Full Curriculum Vitae
Date: October 8, 2011
Page: 25 pages

Personal

Name:	Hongtu Zhu
Date of Birth:	March 18, 1973
Citizen:	USA
Marital Status:	Married
Children:	Two daughters
Lab Website:	http://www.bios.unc.edu/research/bias

Education

Postdoctoral training	2003	Yale University, USA
Postdoctoral training	2001	Pacific Institute for Mathematical Science, Canada
Ph.D in Statistics	2000	The Chinese University of Hong Kong.
M.Sc in Statistics	1996	Southeast University, P.R. China.

Professional Experience

University of North Carolina at Chapel Hill	August 2011-	Professor
University of North Carolina at Chapel Hill	August 2006-July 2011	Associate Professor
New York State Psychiatric Institute	April 2004-July 2006	Research Scientist IV
Columbia University	July 2003-July 2006	Assistant Professor

Honors

Fellow,	American Statistical Association,	2011
Fellow,	Institute of Mathematical Statistics,	2011

Travel award from NSF/IMS/ENAR 2006/2005/2004.
Industrial Postdoctoral Fellowship 2000 Pacific Institute for the Mathematical Science, Canada.
Outstanding Graduate Scholarship 1998 The Chinese University of Hong Kong.
Outstanding Dissertation Award 1996 Southeast University
Pei Jing-Pei Ying Scholarship 1994 Southeast University

Memberships

American Statistical Association

International Biometric Society
Institute of Mathematical Statistics
International Society for Bayesian Analysis
International Chinese Statistical Association

Department/University Service

Columbia University

2004-2006 Research/Postdoctoral Fellow Training Committee at Columbia University

University of North Carolina at Chapel Hill

2006-2007 Doctor Examination Committees I and II, Graduate Studies Committee
2007-2008 Doctor Examination Committees I and II, Seminar Committee
2008-2009 Doctor Examination Committees I and II, Seminar Committee
2009-2011 Doctor Examination Committees I and II, Graduate Studies Committee

2011-2014 Research Council/Conflict of Interest Committee for School of Public Health

Professional Service

Grants Review:
National Science Foundation, 2007, 2009, 2010, 2011
NIH Challenge grants, 2009.
NIH Neurological, Aging and Musculoskeletal Epidemiology Study Section, 2009, 2010.
NIH ZRG1 BST-N(90), 2011.
National Sciences and Engineering Research Council of Canada, 2010, 2011.
Chile Foudecyt National Research Funding Competition 2010

Associate Editor:

2009-2011	Biometrics,
2007-	Statistics and its Interface,
2011-	Neurosurgery
2011-	Statistica Sinica

Guest Editor for a special issue on NeuoroImaging analysis in *Statistics and its Interface*

Student Award Committee: ICSA 2006 Applied Statistics Symposium.

ICSA Board of Directors 2012-2014

Reviewer Committee:
International Conference on Medical Imaging Computing and
Computer Assisted Intervention (MICCAI) 2008, 2009, 2010, 2011
2011, 2010 IEEE International Symposium on Biomedical Imaging
Neural Information Processing Systems (NIPS) Conference 2010

Advisory Committee:
Society of Imaging Neuroscience Statisticians.
Section on Statistics in Imaging in ASA

One of eight founding members of Section on Statistics in Imaging in ASA

Acting Chair 2012-2013 of Section on Statistics in Imaging in ASA

Program Committee:
International Conference on Image and Signal Processing (ICSP) 2009, 2011.
The third IMS-China Conference 2011
Machine Learning in Medical Imaging (MLMI) 2011

Planning Committee:
ENAR 2010

ENAR Education advisory committee: ENAR 2011.
ENAR Student Award Committee: 2010-2012.

Conference Organizer:

JSM 2012, Invited Section Organizer, August 2012.
JSM 2011, Roundtable, August 2011.
2rd IMS Pacific Rim, Invited Section Organizer, July 2012.
2rd IMS China, distinguished lecture sessions organizer, July 2011
ENAR 2011, Roundtable, March 2011.
ENAR 2011, Invited Section Organizer, March 2011.
ENAR 2010, Invited Section Organizer, March 2010.
ENAR 2009, Invited Section Organizer, March 2009.
ICSA 2007, Raleigh, NC, Invited Section Organizer, July 2007.
ENAR 2005, Invited Section Organizer, March 2005.

Frequently review papers for the following journals:

Ecology, Medical Physics, NeuroImage, Technometrics,
Computational Intelligence and Neuroscience,
Neuroinformatics, Psychometrika, Human Brain Mapping,

IEEE Transactions on Medical Imaging, Annals of Statistics,
American Statistician, Test, Journal of Applied Statistics,
Australian and New Zealand Journal of Statistics,
Biometrics, Biostatistics, Annals of Applied Statistics
British Journal of Mathematical Psychology and Statistics,
Canadian Journal of Statistics, Communication in Statistics,
Computational Statistics and Data Analysis,
International Journal of Biostatistics, Computational Statistics,
Journal of American Statistical Association,
Journal of Computational and Graphical Statistics,
Journal of Multivariate Analysis. Journal of Social and Clinical Psychology,
Journal of Statistical Computation and Simulation,
Journal of Statistical Planning and Inference,
Scandinavian Journal of Statistics, Statistical Papers,
Statistica Sinica, Statistics, Statistics and Its Interface,
Statistics in Medicine, Statistical Modeling: An International Journal,
Statistics and Probability Letters, Bayesian Analysis
Journal of Royal Statistical Society, Series C.

Panel of Review: Mathematical Reviews

Software development:

FADTTS available at http://www.nitrc.org/projects/fadtts/
FRATS available at http://www.nitrc.org/projects/frats/
All other tools are available at
http://www.bios.unc.edu/research/bias/software.html

Bibliography

Peer-reviewed Books and Chapters

1. Zhu HT, Joseph G. Ibrahim, Hyunsoon Cho, and Niansheng Tang (2010). Bayesian Influence Methods. In *Frontiers of Statistical Decision Making and Bayesian Analysis* (eds. M.-H., Chen, D.K. Dey, P. M\"{u}ller, D. Sun, and K. Ye). New York: Springer. pp.219-236.
2. Bansal, R., …., Zhu HT (in alphabetic order). Neuroimaging methods in the study of childhood psychiatric disorders. *Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, Fourth Edition,* Edited by Melvin Lewis, 30 pages, Philadelphia, Lippincott Williams & Wilkins, pp. 214-233, 2007.
3. Zhu HT, Liang FM, Gu MG, and Peterson B. Stochastic approximation algorithms for estimation of spatial mixed models. Edited by Sik-Yum, Lee. *Handbook of Computing and Statistics with Application,* Elsevier Science, pp. 399-421, 2007.

4. Zhu HT and Zhang HP. Structure mixture regression models. In *Development of Modern Statistics and Related Topics*, H.P.Zhang and J.Huang (ed.), World Scientific Publisher, New Jersey, pp. 272-287, 2003.
5. Wei BC, Wang F, and Zhu HT. Translate *Bates, D. and Watts, D. (1988). Nonlinear Regression Analysis and its Applications. John Wiley and Sons, Inc., New York*, into Chinese version. Statistics Publisher, Beijing, P.R.China, pp.1-409, 1998.

