Full Curriculum Vitae
Date: April 18, 2021

Personal

Name: Hongtu Zhu
Lab name: BioStatistics and Imaging Genomics AnalysiS Lab (BIG-S2=Statistics and Signal)
Lab Website: https://www.med.unc.edu/bigs2/
Clinical Website: https://bigkp.org/

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

DiDi Chuxing	May 2018-March 2021 DiDi Fellow, Chief Scientist of Statistics, Director of Department of Statistical and Decision Sciences consisting of four research teams and Director of Department of Feature Engineering consisting of five research teams
The Chinese University of Hong Kong,	Oct 2019- Adjunct Professor
MD Anderson Cancer Center	May 2017- April 2018 Endowed Bao-Shan Jing Professorship in Diagnostic Imaging (Biostatistics)
MD Anderson Cancer Center	May 2016- April 2018 Professor
Rice University	May 2016 Adjunct Professor
Texas A&M University	May 2016 Adjunct Professor
University of North Carolina at Chapel Hill	August 2011- Professor of Biostatistics
University of North Carolina at Chapel Hill	July 2021- Professor of Computer Science
University of North Carolina at Chapel Hill	July 2021- Professor of Genetics
University of North Carolina at	August 2006-July 2011 Associate Professor

Chapel Hill
New York State Psychiatric Institute April 2004-July 2006 Research Scientist IV
Columbia University July 2003-July 2006 Assistant Professor

Honors

Daniel Wagner Prize for Excellence in Operations Research Practice，
Informs 2019.
Senior Member IEEE 2020
MICCAI Oropharynx Cancer (OPC) Radiomics Challenge ::
Human Papilloma Virus (HPV) winner team leader 2017
A Grand Challenge for Tissue Microarray Analysis in Thyroid Cancer Diagnosis:
ISBI 2017 winner team leader 2017
CPRIT senior Investigator of Texas State with 4M for research 2015
Arthur H. Wuehmann Prize,
American Academy of Oral and Maxillofacial Radiology 2011
Fellow, American Statistical Association, 2011
Fellow, Institute of Mathematical Statistics, 2011

Memberships

American Statistical Association
International Biometric Society
Human Brain Mapping
Institute of Mathematical Statistics
International Society for Bayesian Analysis
International Chinese Statistical Association
Society of Medical Imaging Computing and Computer Assisted Intervention

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
2009-2015 Doctor Examination Committees I and II, Graduate Studies Committee

2011-2015 Research Council/Conflict of Interest Committee for School of Public Health

Professional Service

Grants Review:

National Science Foundation, 2007, 2009, 2010, 2011, 2012, 2013, 2014
NIH Challenge grants, 2009.
NIH Neurological, Aging and Musculoskeletal Epidemiology Study Section, 2009, 2010.
NIH ZRG1 BST-N(90), 2011.
NIH NINDS NeuroNEXT program, 2012, 2013
NIH ZRG1 BDCN-L(60)R, 2013
NIH ZRG1 AARR-F (52) (53) R 2014/01
NIH ZNS1 SRB-B (39) 2014-01
National Sciences and Engineering Research Council of Canada, 2010, 2011.
Chile Foudecyt National Research Funding Competition 2010, 2011
CIHR- Methodological Innovations for Neuroimaging Datasets, 2013
CIHR- Secondary Analysis of Neuroimaging Datasets, 2013
NIH Zrg1 BDCN-L(60)R, 2014.
NIH G79, 2014
NIH Clinical Neuroscience and Neurodegeneration (CNN) Study Section 2015-.
NSF Collaborative Research in Computational Neuroscience (CRCNS), 2015, 2016, 2017, 2018
NIH Big Data to Knowledge (BD2K) training grant panel, 2015, 2016
NIMH T32 training grant panel, 2015, 2017
NIH ZRG1 HDM-W 03 2016
NIH ZRG1 RPHB-W (53) R 2016
NIH ZRG1 BDCN-N (55) R 2016
NIH BCHI Study Section 2017
NIH ZRG1-IMST-U-50 2017
NIH ZMH1-ERB-M-01 2017
NIH ZMH1-ERB-X-04 2017
NIH ZRG1-IFCN-J (57) 2017
NIH BMRD 2018
NIH APDA 2018
NIH ZAT SM (63) P 2021.
NIH ZRG1 F13-Z (20) L, 2020.
NIH ZDC1 SRB-Z (42) 1 2021.
NSF SCALE MoDL Panel 2 2021.

