesis advisor, "The effect of repeated measures covariance structures on the analysis of a pilot gendered racism scale."

Tahera Darensburg (2008), Thesis committee member, "PRISE STUDY: A missing data problem".

Rahimah Muhammad (2004), Thesis advisor, "A comparison of missing data methods for evaluating a drug treatment for depression." Charles Shepard Award finalist for the best thesis in the Rollins School of Public Health.

**Research Assistants (unrelated to dissertation or thesis):**

Shuo Chen (2008), Topic: Statistical methods for fMRI analyses.

Tahera Darensburg (2006), Topic: A comparative analysis of stage-II fMRI analysis approaches with a focus on the correlation between stage-II effects.

Gordana Derado (2005-2012), Topic: Improving evaluations of digital mammography micro-calcifications using wavelet interpolation.

Chenxing Lu (2003), Topic: Task-related functional classifications of neuroimaging data.

**Post-baccalaureate Students:**

Caprichia Jeffers (2011-2012), Emory University Post-baccalaureate Research Education Program (PREP).

**Undergraduate Students:**

Dotiana Dawson (2012-present), Spelman College, NIMH-COR Program, Topic: TBD.

Candace Shaw (2010-2012), Spelman College, NIMH-COR Program, Topic: Functional connectivity in schizophrenia patients.

Asya Jones (2009-2011), Spelman College, NIMH-COR Program, Topic: fMRI-based neural markers of major depression.

Latoya Clay (2006-2008), Clark Atlanta University, NIMH-COR Program, Topic: Examining the effects of ethanol administration on distributed patterns of brain activity.

Roderick Stewart (2002), Morehouse College, Ronald E. McNair Scholars Undergraduate Research Program.

## Professional and Academic Service

### Articles and Essays

**Bowman, D.** (2007). A Perspective on Seeking Tenure at Emory. Year of the Faculty Report, Office of the Provost, Emory University.

**Bowman, D.,** Bush, A., Cowart, D., Price, D., Redmond, C., Ryan, L., Stone-Chestnut, J., and Young, B. (2001). Some Advice for Advisors. *Stats* #30: 8-10.

### Educational Presentations

Bowman, F. D. (2013), Invited *Grant Writing Panelist* at the ENAR Workshop for Junior Researchers, Orlando, FL.

Bowman, F. D. (2012), "Biostatistics and Brain Imaging," Atlanta University Center NIMH-COR, Emory University, Atlanta, GA.

Bowman, F. D. (2011), "Biostatistics and Brain Imaging," Atlanta University Center NIMH-COR, Emory University, Atlanta, GA.

Bowman, F. D. (2010), "Biostatistics and Brain Imaging," Summer Institute for Training in Biostatistics (SIBS), Emory University, Atlanta, GA.

Bowman, F. D. (2010), "Biostatistics and Brain Imaging," Atlanta University Center NIMH-COR, Emory University, Atlanta, GA.

Bowman, F. D. (2009), Invited *Grant Writing Panelist* at the ENAR Workshop for Junior Researchers, San Antonio, TX.

Bowman, F. D. (2008), Invited panelist at *Shared Success and Struggle Conference* of mathematicians from Morehouse College, sponsored by the National Security Agency (NSA) and Morehouse College, Atlanta, GA.

Bowman, F. D. (2007), "Academic Careers in Biostatistics," Project Imhotep, Morehouse College and Centers for Disease Control and Prevention, Atlanta, GA.

Bowman, F. D. (2007), "Graduate Programs in Statistics," STATFest: A Conference for Undergraduates, sponsored by Eli Lilly and the American Statistical Association, April 2007, Indianapolis, IN.

Bowman, F. D. (2007). "Academic Careers in Biostatistics," Public Health Sciences Institute,



Morehouse College, Atlanta, GA.

Bowman, F. D. and Patel, R. (2006). "Methods for Determining Connectivity of the Human Brain," Biostatistics in Genetics, Immunology, and Neuroimaging (BGIN) Training Grant Research Workshop, Department of Biostatistics, Emory University.