Refereed papers/articles (Students and post-doctors are highlighted in red) (Zhu serving as the corresponding author is highlighted in blue*).**

Peer-reviewed Papers In Press and Appeared in Journals

Statistical Journals

6. **Li, YM,** ***Zhu HT***, Shen DG, Lin WL, Gilmore J, and Ibrahim JG. Multiscale adaptive regression models for neuroimaging data. *JRSS, Series B*, 73, 559-578, 2011.
7. **Shi, XY**, ***Zhu, HT***, Ibrahim JG, F. Liang, Styner M. Intrinsic regression models for median representation of subcortical structures. *Journal of American Statistical Association,* in press, 2011.
8. **Guo, RX.,** Zhu, HT., Chow, SM., Ibrahim, JG. Bayesian Lasso for semiparametric structural equation models using spline. *Biometrics,* 2011.
9. **Yuan, Y.,** ***Zhu, H.T.,*** Lin, W. L., and Marron, J. S. Local polynomial regression for symmetric positive definitive matrices. *JRSS, Series B*, in press.
10. **Wang, J.,** Shen, H. P., and Zhu, H.T. Discussion of "Clustering Random Curves Under Spatial Interdependence with Application to Service Accessibility" by Jiang and Serban. *Techonometrics*, 2012.
11. **Shi, XY**, Ibrahim JG, Styner M., **Yimei Li**, and ***Zhu, HT***., Two-stage adjusted exponential tilted empirical likelihood for neuroimaging data. *Annals of Applied Statistics*, 5, 1132-1158, 2011.
12. Zhu, HT., Ibrahim JG, Tang NS. Bayesian influence approach: a geometric approach. *Biometrika*, 98, 307-323, 2011.
13. Zhu, HT, Ibrahim JG., **Cho HS**, and Tang, N.S. Bayesian case-deletion measures for statistical models with missing Data, *Journal of Computational and Graphical Statistics,* in press, 2011. 20 pages
14. Ibrahim, J. G., Zhu, H.T., **Garcia, R. I., Guo, R.X**. Fixed and random effects selection for generalized mixed effects models, *Biometrics,* 67, 495-503, 2011.
15. Ibrahim, J. G., Zhu, H.T., Tang, N. S. Bayesian local influence for survival models (with discussion). *Lifetime Data Analysis*, 17, 43-70, 2011.
16. **Garcia, R. I.,** Ibrahim, J. G., Zhu, H.T. Variable selection for proportional hazard models with missing covariate data, *Biometrics*, 66, 97–104, 2010.
17. **Clement-Spychala, M. E**., Couper, D., Zhu, H.T., and Muller, K. Approximating the Geisser greenhouse sphericity estimator and its applications to diffusion tensor imaging. *Statistics and Its Interface*, 3,81–90, 2010.

18. **Chen, F,** Zhu HT, Song XY, and Lee SY. Perturbation selection and local influence analysis for generalized linear mixed models. *Journal of Computational and Graphical Statistics,* 19, 826-842, 2010.
19. **Garcia, R. I.,** Ibrahim, J. G., ***Zhu, H.T***. Variable selection for regression models with missing covariate data, *Statistics Sinica,* 20, 149-165, 2010.
20. Zhu HT, Ibrahim, JG., **Shi, X.Y**. Diagnostic measures for generalized linear models with missing covariates. *Scandivian Journal of Statistics,* 36, 686-712, 2009.
21. ***Zhu HT***, Cheng YS., Ibrahim JG, **Li YM**, Hall C, Lin WL. Intrinsic regression models for positive definitive matrices with applications in diffusion tensor images. *Journal of the American Statistical Association,* 104, 1203-1212, 2009.
22. ***Zhu HT,*** **Li YM**, Ibrahim, J. G., **Shi, X.Y**., …, Peterson BS. Rician regression models for magnetic resonance images. *Journal of the American Statistical Association,* 104, 623-637, 2009.
23. **Shi, X Y**., Zhu HT, Ibrahim, JG. Local influence for generalized linear models with missing covariates. *Biometrics,* 65, 1164-1174, 2009.
24. ****Zhu HT,*** Zhou HB, Chen JH, **Li YM**, Styner M, and Liberman J. Adjusted exponential tilted likelihoods with application to brain morphomotry, *Biometrics,* 65, 919-927, 2009.
25. ***Cho HS**, Ibrahim JG, Sinha and Zhu HT. Bayesian Case Influence Diagnostics for Survival Models, *Biometrics,* 65, 116-124, 2009.
26. ****Zhu HT,*** He FL, and Zhou J. Auto-multicategorical regression model for the distributions of vegetation types. *Statistics and Its Interface,* 1, 63-73, 2008.
27. ***Zhu HT,*** Tang NS, Ibrahim JG, and Zhang HP. Diagnostic measures for empirical likelihood of general estimating equations. *Biometrika,* 95, 489-507, 2008.
28. Ibrahim, JG., Zhu HT, Tang NS. Model selection criterion for missing data problems via the EM algorithm. *Journal of the American Statistical Association Theory and Method,* 103, 1648-1658, 2008.
29. ****Zhu HT,*** **Li YM**, Tang NS, Bansal R, Hao XJ, Weissman MM, and Peterson B. Statistical modelling of brain morphometric measures in general pedigree. *Statistica Sinica,* 18, 1554-1569, 2008.
30. ****Zhu HT,*** Gu MG, and Peterson BG. Maximum likelihood from spatial random effects models via the stochastic approximation expectation maximization algorithm. *Statistics and Computing*, 15, 163-177, 2007.
31. ***Zhu HT,*** Zhang HP, Ibrahim JG, and Peterson BG. Statistical analysis of diffusion tensors in diffusion-weighted magnetic resonance image data (with discussion). *Journal of the American Statistical Association*, 102, 1081-1110, 2007.
32. Ibrahim, JG, and Zhu HT. Discussion of "Implementation of estimating function based inference procedures with MCMC samplers" by Tian. L, Liu J., and Wei LJ. *Journal of the American Statistical Association,* 102, 893-896, 2007.
33. Zhu HT, Ibrahim, JG, Lee SY, and Zhang HP. Appropriate perturbation and influence measures in local influence. *Annals of Statistics*, 35, 2565-2588, 2007.
34. Zhu HT and Zhang HP. Generalized score test of homogeneity for mixed effects models**.** *Annals of Statistics*, 34, 1545-1569, 2006.

35. ***Zhu HT*** and Zhang HP. Asymptotics for estimation and testing procedures under loss of identifiability. *Journal of Multivariate Analysis*, 97:19-45, 2006.
36. Zhu HT and Zhang HP. Hypothesis testing in a class of mixture regression models. *Journal of the Royal Statistical Society, Series B,* 66:3-16, 2004.
37. Zhu HT and Zhang HP. A diagnostic procedure based on local influence. *Biometrika*, 91:579-589, 2004.
38. Zhang HP, Yu CY, Zhu HT, and Shi J. Identification of linear directions in multivariate adaptive spline models. *Journal of American Statistical Association*, 98:369-376, 2003.
39. Zhang HP, Fui R, and Zhu HT. A latent variable model of segregation analysis for ordinal outcome. *Journal of American Statistical Association*, 98:1023-1034, 2003.
40. *He FL, Zhou JL, and Zhu HT. Autologistic regression model for the distribution of vegetation. *Journal of Agricultural, Biological and Environmental Statistics*, 8:205-222, 2003.
41. *Zhou JL and Zhu HT. Robust estimation and design procedures for random effect model. *Canadian Journal of Statistics*, 31:99-110, 2003.
42. ***Zhu HT*** and Lee SY. Local influence for generalized linear mixed models. *Canadian Journal of Statistics*, 31:293-309, 2003.
43. *Zhu HT, Yu CY, and Zhang HP. Tree-based disease classification for the protein data. *Proteomics*, 3:1673-1677, 2003.
44. *Zhu HT and Lee SY. Maximizing generalized linear mixed models via a stochastic approximation algorithm with Markov chain Monte Carlo method. *Statistics and Computing*, 12:175-183, 2002.
45. Gu MG and Zhu HT. Maximum likelihood estimation for spatial models by Markov chain Monte Carlo stochastic approximation. *Journal of the Royal Statistical Society*, *Series B,* 63:339-355, 2001.
46. Zhu HT, Lee SY, Wei BC, and Zhou JL. Case-deletion measures for models with incomplete data. *Biometrika*, 88:727-737, 2001.
47. Zhu HT and Lee SY. Local influence for models with incomplete data. *Journal of the Royal Statistical Society,* Series B, 63:111-126, 2001.
48. ***Zhu HT*****.** Relationship between two eigenmatrices of a (real) symmetric matrix-Solution. *Econometric Theory*, 16: 793-794, 2000.
49. *Cheung SH and Zhu HT. Simultaneous one-sided pairwise comparisons in a two-way design. *Biometrical Journal*, 40:613-625, 1998.
50. ***Zhu HT*** and Wei BC. Some notes on preferred point alpha-geometry and alpha-divergence function. *Statistics & Probability Letters*, 33: 427-437, 1997.
51. ***Zhu HT*** and Wei BC. Preferred point alpha-manifold and Amari's alpha connections. *Statistics & Probability Letters*, 36:219-229, 1997.
52. *Wei BC and Zhu HT. Some second order asymptotic in exponential family nonlinear regression models (A geometric approach). *Australian Journal of Statistics*, 39:129-148, 1997.