Associate Editor:

2009-2011	Biometrics,
2007-2018	Statistics and its Interface,
2011-2017	Neurosurgery

2011-	Statistica Sinica
2012-2018	Journal of American Statistical Association, A&CS
2013-2018	Annals of Statistics
2014-2018	Journal of American Statistical Association, T&M
2015-2020	Statistics in Biosciences
2015-2021	Computational Statistics and Data Analysis.
2019-	Journal of Royal Statistical Society， Series B。

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

Student Award Committee: ICSA 2006 Applied Statistics Symposium.

International Chinese Statistical Association Board of Directors 2012-2014

Regular member of *Promoting the Practice and Profession of Statistics* Committee American Statistical Association

Reviewer Committee:
International Conference on Medical Imaging Computing and Computer Assisted Intervention (MICCAI) 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016
IEEE International Symposium on Biomedical Imaging 2013, 2012, 2011, 2010
Neural Information Processing Systems (NIPS) Conference 2010, 2016， 2020

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

Advisory Board:
EPSRC Centre for Clinical Imaging in Healthcare at Cambridge University.
http://cmih.maths.cam.ac.uk

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

ENAR Education advisory committee: ENAR 2011.
ENAR Student Award Committee: 2010-2013.

SBSS Student Award Committee: 2012.

Conference Organizer:

Short Courses:

SAMSI NDA 2013 summer workshop
JSM 2013 on Statistical Methods for Neuroimaging Data Analysis.
Advanced Statistical Program 2014 in Northeast Normal University
SAMSI CCNS summer school organizer and instructor.

One of four Program Leaders (H. Zhu, Robert Kass, Haipeng Shen, and J. Wang) and Program Chair:

SAMSI summer workshop on Neuroimaging Data Analysis (NDA) 2013
Program Leader for SAMSI full-year program on Challenges in Computational Neuroscience (CCNS) with five workshops, one short course, and two regular courses 2015-2016

Co-chair

Neuroimaging Data Analysis workshop at Banff, 2016
Tsinghua-Sanya Mathematics and Statistics Workshop 2016
Information Processing in Medical Imaging (IPMI) 2017 2017
Workshop on Applications-Driven Geometric Functional Data Analysis 2017
Recent Advances in Statistical Analysis of Imaging Data 2020
Statistical Learning Methods for Modern AI 2021
Reinforcement Learning for Intelligent Transportation Systems Workshop, IJCAI 2021.

Bi-weekly Applied Reinforcement Learning Seminar Series
https://www.arlseminar.com/

Program Committee:

CFE-CMStatistics 2015
Eco-Statistics 2017
ICSA International Conference 2016
Bayesian Nonparametric Meeting 2015
JSM 2013
International Conference on Image and Signal Processing (ICSP) 2009, 2011, 2012.
The third IMS-China Conference 2011
Machine Learning in Medical Imaging (MLMI) 2011, 2012
Spatio-temporal image analysis workshop STIA'12, 2012
International Symposium on Advancements in Neuroimaging 2012. Co-Chair
AAAI 2019
IJCAI 2019, 2020, 2021
KDD 2019, 2020, 2021

Planning Committee:

ENAR 2010

Invited Sections:

JSM 2015, Introductory lecture organizer, August 2015.
JSM 2013, Invited Section Organizer, August 2013.
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 session organizer, July 2011
ENAR 2011, Roundtable, March 2011.
ENAR 2012, Invited Section Organizer, March 2012.
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 over 50 papers per year for the following journals:

Ecology, Science, Nature， Nature Genetics， Nature Communication，
Medical Physics, NeuroImage, Technometrics,
Computational Intelligence and Neuroscience, Psychological Methods,
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 B and C.
JAMA Internal Medicine

Panel of Review: Mathematical Reviews

Software development:

https://github.com/BIG-S2

FADTTS: A functional analysis of diffusion tensor tract statistics
available at http://www.nitrc.org/projects/fadtts/
FRATS available at http://www.nitrc.org/projects/frats/
FVGWAS: Fast Voxelwise Genome Wide Association Analysis
available at https://www.nitrc.org/projects/fvgwas/
All our tools are available at
https://github.com/BIG-S2

Citation:

Google Scholar:

Citation: 16500+ since 2001; 10200+ since 2016.
h-index: 63 since 2001; 48 since 2016.
I10-index: 232 since 2001; 206 since 2016.