Bowman, F. D., "Neuroimaging Statistics," NIMH-COR, Atlanta University Center, May 2006, Atlanta, GA.

Bowman, F. D., "Careers in Biostatistics," invited panelist at Eastern North American Region (ENAR) Spring Meeting, Fostering Diversity in Biostatistics Workshop, March 2006, Tampa, FL.

Bowman, F. D., Colloquium at the National meeting for Career Opportunities in Research (COR) program (sponsored by NIMH), Life After COR session, November 2005, Atlanta, GA.

Bowman, F. D., "Careers in Biostatistics," invited panelist at Infinite Possibilities Conference, Spelman College, April 2005, Atlanta, GA.

Bowman, F. D., "Neuroimaging Statistics," NIMH-COR, Atlanta University Center, Morehouse College, January 2004, Atlanta, GA.

Bowman, F. D., "Overview of Biostatistics and Biometry," invited speaker at Eastern North American Region (ENAR) Spring Meeting, Fostering Diversity in Biostatistics Workshop, March 2002, Washington, D.C.

Bowman, F. D., "Preparing Yourself for Meaningful Contributions in Public Health," invited speaker at The 129<sup>th</sup> Annual Meeting of American Public Health Association, October 2001, Atlanta, GA.

Bowman, F. D., "Using Statistics to Examine Human Brain Function," *Statistics in Academia* section of Mini STATFest: A Conference for Undergraduates, Hosted by Department of Mathematics, Spelman College, sponsored by American Statistical Association, Centers for Disease Control and Prevention, and Spelman College, November 2001, Atlanta, GA. Coordinators: Drs. Gladys Reynolds and Nagambal Shah.

### **Professional Activities, Committees, and Memberships**

President-elect, ENAR, International Biometric Society.

Chair, American Statistical Association (ASA) Committee on Award of an Outstanding Statistical Application, appointed by ASA President-elect (Marie Davidian), 2013.

Founding member of the Section on Statistics in Imaging, ASA, 2012.

Treasurer for Section on Statistics in Imaging, ASA, 2012-2013.

Organizing Committee, ENAR Workshop for Junior Researchers, (i) 2013-2014, (ii) 2009-2011, and (iii) 2003-2004

Organizing Committee, Statistical Analysis and Applied Mathematics Institute (SAMSI) Neuroimaging Data Analysis Workshop, 2013, Research Triangle Park, NC.

Mentor, 2011 Cavell Brownie JSM Conference Mentoring Program, Miami, FL.

Member, ASA Committee on Award of an Outstanding Statistical Application, appointed by ASA President-elect (Nancy L. Geller), 2011-2013.

Program Committee, ENAR 2011

ASA Byar Young Investigator Award Committee, 2007, Biometrics Section of ASA

ENAR Diversity Committee (founding member), 2001-2009

Member, ASA Committee on Minorities in Statistics, 2005-

Member of American Statistical Association, 1993-present

Member of International Biometric Society, 2000-present

Member of the Organization for Human Brain Mapping, 2004-present

**Conference Activities** (Excluding Activities Previously Listed)

Joint Statistical Meetings (JSM) 2009, Organizing committee for the Pre-JSM Diversity in Statistics Workshop, Washington, D. C.

Organization for Human Brain Mapping (OHBM) 2008, 14<sup>th</sup> Annual Meeting of the OHBM, Chair of the Invited Modeling and Analysis Session entitled "Advances in Bayesian & Classical Statistics," Melbourne, Australia.

The 14<sup>th</sup> Annual Meeting of the OHBM, Conference Delegate, Melbourne, Australia.

ENAR 2008 Spring Meeting, Co-organizer for the ENAR Fostering Diversity in Biostatistics workshop (co-organizer: Scarlett Bellamy), Crystal City, VA.

ENAR 2007 Spring Meeting, Organizer for an invited session (co-organizer: Thomas Nichols) entitled "Functional and Structural Neuro-imaging Data: Modeling and Inference;" session sponsored by the Institute of Mathematical Statistics (IMS), Atlanta, GA.