Neuroinformatics/Medical Imaging Journals
(NeuroImage, IEEE Transactions on Medical Imaging, and Human Brain Mapping are very best neuroimaging and medical imaging journals)

53. ***Zhu, HT.*, Kong, L.**, Li, R., Styner, M., Gerig, G., Lin, W. and Gilmore, J. H. FADTTS: Functional Analysis of Diffusion Tensor Tract Statistics, *NeuroImage,* 56, 1412-1425, 2011.
54. **M.R. Scola**, T.C. Nichols, H Zhu, M.C. Caughey, E.P. Merricks, R.A. Raymer, P. Margaritis, K.A. High, and C. M. Gallippi. ARFI Ultrasound Monitoring of Hemorrhage and Hemostasis *In Vivo* in Canine von Willebrand Disease and Hemophilia. *Ultrasound in Medicine and Biology*, in press, 2011.
55. Wei Gao, John H Gilmore, Kelly S Giovanello, Jeffery Keith Smith, Dinggang Shen, Hongtu Zhu, and Weili Lin, "Temporal and Spatial Evolution of Brain Network Topology during the First Two Years of Life", *PLoS One,* 6(9): e25278. 2011.
56. John H. Gilmore, Feng Shi, Sandra Woolson, Rebecca C. Knickmeyer , Sarah J. Short , Weili Lin, Hongtu Zhu, Robert M. Hamer, Martin Styner, Dinggang Shen. Longitudinal Development of Cortical and Subcortical Gray Matter from Birth to 2 Years. *Cerebral Cortex*, In Press, 2011.
57. Chen, Y.S, An, H.Y., Zhu, HT, Shen, D.G., Gilmore, J.H. and Lin, W. L. Longitudinal regression analysis of spatial-temporal growth patterns of geometrical diffusion measures in early postnatal population with diffusion tensor imaging, *NeuroImage,* 58, 993-1005, 2011.
58. **Skup, M.**, ***Zhu, HT.*, Wang, YP.**, Giovanello, K.S., **Lin, J.A.** Shen, D.G., **Shi, F.**, **Wang, J.P.**, **Gao, W.,** Lin, W., Fan, Y., Zhang, H. and ADNI. Sex Differences in Grey Matter Atrophy Patterns Among AD and aMCI patients: Results from ADNI. *NeuroImage,* 56, 890-906, 2011.
59. Paniagua, B., Cevidanes, L., Walker, D., Zhu, H., Guo, RX., Styner, M. Clinical application of SPHARM-PDM to qualify temporomandibular joint osteoarthritis. *Computerized Medical Imaging and Graphics*, 35, 345-352, 2011.
60. Paniagua, B., Cevidanes, L., Zhu, H.T., Styner, M. Surgical Outcome Quantification using SPHARM-PDM Toolbox in orthognathic surgery. *International Journal of Computer Assisted Radiology and Surgery,* 6, 617-626, 2011.
61. ***Zhu, H.T.*, Styner, M., Tang, N.S., Liu, Z.X., Lin, W.L., Gilmore, J.H.** FRATS: functional regression analysis of DTI tract statistics. *IEEE Transactions on Medical Imaging*, 29, 1039-1049, 2010.
62. **Yap PT**, Wu GR, Zhu HT, Lin W, Shen DG. Fast Tensor Image Morphing for Elastic Registration, *IEEE Transactions on Medical Imaging*, 29, 1192 - 1203, 2010.
63. Cevidanes LHS, Hajati A-K, Paniagua B, Lim, PF, Walker DG, Palconet G, Nackley AG, Ludlow JB, Styner MA, Zhu H, Phillips C. Quantification of Condylar Resorption in TMJ Osteoarthritis. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 110, 110-117, 2010.
64. Grauer, D., Cevidanes, L., Styner, M., Heulfe, I., Harmon, E., Zhu, HT., Proffit, W. R. Accuracy and landmark error calculation using CBCT generated cephalograms, *Angle Orthod, 80* 286-94, 2010.
65. **Gao W,** Zhu HT, Lin WL. DTI imaging parameters optimization using prior information of fiber orientation, *NeuroImage,* 44, 729-741, 2009.

66. **Gao, W.,** Zhu, HT., Giovanello, K. S., Smith, J. K., Shen, D. G., Gilmore, J. H., and Lin, W.L. Emergence of the brain's default network: Evidence from two-week-old to four-year-old healthy pediatric subjects. *Proceedings of the National Academic Sciences, USA,* (PNAS Direct Submission) 106, 6790-6795, 2009.
67. Peterson BS, Warner V, Bansal R, Zhu HT, Hao X, Xu D, Liu J, Weissman MM. Right hemisphere cortical thinning in persons at risk for major depression. *Proceedings of the National Academic Sciences, USA,* (PNAS Direct Submission) 106, 6273-6278, 2009.
68. Posner, J., …, Zhu HT, Peterson BS. The neurophysiological bases of emotion: An fMRI study of the affective circumplex using emotion-denoting words. *Human Brain Mapping*, 30, 883-895, 2009.
69. Yap, P. T., Wu, G.R., Zhu, HT., Lin, W.L., Shen, DG.. TIMER: Tensor Image Morphing for Elastic Registration. *Neuroimage*, 47, 549-563, 2009.
70. Chen, Y.S., An, H. , Zhu, HT., Smith, K., Hall C, Robertson K., Robertson W, Gao, F., Bullit, E., Lin, W. L., Assessing white matter abnormalities in three clinical stages of HIV with diffusion tensor imaging. *Neuroimage,* 47,1154-1162, 2009.
71. **Behler, R. H.,** Scola, MR., Nichols, TC., Caughey, MC., Fisher, M.W., Zhu, H.T., Gallippi, CM. ARFI Ultrasound for in vivo hemostasis assessment postcardic catheterization, Part II: pilot clinical results. *Ultrasonic Imaging*, 31, 159-171, 2009.
72. **Behler, R. H**., Nichols, T.C., Zhu, H.T., Merricks, E. P., Gallippi, C. M. ARFI Imaging for noninvasive material characterization of atherosclerosis part II: toward In vivo characterization. *Ultrasound in Medicine and Biology*, 35, 278-295, 2009.
73. **Yung Y**, ***Zhu HT,*** Ibrahim J, Lin WL, and Peterson B.G.. A note on bootstrapping uncertainty of diffusion tensor parameters, *IEEE Transactions on Medical Imaging, 27,* 1506-1514, 2008.
74. Colibazzi, T., Zhu HT, Bansal, R., and Peterson, B. S. Exploratory and confirmatory factor analysis of cortical and subcortical gray matter volumes in healthy individuals. *Human Brain Mapping, 29,* 1302 - 1312, 2008.
75. **Mauldin, F. W**., Zhu HT, Behler, R. H., and Gallippi, C. M. Robust principal component analysis and clustering methods for automated ARFT segmentation. *Journal of Ultrasound in Medicine and Biology,* 34, 309-325, 2008.
76. Bansal R, Staib LH, Xu DR, Zhu HT, and Peterson B. Statistical analyses of brain surfaces using Gaussian random fields on manifolds. *IEEE Trans Med Imaging*, 26, 46-57, 2007.
77. ***Zhu HT,*** Ibrahim JG, Tang NS, Hao XJ, Bansal R, and Peterson BG. A wild bootstrap method for statistical analysis of brain morphometric measures. *IEEE Trans Med Imaging,* 26, 954-967, 2007.
78. Rachel, M., Zhu, HT., Quackenbush, G., Royal. J., Skudlarski P, and Peterson BG. A developmental fMRI study of self-regulatory control. *Human Brain Mapping*, 27, 848-863, 2006.