Presentations

1. Department of Statistics, Upenn, December 2021.
2. Department of Biostatistics, URMC CTSI Analytics Colloquium， 2021.
3. New England Statistical Society, Nov 2021.
4. Department of Statistics, NUS, Oct 2021.
5. Department of Biostatistics, Vanderbilt University, September 2021.
6. ICSA Canada, August 2021.
7. JSM 2021.
8. Department of Epidemiology and Biostatistics, UCSF, August 2021.
9. Department of Statistics and Data Science, Southern China of Science and Technology, May 2021.
10. Department of Statistics and Data Science, Southern China of Science and Technology, Dec 2020.
11. Department of Statistics, Purdue University, Oct 2020.
12. JSM 2020
13. Summer course: Shanghai University of Finance and Technology, July 2020
14. Summer Course: East Normal University, July 2020
15. Reming University, April 2020
16. Stanford University, March 2020.
17. University of Hong Kong, Dec 2019.
18. The Chinese University of Hong Kong, Dec 2019.
19. NeurIPS 2019, Industrial Expo and Workshop on D2-City Challenge, Dec 2019.
20. University of Toronto, Toronto, Dec 2019.
21. Keynote Speaker for Big-data Analytics, Wuhan, Nov 2019.

22. Foundation for Data Science, Changchun, Oct 2019.
23. Nankai Special Lecture, September 2019.
24. AI Talk, DiDi, September 2019.
25. JSM 2019. Denver. July 2019.
26. Summer School on Imaging science, XiAn, June 2019.
27. Big-data and Modern Statistical Methods. Shanghai, June 2019.
28. CCFA 2019, Nanjing, May 2019.
29. Smart Mobility Workshop 2019. Hong Kong, May 2019.
30. Keynote Speaker. 2019 Conference on Survival Analysis and Applied Statistics, Lingyi, Shangxi, May 2019.
31. 2rd GIFT Long Triangle Capital Summit, YangZou, May 2019。
32. Academic Sinica, Taipei, April 2019。
33. 2019 AI Science Frontier Meeting, Beijing, 2019.
34. UNC Chapel Hill, Biostatistics, Feb 2019.
35. AAAI 2019, January 2019.
36. 2018 International Conference on Data Science, Shanghai, December 2018.
37. The Chinese University of Hong Kong, October 2018.
38. JSM 2018.
39. Hong Kong University, July 2018
40. Renming University, July 2018
41. Peking University, June 2018
42. UIUC, March 2018.
43. Michigan State University, Feb 2018.
44. Fudan Big-data Forum, Dec 2017.
45. Yale University, Nov 2017
46. University of Texas, MD Anderson Cancer Center, Nov 2017
47. University of Pittsburg, Oct 2017
48. University of Texas, MD Anderson Cancer Center, Oct 2107
49. DiDi Transportation, Sept 2017
50. ASA Houston Chapter, Sept 2017
51. CMO-Oaxaca, Sept 2017.
52. JSM 2017, July 2017.
53. IPMI 2017, June 2017.
54. Southern University of Science and Technology, June 2017.
55. ZhongShan University, June 2017.
56. Tsinghua University, June 2017.
57. The international workshop for mathematical imaging and digital,geometry, Beijing, China, June 2017.
58. UC Davis, May 2017.
59. Texas A&M, April 2017.
60. UNC-CH Statistics, April 2017.
61. UT Public Health, March 2017.
62. Rice University, February 2017.
63. National Cancer Institute, January 2017.
64. Tsinghua-Sanya Mathematics Institute, December 2016.
65. ICSA 2016, December 2016.