ENAR 2007 Spring Meeting, Co-organizer for the ENAR Fostering Diversity in Biostatistics workshop (co-organizer: Scarlett Bellamy), Atlanta, GA.

ENAR 2003 Spring Meeting, Chair of the Contributed Papers Session entitled "Semi- and Nonparametric Methods for Longitudinal Data." Tampa, FL.

ENAR 2004 Spring Meeting, Chair of the Contributed Papers Session entitled "Analysis of Imaging Data." Pittsburgh, PA.

### **Academic Committees and Activities**

#### **National (not listed above):**

External Tenure, Appointments, and Promotions reviewer: Georgia Institute of Technology, 2008; Johns Hopkins, 2012.

#### **Emory University:**

Emory University Honorary Degrees Committee, 2012-2015

Culture Transformation Group member, Woodruff Health Sciences Center of Emory University. Chair: Dennis Choi, Executive Director of Emory University's Comprehensive Neuroscience Initiative, 2009-2010.

Computational and Life Sciences Initiative, Faculty Search Committee, 2009-2010.

Chief Information Technologist for Emory University Libraries, Search Committee, 2007-2008.

Woodruff Leadership Academy, 2007 Fellow, Woodruff Health Sciences Center.

Computational and Life Sciences Initiative, Education Committee, 2007-2009.

Vice-President for Information Technology and Chief Information Officer, Search Advisory Committee, 2005.

Opportunity Committee Meeting for Emory University strategic planning, 2004, Woodruff Health Sciences Center of Emory University. Coordinator: Dr. James Wagner, Emory University President. Session Chair: Dr. James Curran, Dean of the Rollins School of Public Health.

Invited Scientists Meeting with NIH Director Dr. Elias Zerhouni, 2003. Coordinator: Dr. Michael Johns, Executive Vice President for Health Affairs.

Clinical and Population-Based Research Focus Group, 2001, Woodruff Health Sciences Center of Emory University. Coordinators: Dr. Michael Johns, Executive Vice President for Health Affairs, and Dr. William Bornstein, Medical Director of Information Systems for Emory Healthcare.

#### **Rollins School of Public Health (RSPH):**

RSPH Research Advisory Committee, 2010-present.

Search Committee for the Rollins Professor and Chair of the Department of Epidemiology at the RSPH, 2008-2009.

Search Committee for the Rollins Professor and Chair of the Department of Biostatistics and Bioinformatics at the RSPH, 2008-2009.

Search Advisory Committee for the RSPH Director of Information Services, 2007.

RSPH Research Advisory Committee, 2004-2006.

Dr. Martin Luther King Junior Community Service Awards Program Planning Committee (2000-2007), Rollins School of Public Health, Goizueta Business School, and Nell Hodgson Woodruff School of Nursing.

RSPH Honor Code Hearing Committee, 2005.

Chair of the James Alley Award Committee, 2004-2005. The committee grants an award to a graduating RSPH student who has provided exemplary service to disadvantaged populations during his or her career.

Search Committee for the Rollins Professor and Chair of the Department of Biostatistics, 2002-2004.

**Department of Biostatistics and Bioinformatics:**

Search Committee Chair culminating in 3 tenure-track faculty hires in the Department of Biostatistics and Bioinformatics at the RSPH, 2010-2011.

Tenured and Tenure Track Faculty Search Committee, 2009-2010.

Student Recruitment, Chair 2009-present

Bioinformatics Working Group, Departmental Strategic Plan, 2007-2008

Curriculum Committee, *Chair*, 2005-2007

Computer Advisory Committee, *Co-chair*, 2007-2008

Space Committee, 2006-present

Masters Curriculum Revision Committee, 2006

Diversity Committee, *Chair* 2002-2006, *Chair* 2009-present, member 2000-2002

Curriculum Committee, 2000-2005

Computing Committee, 2006

Strategic Planning Committee, 2004

Ph.D. Theory Curriculum Review Committee, 2002

**School of Medicine:**

Radiology, Quantitative Imaging Task Force, 2011-2012

PET Center Operations Committee, 2000-2001

PET Center Research Committee, 2000-2001