79. ***Zhu HT***, Xu DR, Amir R, Hao XJ, Zhang HP, Alayar K, Bansal R, and Peterson BG. A statistical framework for the classification of tensor morphology in diffusion tensor images. *Magnetic Resonance Imaging*, 24, 569-582, 2006.

Quantitative Psychology Journals

80. Chow, SM., Tang, NS, **Yuan, Y**., Song, X.Y., and Zhu HT. Semiparametric nonlinear dynamic latent variable models. *British Journal of Mathematical and Statistical Psychology*, 64, 69–10, 2011.
81. **Chen, F**, Zhu HT, and Lee SY. Perturbation selection and local influence analysis for nonlinear structural equation model. *Psychometrika,* 493-516, 2009.
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83. Zhu HT and Lee SY. Bayesian analysis of finite mixtures in the LISREL model. *Psychometrika*, 66:133-152, 2001.
84. Song XY, Lee SY, and Zhu HT. Model selection in structural equation models with continuous and polytomous data. *Structural Equation Modeling*, 8:378-396, 2001.
85. Lee SY and Zhu HT. Statistical Analysis of nonlinear structural equation models with continuous and polytomous data. *British Journal of Mathematical and Statistical Psychology*, 53:209-232, 2000.
86. Zhu HT and Lee SY. Statistical analysis of nonlinear factor analysis models. *British Journal of Mathematical and Statistical Psychology*, 52:225-242, 1999.

Psychiatry and Neuroscience Journals
(Biological Psychiatry, Archives of General Psychiatry and American Journal of Psychiatry are among the best five journals in psychiatry)

87. Raz, A., Schweizer, H.R., Zhu, H.T., and Bowles, E. N. Hypnotic dreams as a lens into hypnotic dynamics. *International Journal of Clinical and Experimental Hypnosis*, 58, 69-81, 2010.
88. Miller, A., Bansal, R., Hao, X., Sanchez-Pena, J.P., Miller, L.J., Liu, J, Xu, D. R., Zhu, H.T., Chakravarty, M. M., Durkin, K, Ivanov I., Plessen, K.J., Kellendonk,C.B., Peterson, B. S. Enlargement of thalamic nuclei in persons with Tourette Syndrome. *Archives of General Psychiatry,* 67,955-964, 2010.
89. **Yeh PH**, Zhu HT, Nicoletti MA, Hatch JP, Soares JC. Structural equation modeling of gray matter volumes in major depressive and bipolar disorders: differences in latent volumetric structure. *Psychiatric Research: Neuroimaging,* 184, 177-185, 2010.
90. Colibazzi, T., …, Zhu, HT.,…, Peterson, B. Neural systems subserving valence and arousal during the experience of induced emotions. *Emotion*, 10, 377-289, 2010.
91. Iliyan Ivanov, Ravi Bansal, Xuejun Hao, Zhu HT, …, Bradley S. Peterson. Morphological abnormalities of the thalamus in youth with ADHD. *American Journal of Psychiatry,* 167:397-408, 2010.

92. Peterson BS, Potenza, M.N., Wang, Z., Zhu HT, Martin A., Marsh R, Plessen KJ., Yu, S. A functional MRI study of the effects of psychostimulants on default-mode processing during performance of the word-color stroop task in youth with ADHD. *American Journal of Psychiatry*, 166, 1286-1299, 2009.
93. Raz, A., Packard, M.G., Alexander, G. M., Buhle, J.T., Zhu, HT., Yu, S. and Peterson, B. A slice of □: An exploratory neuroimaging study of digit encoding and retrieval in a superior memorist. *Neurocase*, 15, 361-372, 2009.
94. Lewis, M., Smith**,** A., Styner, M., Gu, H., Poole, R., Zhu, H., Li, Y., et al., Huang, X. Asymmetrical lateral ventricular enlargement in Parkinsons disease. *European Journal of Neurology*, 16, 475-481, 2009.
95. Raz A, Zhu HT, …, Peterson BS. Neural substrates of self-regulatory control in children and adults with Tourette Syndrome. *Can J Psychiatry*, 54, 579-588, 2009.
96. Gerber AJ, ..., Zhu HT, Russell J, Peterson BS. An affective circumplex model of neural systems subserving valence, arousal, & cognitive overlay during the appraisal of emotional faces. *Neuropsychologia*, 46, 2129–2139, 2008.
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98. Sowell ER, Peterson BG, Kan E, Woods RP, Yoshii J, Bansal R, Xu DR, Zhu HT, Thompson PM, and Toga AW. Sex differences in cortical thickness mapped in 176 healthy individuals between 7 and 87 years of age. *Cerebral Cortex*, 17, 1550-1560, 2007.
99. Rachel M., Zhu HT, Wang ZS, Skudiarski P., and Peterson, BG. A developmental fMRI study of self-regulatory control in tourette syndrome. *American Journal of Psychiatry*, 164, 955-966, 2007.
100. Raz, A, Moreno-Iñiguez M, Martin L, and Zhu HT. Deautomatizing an automatic process: suggestion and the stroop effect. *Consciousness and Cognition*, 16, 331-338, 2007.
101. Wiedenmayer, C.P., Bansal, R., Anderson, G.M., Zhu, H.T., Amat, J., Whiteman, R, and Peterson, B.G. Cortisol levels and hippocampus volumes in healthy preadolescent children. *Biological Psychiatry*, 60, 856-861, 2006.
102. Gorman D, Zhu HT, Anderson G, Davies M, and Peterson BG. Peripheral iron indices in Tourette's syndrome and their association with basal ganglia and regional cortical volumes. *American Journal of Psychiatry*, 163, 1264-72, 2006.
103. Amat J, Bronen R, Saluja, S., Sato, N., Zhu HT, Gorman, D.A., Royal, J. and Peterson BG. Increased number of subcortical hyperintensities on MRI in children and adolescents with Tourette's syndrome, obsessive-compulsive disorder, and attention deficit hyperactivity disorder. *American Journal of Psychiatry*, 163, 1106-1108, 2006.
104. Kerstin JP, Bansal R, Zhu HT, Whiteman R, Amat J, Quackenbusch G, Martin L, Durkin K, Blair C, Royal J, Hugdahl K, and Peterson BG. Hippocampus and Amydala morphology in attention-deficit/hyperactivity disorder. *Archives of General Psychiatry*, 63, 795-807, 2006.

105. Marsh R, Alexander GM, Packard MG, Zhu HT, and Peterson BG. Perceptual motor skill learning in tourette syndrome. *Neuropsychologia,* 43:1456-65, 2005.
106. Bloch MH, Leckman JF, Zhu HT, and Peterson BG. Caudate volumes in childhood predict the severity of tic and OCD symptoms in adulthood. *Neurology*, 65:1253-1258, 2005.
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Others .

108. R. Villarreal-Calderon, R. Torres-Jardón, J. Palacios-Moreno, N. Osnaya, B. Pérez-Guillé, R. R Maronpot, W. Reed, H. Zhu, L. C. Garcidueñas. Urban air pollution targets the dorsal vagal complex and dark chocolate offers neuroprotection. *International Journal of Toxicology* **,** in press, 2011.
109. O'Neill, S. S., Gordon, C.J., Guo, RX, Zhu, HT., McCudden, C.R. Multivariate analysis of clinical, demographic, and laboratory data for classification of patients with disorders of calcium homeostasis. *American Journal of Clinical Pathology*, 135:100-107, 2011.
110. Hongyu An, Andria L. Ford, Katie Vo, Cihat Eldeniz, Rosana Ponisio, Hongtu Zhu, **Yimei Li,** Yasheng Chen, William J. Powers, Jin-Moo Lee, and Weili Lin. Early changes of tissue perfusion after tPA in hyperacute ischemic. *Stroke*, 42:65-72, 2011.
111. L. Calderón-Garcidueñas, M. Kavanaugh, M. Block, A. D'Angiulli, R Delgado-Chávez, R. Torres-Jardón, A. González-Maciel, R. Reynoso-Robles, N. Osnaya, R. Villarreal-Calderon, **R. Guo, Z. Hua**, H. Zhu, G. Perry, Philippe Diaz. Neuroinflammation, Alzheimer's-associated pathology and down-regulation of the prion-related protein in air pollution exposed children and young adults. *Journal of Alzheimer Disease*, in press, 2011.
112. L Calderón-Garcidueñas, R Engle, A. Mora-Tiscareño, M. Styner, G. Gómez-Garza, H.T. Zhu, V. Jewells, R. Torres-Jardón, L. Romero, M. E. Monroy-Acosta, **C. Bryant,** L. O. González-González, and H. Medina-Cortina. Exposure to severe urban air pollution influences cognitive outcomes, brain volume and systemic inflammation in clinically healthy children. *Brain and Cognition*, in press, 2011.