66. Fudan big-data conference. December 2016.
67. University of Pittsberg, Nov 2016.
68. North Carolina State University, Oct 2016.
69. Nonparametric Workshop, UMich, Oct 2016.
70. International Congress of Chinese Mathematicians, invited speaker for 45 minutes, August 2016.
71. JSM 2016, August 2016.
72. IMS neuroimaging workshop, invited speaker, Singapore, July 2016.
73. IMS Pacific Rim, invited speaker, June 2016.
74. SII imaging workshop, invited speaker, June 2016.
75. SAMSI CCNS transition workshop, May 2016.
76. University of Florida, April 2016.
77. University of Newcastle, April 2016.
78. Workshop on Advances in Manifold-valued Data, Nottingham, U.K., April, 2016.
79. ENAR 2016, invited section, March 2016.
80. Princeton University, Wilks seminar, March 2016.
81. USC Enigma, Feb 2016.
82. USC Data Science and Statistics, Feb 2016.
83. Banff Workshop on NDA, Banff, BIRD Institute, Jan 2016.
84. CMStatistics, London, Dec 2015.
85. Oxford University, Dec 2015.
86. Warwick University, Dec 2015.
87. iBRIGHT 2015, MD Anderson, Nov 2015.
88. University of Virginia, Oct 2015.
89. Florida State University, September 2015.
90. JSM 2015, Seattle, August 2015
91. SAMSI summer school on CCNS, July 2015
92. Frontier of Functional Data Analysis, Banff, BIRD Institute, July 2015.
93. Human Brain Mapping, June, 2015.
94. Frontier of Statistics, Chinese Academy of Science, June, 2015.
95. ASA SI imaging workshop, University of Michigan, May, 2015.
96. Department of Biostatistics, New York University, April 2015.
97. ENAR 2015, Miami, March 2015.
98. MD Anderson Cancer Center, December, 2014.
99. Big Data Workshop in Shanghai, November 2014
100. Department of Biostatistics, Emory University, August 2014
101. JSM 2014, August 2014.
102. Academic Sinica, Peking, July 2014
103. School of Mathematics, Sun Yat-sen University, July 2014
104. IMS Pacific Rim, Taiwan, July 2014
105. Statistica Sinica, Taiwan, June 2014
106. Department of Mathematics, National Sun Yat-sen University, Taiwan, June 2014
107. Department of Finance Mathematics and Engineering, Southern China University of Science and Technology, May 2014

108. Department of Mathematics, Southeast University, May 2014
109. Department of Mathematics, Nanjing Normal University, May 2014
110. Department of Statistics, Chinese University of Hong Kong, May 2014
111. Department of Mathematics, Nanyang Technological University, May 2014
112. Department of Statistics, National University of Singapore, May 2014.
113. BIRS for Mathematical Innovation and Discovery, Canada, Feb, 2014.
114. Department of Applied Mathematics and Statistics, John Hopkins University, November, 2013.
115. Department of Biostatistics, Brown University, November, 2013.
116. Department of Statistics, Virginia Tech University, September 2013.
117. JSM 2013, August 5-10, 2013
118. IPMI 2013, June 28-July 3, 2013
119. HBM 2013, June 15-20, 2013
120. SAMSI NDA program, June 4-14, 2013
121. Department of Statistics, Purdue University, March 2013.
122. Department of Statistics, University of Michigan, Sep 2012.
123. JSM 2012, invited speaker and organizer.
124. ICSA, Boston, June 2012, Invited Speaker.
125. Mathematical Bioscience Institute, May 2012, Invited Speaker.
126. International Conference on Medical Image Analysis and Clinical Applications, June 2012, Keynote Speaker
127. Human Brain Mapping, June 2012, poster presenter.
128. St Johns Children's hospital. April 2012.
129. ENAR 2012. Washington DC. Invited session organizer and speaker.
130. MICCAI 2011. Sept 2011.
131. Department of Biostatistics, John Hopkins University, Sep 2011.
132. MBIA (Multimodal Brain Image Analysis) 2011 workshop, Sep 2011. Invited Speaker.
133. Research Symposium on Frontier of Statistics, July 2011, Hefei. Invited Speaker.
134. IMS China 2011 Distinguished Lecture Series organizer and speaker, July, Xian, China.
135. Department of Statistics, Fudan University, China, June 2011.
136. Department of Mathematics, Yunnan University, China, July 2011.
137. Department of Mathematics, Southeast University, China, July 2011.
138. Institute of Applied Mathematics, Chinese Academy of Science, June 2011
139. Institute of Automation, Chinese Academy of Science, June 2011.
140. International Workshop on Perspectives on High-dimensional Data Analysis (IWPHDA), at Fields Institute of Mathematical Sciences, Canada, June 2011.
141. Interface Meeting, Invited Section, NISS, June 2011.
142. ENAR 2011. Invited Section, March 2011.
143. Department of Statistics, University of Minnesota, Nov 2010.

144. MICCAI 2010 Selected Poster Presentations, Peking, September 2010.
145. China Institute of Applied Mathematics, Peking, September 2010.
146. Renming University, Peking, September 2010.
147. STIA'10 workshop at MICCAI 2010 as an oral presentation, Peking, September 2010.
148. Department of Biostatistics, University of Michigan, October, 2010.
149. Department of Statistics, Duke University, October, 2010.
150. JSM 2010, Topic Contributed Section, August 2010
151. Center for Structural and Functional Neuroscience, University of Montana, April 2010.
152. Invited speaker at Frontier of Statistical Decision Making and Bayesian Analysis, March, 2010.
153. ENAR 2010, Invited Section, March 2010.
154. Invited speaker at NICDS Centre De Recherches Mathematiques, Nov 2009.
155. Center for Statistical Science, Brown University, Oct 2009.
156. Department of Operational Research and Finance Engineer, Princeton University, Nov. 2009.
157. Department of Epidemiology and Biostatistics, Yale University, Oct 2009.
158. Department of Mathematics and Statistics, Georgia State University, Oct 2009
159. Department of Psychology, UNC at Chapel Hill, Sep 2009.
160. ISMRM 2009, Selected oral and poster presentations. Hanolulu, April 2009.
161. IPMI 2009, Selected poster presentation, Virginia, July, 2009.
162. ENAR 2009, Invited Section, March 2009.
163. MICCAI 2009, Selected presentation, London, Sep, 2009.
164. MMBIA 2009, Selected oral and poster presentations, August 2009.
165. ICSA 2009, Invited Section, San Francisco, June 2009.
166. JSM 2009, Invited Section, Washington D.C., August 2009.
167. SPIE Medical Imaging 2009, FL, Two Selected Oral Presentations, Feb 2009.
168. Department of Biostatistics and Statistics, Wisconsin-Madison, October 2008.
169. JSM 2008, Topic Contributed Section, Salty City, August 2008.
170. Interface Meeting, Invited Section, NISS, May 2008.
171. Department of Statistics, Texas A & M University, April 2008.
172. ENAR 2008, Invited Section, Virginia, March 2008.
173. Department of Statistics, Pennsylvania State University, Dec 6, 2007.
174. JSM 2007, Invited Section Chair and Topic Contributed Section, Salty City, August 2007.
175. ICSA 2007, Raleigh, NC, Invited section organizer and presenter, July 2007.
176. ENAR 2007, Atlanta, GA, March 2007.

177. SAMSI, Durham, NC, December 7, 2006.
178. JSM 2006, Seattle, Washington, August 2006.
179. MMBIA 2006: IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis, Selected Poster Presentation, July 2006.
180. ICSA 2006, June 2006.
181. Department of Epidemiology and Public Health, Yale University, April 2006.
182. Division of Biostatistics, New York University, April 2006.
183. Department of Statistics, George Washington University, October 2005.
184. Eighth IMS North American New Researchers' Conference, August 2005.
185. Statistical Society of Canada, Invited speaker, June 2005.
186. Department of Statistics, Kansas State University, April 2005.
187. ENAR meeting, Austin, TX, March, 2005. ENAR Invited Section Chair and speaker.
188. Columbia-UPenn-Yale Forum on Statistics in Psychiatry, May 2004.
189. International Biometric Society, ENAR 2004, March 2004.
190. The Seventeenth New England Statistics Symposium, University of Connecticut, April, 2003.
191. Department of Biostatistics, Harvard University, March 2003.
192. Department of Biostatistics, Columbia University, February 2003.
193. Department of Mathematics and Statistics, University of Guelph, Canada, Jan, 2003.
194. Department of Statistics, University of Manitoba, Canada, Jan, 2003.
195. Department of Mathematics and Statistics, Memorial University of Newfoundland, Dec, 2002.
196. Department of Biostatistics, University of Alabama at Birmingham, December 2002.
197. Fox Chase Cancer Center, Dec, 2002.
198. University of Texas School of Public Health at Houston, November 2002.
199. First Annual Proteomics Data Mining Conference, Duke University, September 23,2002.
200. ENAR meeting, Washington, D.C, March 2002. IMS Invited Section Chair.
201. ICSA meeting, Hong Kong, August 2001. Section Chair and IMS invited speaker.
202. SSC meeting, Vancouver, June 2001.
203. Frontier Science and Technology Research Foundation, Inc, Boston, January 2001.
204. Psychometric Society meeting, Vancouver, July, 2000.
205. SSC meeting, Ottawa, June, 2000.
206. Department of Mathematics and Statistics, University of Victoria, Feb, 2000.

207. 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, 2012. 2014, Bios 763. Generalized Linear Models and Applications. 16 students

2011- Bios 773 Statistical and Mathematical Analysis of Medical Images. 10 students

2014- Bios 762. Regression Models and Applications. 16 students

2015- Bios 762. Regression Models and Applications. 30 students.