Peer-reviewed Full Papers (8 pages) in Conference Proceedings in Medical Imaging

(MICCAI and IPMI are the most preeminent medical imaging conferences)

113. **J. Wang,** H. Zhu, J.Q. Fan, Giovanello, K., and Lin, W. L. Multiscale Adaptive Smoothing Model for the Hemodynamic Response Function in fMRI, *MICCAI,* LNCS 6892, 269-276, *2011.* (acceptance rate <30%)

114. Zhu, H.T., Styner, M., **Li, Y.M.**, Kong, L. N., Shi, W., Lin, W., Coe, C., and Gilmore. Multivariate Varying Coefficient Models for DTI Tract Statistics. *MICCAI,* 690-697, *2010.* (acceptance rate <32%)
115. **Gao, W.**, Zhu, H.T., Giovanello, K. S., Lin, W. Multivariate network-level approach to detect interactions between large-scale functional systems. *MICCAI,* 298-295, *2010.* (acceptance rate <32%)
116. Chen, Y.S., Ji, S., Wu, X., An, H.Y. Zhu, H.T., Shen, D. G., Lin, W. Simulation of brain mass effect with an arbitrary lagrangian and eulerian FEM. *MICCAI,* 274-281, *2010.* (acceptance rate <32%)
117. Zhu, H.T., **Li, Y. M.**, Ibrahim, J. G., Lin, W., Shen, D. MARM: multiscale adapative regression for neuroimaging data. *Information Processing in Medical Imaging (IPMI),* 314-325, 2009. (acceptance rate <32%)
118. **Shi, X.**, Styner, M., Liberman J., Ibrahim, J. G., Lin, W., and Zhu, H.T. Intrinsic regression models for manifold-value data. *International Conference on Medical Imaging Computing and Computer Assisted Intervention (MICCAI),*192-199, *2009.* (acceptance rate <32%)
119. **Yap PT**, Wu GR, Zhu HT, Lin W, Shen DG. Fast Tensor Image Morphing for Elastic Registration, *MICCAI,* 721-729, 2009. (acceptance rate <32%)
120. **Chen, Y. S.**, Zhu, H.T., Shen, D.G., An, H.Y., Gilmore, J., Lin, W.L. Mapping growth patterns and genetic influences on early brain development in twins. *MICCAI,* 232-239, *2009*. (acceptance rate <32%)
121. Zhexing Liu, Zhu, H.T., Bonita L. Marks, Laurence M. Katz, Casey B. Goodlett, Guido Gerig, Martin Styner, Voxel-wise group analysis of DTI, Proceedings of the 6th IEEE International Symposium on Biomedical Imaging ISBI: From Nano to Macro 2009; 807-810. (50% acceptance rate).
122. Tang, S. Y, Fan, Y., Zhu, HT, Shen, D. Regularization of Diffusion Tensor Field Using Coupled Robust Anisotropic Diffusion Filters. *Mathematical Methods in Biomedical Image Analysis (MMBIA) 2009.*
123. **Yap, P. T.**, Wu, G.R., Zhu, HT., Lin, W.L., Shen, DG.. TIMER: Tensor Image Morphing for Elastic Registration. *MMBIA 2009.*
124. **Liu Z**, Zhu HT, Marks BL, Katz LM, Goodlett CB., Gerig G, Styner M. Voxel-wise group analysis of DTI. *ISBI 2009.*
125. Zhu HT, Hao X, Xu DR, Amir R, and Peterson BS. Theoretical analysis of the effects of noise on isotropic diffusion tensors. *MMBIA 2006*.
126. Chen, Y.S., Shen, D. G., Zhu, H. T., An, H. Y., Gilmore, J. H., Lin, W. Hierarchical unbiased group-wise registration for atlas construction and population comparison. *SPIE 2009 on Medical Imaging*.
127. **Li, Y.M.,** Zhu, H.T., Chen, Y.S., An, H.Y., Gilmore, J. H., Lin, W., Shen, D. Longitudinal analysis of neuroimaging data. *SPIE 2009 on Medical Imaging*.
128. **Li, Y.M.,** Zhu, H.T., Chen, Y.S., Ibrahim, J. G., An, H.Y., Lin, W., Shen, D. Regression analysis of diffusion tensor. *SPIE 2009 on Medical Imaging*.

Submitted and Under Revision

129. ***Zhu, HT.,*** Ibrahim JG, **Cho HS**. Scaled Cook's distance. In submission. 20 pages
130. **Hua, Z.W**., Zhu, HT, and Dunson, D. Semiparametric Bayes local additive models for longitudinal data. *Biometrics,* in revision.
131. **Yuan, Y., *Zhu, H.T.,*** Styner, M., J. H. Gilmore., and Marron, J. S. Varying coefficient model for modeling diffusion tensors along white matter bundles. *Annals of Applied Statistics*. in revision.
132. Zhu, HT., Ibrahim, JG., Tang, NS. Bayesian influence measures for joint models for longitudinal and survival data. *Biometrics*, in revision. 20 pages
133. **Skup, M**., Zhu, H.T., and Zhang HP. Multiscale adaptive marginal analysis of longitudinal neuroimaging data with time-varying covariates. *Biometrics*, in revision.
134. **Gao, W.,** Zhu, HT., Giovanello, K. S., Smith, J. K., Lin, WL. A multivariate approach reveals interactions of brain functional networks during resting and goal-directed conditions. *Submitted.* 20 pages
135. **Gao, W., Yuan, Y.,** Zhu, HT., Giovanello, K. S., Smith, J. K., Gilmore, J. H., and Lin, WL. Genetic and Environmental Influences on Brain's Functional Connectivity from Neonates to 2-year-olds. *Submitted*. 20 pages
136. Zhu, HT., Ibrahim, JG., Tang, NS. Bayesian sensitivity analysis of statistical models with missing data. *Submitted*.
137. **Li, YM**, John Gilmore, **JP Wang,** M. Styner, Weili Lin, ***Zhu, HT.*** Two-stage spatial adaptive analysis of twin neuroimaging data. *Submitted.* 20 pages
138. **Li, YM**, Ja-an Lin, Shen, D. G., Lin, W. L., ***Zhu, HT***. Spatial adaptive generalized estimating equations for longitudinal neuroimaging data. *Submitted.* 20 pages
139. Gu, M. G., **Wu, Y. Q**., Huang, B., Zhu, H.T. Rank marginal likelihood estimation for general transformation models. *Submitted*. 20 pages
140. Zhu, HT., Li, R., and **Kong, L**. Multivariate varying coefficient model and its application in neuroimaging data. *Submitted*. 20 pages
141. **Wang, J**., ***Zhu, H.T.,*** Fan, J.Q., Giovanello, K. S., , and Lin, W. L. Multiscale adaptive smoothing models for the hemodynamic response function in fMRI. *Submitted.*
142. Chow, S. M., Zhu, HT., and Sherwood, A. Fitting nonlinear ordinary differential equation models with random effects using the stochastic approximation expectation-maximization (SAEM) algorithm. *Submitted.*
143. **Zhou, X. L**., Wang, J., Zhang, J., and Zhu, H.T. Comparison of mixed-effects model, pattern-mixture model, and selection model in estimating treatment effect using PRO data in clinical trials. *Submitted.*
144. **Hua, Y.**, An, H., Zhang, X. and ***Zhu, H.T***. An accurate and fast method for reconstructing cerebral venous and arterial blood volumes by using MRI. *Submitted.*
145. Zhu, H.T., Chen, M. H., and Ibrahim, J.G. Diagnostic Measures for Cox Regression Model with Missing Covariates. *Submitted.*
146. **Cornea, E**., ***Zhu, H.T.,*** and Ibrahim, J. G. Intrinsic regression model for data in symmetric space. *Submitted.*

147. **Hua, Z.W**., Dunson, D., Gilmore, J.H., Styner, M., and ***Zhu, HT***. Semiparametric Bayesian Local Functional Models for Diffusion Tensor Tract Statistics. *Submitted*.

Selected Refereed abstracts

1. Wei Gao, Pewthian Yap, Hongtu Zhu, Kelly S. Giovanello, J Keith Smith, John H Gilmore, Weili Lin. The Funcitonal-structural Interplay during First Two Years' Brain Development. ISMRM 2010, Stockholm, Sweden, May 1-7, 2010. (Oral)
2. Wei Gao, Hongtu Zhu, John H Gilmore, Weili Lin. Evolving Modular Structures during Early Functional Brain Development. ISMRM 2010, Stockholm, Sweden, May 1-7, 2010, May 1-7, 2010.
3. Wei Gao, Hongtu Zhu, Kelly S. Giovanello, Weili Lin. A Multivariate Approach Reveals Interactions of Brain Functional Networks During Resting and Goal-Directed Conditions. ISMRM 2010, Stockholm, Sweden, May 1-7, 2010, May 1-7, 2010.
4. **Li, Y.M**., Zhu, H.T., Shen, D.G., Lin, W. L. MARM: Multiscale Adaptive Regression Models of Neuroimaging Data. ISMRM 2009.
5. **Gao, W.,** Zhu, HT., …, Lin, WL. Emergence of the brain's default network: Evidence from two-week-old to four-year-old healthy pediatric subjects. ISMRM 2009.
6. **Tang, S, Yap, P.T.,** Zhu, HT., Lin, WL., Shen DG. SHARP: DTI Smoothing by Hierarchical, Adaptive and Robust Procedure. ISMRM 2009.
7. **Yap, P.T**., Zhu, HT., Lin, W.L, Shen DG. Hierarchical Diffusion Tensor Image Registration Based on Tensor Regional Distributions. ISMRM 2009.
8. Chen, Y.S., An, H., Smith, K., Hall C, Robertson K., Robertson W, Zhu, HT. Gao, F., Bullit, E., Lin, W. L., Assessing white matter abnormalities in three clinical stages of HIV with diffusion tensor imaging. ISMRM 2009.
9. Yeh, P.H., Zhu, HT, …, Soares, J.C. Structural equation modeling (SEM) of gray matter volumes in unipolar and bipolar disorders: Differences in latent volumetric structure, *Biological Psychiatry*, 28S, 2008.
10. Miller, A.M., Sanchez, J, Liu, J, Hao, X, Zhu HT, Xu, D.R., Bansal, R, Peterson, B.S. Thalamus morphology in individuals with Tourette Syndrome, *Biological Psychiatry*, 197S, 2008.
11. Zhu, Q., Zhu HT, Gilmore, J., Wilber, K., Smith, J., Lin WL. Correlation analysis in multiple frequency ranges for function brain connectivity in normal pediatric subjects, RSNA 2007, (2007 Trainee Research Prize).
12. Xu D, Raz A, Bansal R, Zhu HT, Hao X, Kangarlu A, and Peterson BS. Fiber density map based on diffusion tensor image data, *ISMRM 2005*.
13. Peterson B, Zhu HT, Bansal R, and Weissman M. MRI in children at high risk for major depression. *Neuropsychopharmacology* 29, S5-S5, 2004.
14. Zhuang JC, Kangarlu A, Zhu HT, Shova S, Ment LR, and Peterson BS. BOLD signal from newborn brains in an auditory and language fMRI study, *HBM 2004*.

Presentations

1. International Symposium on Advancements of Biomedical Image Analysis, July 2012, Invited Speaker.
2. MICCAI 2011. Sept 2011.
3. Department of Biostatistics, John Hopkins University, Sep 2011.
4. MBIA (Multimodal Brain Image Analysis) 2011 workshop, Sep 2011. Invited Speaker.
5. Research Symposium on Frontier of Statistics, July, 2011, Hefei. Invited Speaker.
6. IMS China 2011 Distinguished Lecture Series organizer and speaker, July, Xian, China.
7. Department of Statistics, Fudan University, China, June 2011.
8. Department of Mathematics, Yunnan University, China, July 2011.
9. Department of Mathematics, Southeast University, China, July 2011.
10. Institute of Applied Mathematics, Chinese Academy of Science, June 2011
11. Institute of Automation, Chinese Academy of Science, June 2011.
12. International Workshop on Perspectives on High-dimensional Data Analysis (IWPHDA), at Fields Institute of Mathematical Sciences, Canada, June 2011.
13. Interface Meeting, Invited Section, NISS, June 2011.
14. ENAR 2011. Invited Section, March 2011.
15. Department of Statistics, University of Minnesota, Nov 2010.
16. MICCAI 2010 Selected Poster Presentations, Peking, September 2010.
17. China Institute of Applied Mathematics, Peking, September 2010.
18. Renming University, Peking, September 2010.
19. STIA'10 workshop at MICCAI 2010 as an oral presentation, Peking, September 2010.
20. Department of Biostatistics, University of Michigan, October, 2010.
21. Department of Statistics, Duke University, October, 2010.
22. JSM 2010, Topic Contributed Section, August 2010
23. Center for Structural and Functional Neuroscience, University of Montana, April 2010.
24. Invited speaker at Frontier of Statistical Decision Making and Bayesian Analysis, March, 2010.
25. ENAR 2010, Invited Section, March 2010.
26. Invited speaker at NICDS Centre De Recherches Mathematiques, Nov 2009.
27. Center for Statistical Science, Brown University, Oct 2009.
28. Department of Operational Research and Finance Engineer, Princeton University, Nov. 2009.
29. Department of Epidemiology and Biostatistics, Yale University, Oct 2009.
30. Department of Mathematics and Statistics, Georgia State University, Oct 2009
31. Department of Psychology, UNC at Chapel Hill, Sep 2009.
32. ISMRM 2009, Selected oral and poster presentations. Hanolulu, April 2009.

33. IPMI 2009, Selected poster presentation, Virginia, July, 2009.
34. ENAR 2009, Invited Section, March 2009.
35. MICCAI 2009, Selected presentation, London, Sep, 2009.
36. MMBIA 2009, Selected oral and poster presentations, August 2009.
37. ICSA 2009, Invited Section, San Francisco, June 2009.
38. JSM 2009, Invited Section, Washington D.C., August 2009.
39. SPIE Medical Imaging 2009, FL, Two Selected Oral Presentations, Feb 2009.
40. Department of Biostatistics and Statistics, Wisconsin-Madison, October 2008.
41. JSM 2008, Topic Contributed Section, Salty City, August 2008.
42. Interface Meeting, Invited Section, NISS, May 2008.
43. Department of Statistics, T exas A & M University, April 2008.
44. ENAR 2008, Invited Section, Virginia, March 2008.
45. Department of Statistics, Pennsylvania State University, Dec 6, 2007.
46. JSM 2007, Invited Section Chair and Topic Contributed Section, Salty City, August 2007.
47. ICSA 2007, Raleigh, NC, Invited section organizer and presenter, July 2007.
48. ENAR 2007, Atlanta, GA, March 2007.
49. SAMSI, Durham, NC, December 7, 2006.
50. JSM 2006, Seattle, Washington, August 2006.
51. MMBIA 2006: IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis, Selected Poster Presentation, July 2006.
52. ICSA 2006, June 2006.
53. Department of Epidemiology and Public Health, Yale University, April 2006.
54. Division of Biostatistics, New York University, April 2006.
55. Department of Statistics, George Washington University, October 2005.
56. Eighth IMS North American New Researchers' Conference, August 2005.
57. Statistical Society of Canada, Invited speaker, June 2005.
58. Department of Statistics, Kansas State University, April 2005.
59. ENAR meeting, Austin, TX, March, 2005. ENAR Invited Section Chair and speaker.
60. Columbia-UPenn-Yale Forum on Statistics in Psychiatry, May 2004.
61. International Biometric Society, ENAR 2004, March 2004.
62. The Seventeenth New England Statistics Symposium, University of Connecticut, April, 2003.
63. Department of Biostatistics, Harvard University, March 2003.
64. Department of Biostatistics, Columbia University, February 2003.
65. Department of Mathematics and Statistics, University of Guelph, Canada, Jan, 2003.
66. Department of Statistics, University of Manitoba, Canada, Jan, 2003.
67. Department of Mathematics and Statistics, Memorial University of Newfoundland, Dec, 2002.
68. Department of Biostatistics, University of Alabama at Birmingham, December 2002.
69. Fox Chase Cancer Center, Dec, 2002.

70. University of Texas School of Public Health at Houston, November 2002.
71. First Annual Proteomics Data Mining Conference, Duke University, September 23,2002.
72. ENAR meeting, Washington, D.C, March 2002. IMS Invited Section Chair.
73. ICSA meeting, Hong Kong, August 2001. Section Chair and IMS invited speaker.
74. SSC meeting, Vancouver, June 2001.
75. Frontier Science and Technology Research Foundation, Inc, Boston, January 2001.
76. Psychometric Society meeting, Vancouver, July, 2000.
77. SSC meeting, Ottawa, June, 2000.
78. Department of Mathematics and Statistics, University of Victoria, Feb, 2000.
79. Department of Methodology and Statistics, University of Utrect, Netherland, October 1999.

Teaching Record

• Courses
Columbia University, 2003 fall
Nonparametric Statistics
University of North Carolina at Chapel Hill,
2007-2010. Bios 763. Generalized Linear Models and Applications. 16 students
2011- Bios 773 Statistical and Mathematical Analysis of Medical Images. 10 students

• **Ph.D. Students supervised**

Columbia University
Yimeng Lu: 2006. Co-advise with Eva Petkova
Title: Clustering Functional Data.
First Job: Biostatistician at *Novartis*.
University of North Carolina at Chapel Hill
Xiaoyan Shi: 2008. Co-advise with Joseph G. Ibrahim
Title: Model Diagnostics and Semiparametric Models for Neuroimaging Data.
First Job: Biostatistician for software developer at SAS
Honor: ENAR Distinguished Student Paper Awards, ENAR 2008;
Best Doctor Dissertation award of Biostatistics department at UNC-CH.
Yimei Li : 2009. Joint with Joseph G. Ibrahim
Title: Statistical Analysis of Complex Neuroimaging Data.
First Job: Assistant member of Biostatistics at St Johns Children's hospital
Honor: ENAR Distinguished Student Paper Awards, ENAR 2009.
Ramon I. Garcia: 2009 Joint with Joseph G. Ibrahim
Title: Variable Selection for Models with Missing Data
First Job: Student at a seminary school.
Honor: ENAR Distinguished Student Paper Awards, ENAR 2009.

Hyunsoon Cho: 2009 Joint with Joseph G. Ibrahim
Title: Diagnostic Measures for Statistical Models
First Job: Biostatistician at National Cancer Institute
Ying Yuan: 2011 Joint with Steven Marron
Title: Statistical Analysis of Symmetric Positive Definite Matrices
First Job: Postdoctor fellow.
Honor: ICSA Distinguished Student Paper Awards, ICSA 2011.
Zhaowei Hua: 2011 Joint with David B. Dunson
Title: Semiparametric Baysian Models and Applications.
First Job: Novartis, Biostatistician

Current Ph.D. Students:

University of North Carolina at Chapel Hill

Xiaolei Zhou	(Biostatistics),		(on going)
Ja-an Lin	(Biostatistics),	Joint with J. G. Ibrahim	(on going)
Shaobang Rao	(Biostatistics),	Joint with J. G. Ibrahim	(on going)
Khondker Zakaria	(Biostatistics),	Joint with J. G. Ibrahim	(on going)
Zhida Wu	(Biostatistics),	Joint with J. G. Ibrahim	(on going)
Emil Cornea	(Biostatistics),	Joint with J. G. Ibrahim	(on going)
Michelle Miranda	(Statistics),	Joint with J. G. Ibrahim	(on going)
Qiang Sun	(BioStatistics),	Joint with J. G. Ibrahim	(on going)

Yale University

Martha Skup	(Biostatistics),	Joint with Heping Zhang	(on going)

- Ph.D. committee
  Columbia University
  Hui Wang (Statistics)
  Statistical Analysis of Genetic Data, 2004;
  Songmei Wu (Biostatistics)
  Statistical Analysis of PET Data, 2004;
  University of North Carolina at Chapel Hill
  Juhyun Park (Biostatistics):
  Bayesian Density Regression and Predictor-dependent clustering, 2008;
  Meagan Clement (Biostatistics):
  Analysis Techniques for Diffusion Tensor Imaging Data, 2008;
  Jingdan Zhang (Computer Science):

Object Detection and Segmentation using Discriminative Learning, 2008;
Wei Gao (Biomedical Engineer):
Functional Brain Network and Design for Diffusion Tensor Imaging, 2009.
Seunggeun Lee (Biostatistics):
Principal Component Analysis of Genetic Data, 2010.
Liddy Chen (Biostatistics):
Trial design issues in complex survival models, 2010.
Liddy Chen (Biostatistics):
Trial design issues in complex survival models, 2010.
Matthew W Wheeler (Biostatistics):
Gaussian Process Mixed Membership Models 2012.

- Postdoctoral/Research fellows/Visiting scholars supervised

Columbia University

Rachel Marsh (2003-2005)
Topic: Functional and Structural MRI and Applications in Psychiatry
Daniel Gorman (2004-2006)
Topic: Functional and Structural MRI and Applications in Psychiatry
Jose Amat (2003-2006)
Topic: Functional and Structural MRI and Applications in Psychiatry
Tiziano Colibazzi (2004-2006)
Topic: Functional and Structural MRI and Applications in Psychiatry
Nianshen Tang (2006)
Topic: Semiparametric Methods for Neuroimaging Data.
Miguel Moreno-Iniguez (2005-2006)
Topic: Functional and Structural MRI and Applications in Psychiatry

University of North Carolina at Chapel Hill

Xiaoyan Shi (2008-2009)
Topic: Semiparametric Methods for Neuroimaging Data.
Current Position: Software Engineer at SAS
Niansheng Tang (2009)
Topic: Statistical Diagnostic Methods.
Current Position: Professor at Yunnan University
Ruixin Guo (2009-2011)
Topic: Machine Learning Methods for Neuroimaging Data.
Current Position: Assistant Professor at University of Colorado Denver
Zaixing Li (2011-2012)
Topic: Functional Methods for Neuroimaging Data.
Current Position: Associate Professor at China University Mining and Technology

Jiaping Wang (2009-2012)
Topic: Multiscale Adaptive Methods for Functional Imaging Data.
Linglong Kong (2010-2012)
Topic: Robust Methods for Neuroimaging Data.
Yuai Hua (2011-2012)

Topic: Statistical Analysis of Perfusion Images.

Zhaohua Lu (2011-2013)

Topic: Dynamic Analysis of Functional Data.

Partha Sarathi Mukherjee (2011-2013)

Topic: Statistical Analysis of Diffusion Tensor Data.

Mihye Ahn (2011-2013)

Topic: Statistical Analysis of Imaging and Genetic Data.

Ying Yuan (2011-2012)

Topic: Statistical Analysis of Imaging and Genetic Data.

Contracts & Grants

Ongoing

Ongoing Research Support

P01 Michael Kosorok (PI) 3/1/2010-2/29/2014 5%
Statistical Methods for Cancer Clinical Trials.
Role. Co-Investigator. Total Direct Cost: 12,350,257

5 UL1 RR025747-03 (Runge) 5/19/2008--4/30/13 2%
National Center for Research Resources
UNC Clinical Translation Science Award - Biostatistics Core
A national consortium of medical research institutions, funded through Clinical and Translational Science Awards (CTSAs), is working together and shares a common vision to: Improve the way biomedical research is conducted across the country, reduce the time it takes for laboratory discoveries to become treatments for patients, engage communities in clinical research efforts and train the next generation of clinical and translational researchers.
Role: Biostatistician Total Direct Cost: 58,856,039

5 P30 HD003110-43 (Piven) 7/1/2008--6/30/13 5%
EK Shriver National Institute Child Health and Human
UNC Developmental Disabilities Research Center - Core B: Data Management & Statistical Analysis
The UNC Mental Retardation and Developmental Disabilities Research Center (DDRC) is an interdisciplinary program with a mission to support and promote research relevant to understanding the pathogenesis and treatment/prevention of neurodevelopmental developments.
Role: Co-Investigator Total Direct Cost: 4,531,334

BCS-0826844 (Chow) 9/15/2008--8/31/11 10%
National Science Foundation
Collaborative Research: Developing Non-Stationary and Network-based Methods for Modeling the Perception and Physiology of Emotion

By bringing together a team of researchers in psychology, statistics, biostatistics and affective neuroscience, the proposed research puts forth a multi-modal framework for collecting affective data along different time scales, including physiological changes that unfold over milliseconds and self perception data that reflect day-to-day emotional fluctuations. The broader aim of the project is to promote further integration of complex systems modeling techniques with mainstream research of affect.
Role: Co-Investigator Total Direct Cost: 423,802

5 R01 DE005215-31 (Phillips) 5/1/2009--3/31/14 5%
National Institute of Dental & Cranofacial Research
Influences on Stability Following Orthognathic Surgery
The clinical data from the specific aims of this study will advance the ultimate goal of improving the quality of treatment for patients with dentofacial deformities by improving clinical decision making and treatment planning for orthognathic surgery and by enhancing the ability of patients to make informed treatment choices.
Role: Co-Investigator Total Direct Cost: 2,247,979

5 R21 CA140841-02 (Shen) 5/15/2009--4/30/11 4%
National Cancer Institute
Improving the Specificity of Dynamic MRI in Breast Cancer Diagnosis
This project aims at a significant improvement of specificity of dynamic MRI in detecting and diagnosing breast cancer. An advanced enhancement segmentation module will be developed for segmenting potentially suspicious enhancement with high sensitivity and specificity. And, a novel enhancement classification module will be developed to differentiate benign from malignant enhancement for both mass and non-mass enhancement cases.
Role: Co-Investigator Total Direct Cost: 275,000

5 R01 HL092944-02 (Gallippi) 8/1/2009--6/30/14 10%
National Heart, Lung and Blood Institute
ARFI Ultrasound for Noninvasive, Diagnostic Atherosclerosis Imaging
Atherosclerosis accounts for 70% of cardiovascular disease (CVD) mortality. Outcomes may be improved by timely and appropriate intervention that is contingent upon early detection of atherosclerotic plaques and reliable assessment of their risk for rupture causing heart attack, stroke, or other end organ ischemia. Our laboratory is developing a novel, noninvasive diagnostic atherosclerosis imaging technology - Acoustic Radiation Force Impulse (ARFI) ultrasound – which exploits tissue composition by interrogating tissue material properties.
Role: Co-Investigator Total Direct Cost: 1,250,000

5 R01 EB008374-02 (Shen) 9/15/2009--8/31/13 4%
National Institute of Biomedical Imaging and Bioengine
Continued Development of 4-dimentional Image Warping and Registration Software

This project aims to continue the methodological development, testing and evaluation of a 4-dimensional (4D) image warping nd registration algorithm, with emphasis on measurement of brain structure and its evolution over time.
Role: Co-Investigator Total Direct Cost: 1,000,000

5 R01 MH086633-02 (Zhu) 3/1/2010--11/30/13 20%
National Institute of Mental Health
Statistical Analysis of Biomedical Imaging Data in Curved Space
The project proposes to analyze imaging, behavioral, and clinical data from two large neuroimaging studies of schizophrenia and autism. New statistical methods are develped and applied to detect morphological differences of cortical and subcortical structures across time between schizophrenia and autism patients and healthy subjects.
Role: Principal Investigator Total Direct Cost: 900,000

1 R01 CA140413-01A2 (Shen) 7/1/2010--6/30/15 8%
National Cancer Institute
Online Collection of Patient-specific Information for Daily Prostate Segmentation and Registration
This project aims at developing a novel method for online learning of patient-specific appearance and shape deformation information, as a way to significantly improve prostate segmentation and registration from daily CT images of a patient during image-guided radiation therapy.
Role: Co-Investigator Total Direct Cost: 1,250,000

1 R01 MH091645-01A1 (Styner) 9/8/2010--5/31/15 4%
National Institute of Mental Health
Developmental Brain Atlas Tools and Data Applied to Humans and Macaques
The overarching project requires the availability of developing rhesus monkeys for a neuroimaging study of brain development. The knowledge gained from this longitudinal examination of brain maturation and the innovative software created for these novel analyses will set the stage for invaluable translational applications to the investigation of neurodevelopmental disorders in humans.
Role: Co-Investigator Total Direct Cost: 2,161,852

1 R01 NS062754-01A2 (Sen) 9/17/2010--6/30/15 10%
Natl Institute of Neurological Disorders & Stroke
Effect of HIV Infection and Antiretroviral Therapy on Cerebral Autoregulation
This project will address the role of impaired cerebrovascular autoregulation as a possible mechanism in HIV-associated stroke.
Role: Co-Investigator Total Direct Cost: 1,250,000

1 R21 AR059890-01 (Niethammer) 8/1/10 7/31/12 10.00%
National Institute of Arthritis & Musculoskeletal & Skin Diseases
Automatic Quantitative Analysis of MR Images of the Knee in Osteoarthritis

Role: Co-Investigator Total Direct Cost: 1,250,000

1 R01 AG037452-01 (Giovanello) 7/1/11 6/30/15
10.00%
National Institute on Aging $399,720.00
Cognitive and Neural Mechanisms Mediating Implicit Relational Memory in Aging

The primary goal of this proposal is to examine the scope and limits of preserved and impaired implicit relational memory in aging.
Role: Co-Investigator Total Direct Cost: $399,720.00

Completed Research Support

SES-0643663 (Zhu) 4/1/2006--3/31/10 9%
National Science Foundation
Diagnosing Statistical Models for Longitudinal and Family Data
The primary goal of this project is to develop, evaluate, and apply new statistical methodology to the analysis of longitudinal and family data. Our specific aims from a methodological perspective are: (1) Development of local influence approach for assessing parametric and semiparametric models; (2) Development of first-order and second-order residual diagnostics for assessing mean and covariance structure of parametric & semiparametric models; (3) Development of diagnostic tools for assessing empirical likelihood, & (4) Score test statistics for selecting random effects components and testing parametric functions in semiparametric models.
Role: Principal Investigator Total Direct Cost: 94,819

5 R01 CA074015-12 (Ibrahim) 9/1/1997--6/30/11 18%
National Cancer Institute
Inference in Regression Models with Missing Covariates
In this proposal, we propose Bayesian and frequentist methodology for local influence diagnostics and develop model assessment tools for complete data settings as well as in the presence of missing covariate and/or response data for a variety of statistical models, including generalized linear models, models for longitudinal data, and survival model.
Role: Co-Investigator Total Direct Cost: 435,974

5 R21 AG033387-02 (Zhu) 3/1/2009--2/28/11 15%
National Institute on Aging
Longitudinal Analysis of Biomedical Imaging Data
The project proposes to analyze imaging, behavioral and clinical data from one large neuroimaging study on Alzheimer's diseases. New statistical methods are developed and applied to detect morphological differences of cortical and subcortical structures across time between Alzheimer patients and healthy subjects.
Role: Principal Investigator Total Direct Cost: 275,000

OVERLAP

NONE

References

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