2020, Bios 772 Statistical and Mathematical Analysis of Medical Images. 7 students

• **MS. Students supervised**

Zhida Wu (Biostatistics),

• **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.

Current Job: Senior Statistician 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.

Current Job: Associate member of Biostatistics at St Johns Children's hospital

Honor: ENAR Distinguished Student Paper Awards, ENAR 2009,

Kupper Publication Awards.

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
Current Job: Associate Professor, National Cancer Center of Korean

Ying Yuan: 2011 Joint with Steven Marron
Title: Statistical Analysis of Symmetric Positive Definite Matrices
First Job: Postdoctor fellow.
Second Job: Assistant member of Biostatistics at St Johns Children's hospital
Honor: ICSA Distinguished Student Paper Awards, ICSA 2011.

Zhaowei Hua: 2011 Joint with David B. Dunson
Title: Bayesian Analysis of Varying Coefficient Models and Applications.
First Job: Millennium, Biostatistician

Ja-an Lin, 2013 (Biostatistics), Joint with J. G. Ibrahim
Title: Statistical Analysis of Ultra-high Dimensional Imaging Genetic Data.
Honor: ENAR Distinguished Student Paper Awards, ENAR 2013.
First Job: FDA, Biostatistician

Khondker Zakaria, 2013 (Biostatistics), Joint with J. G. Ibrahim
Title: Bayesian Analysis of Ultra-high Dimensional Imaging Genetic Data.
Honor: ENAR Distinguished Student Paper Awards, ENAR 2013.
First Job: Medivation Inc, Biostatistician

Emil Cornea, 2014 (Biostatistics), Joint with J. G. Ibrahim
Title: Statistical Analysis of Data on Riemannian Symmetric Space.
First Job: Research Assistant Professor, UNC-Chapel Hill, Psychiatry

Michelle Miranda, 2014 (Statistics), Joint with J. G. Ibrahim
Title: Bayesian Analysis of Ultra-high Dimensional Imaging Data.
First Job: Postdoctoral fellow, NeuroMat Institute, Cidade Universitária
Current Job：Assistant Professor at University of Victoria， Canada

Qiang Sun, 2014 (Biostatistics), Joint with J. G. Ibrahim
Title: Regularization Methods for High Dimensional Data.
Honor: ICSA 2013 and 2014 Distinguished Student Paper Awards
First Job: Postdoctoral fellow, Princeton University
Second Job: Assistant Professor at University of Toronto

Shaobang Rao, 2014 (Biostatistics), Joint with J. G. Ibrahim
Title: Statistical Analysis of Diffusion Weighted Imaging Data.
First Job: Biostatistician, Pfizer.

Xiaolei Zhou, 2015 (Biostatistics)
Title: Model Assessment for Models with Missing Data
First Job: Biostatistician, RTI.

Yang, Hojin, 2016 (Biostatistics), Joint with J. G. Ibrahim
Title: Learning Methods in Reproducing Kernel Hilbert Space Based on High-dimensional Features
First Job: Postdoctoral fellow, MD Anderson
Second Job： Assistant Professor at University of Navada

Eunjee Lee, 2016 (Statistics), Joint with J. G. Ibrahim
Title: Bayesian Analysis of Survival Models with High-dimensional Imaging and Genetic Data.

Honor: ENAR 2015 Distinguished Student Paper Awards
ASA SI 2017 Distinguished Student Paper Awards
First Job: Research Assistant Professor, University of Michigan
Second Job： Assistant Professor, Chungnam National University, Korea.

Bryant Christopher, 2016 (Biostatistics), Joint with J. G. Ibrahim
Title: Bayesian Analysis of Brain Networks
First Job: XXX

Yu Yang, 2017 (Statistics), Joint with Steve Marron
Title: Advanced Statistical Methods for Imaging Genetic Data.
Honor: ICSA 2016 Distinguished Student Paper Awards
First Job: Business Analyst in Goldman Sachs

JingWen Zhang 2018 (Biostatistics), Joint with J. G. Ibrahim
Title：Advanced Methods for discovering genetic markers associated with high dimensional imaging data.
First Job：Postdoctoral Fellow， Harvard Biostatistics

Yue Wang 2018 (Biostatistics), Joint with Ibrahim
Title：Partial least squares method for functional regression models with high dimensional neuroimaging data.
First Job：Postdoctoral Fellow， UW Biostatistics
Second Job：Assistant Professor， Arizona State University

Yufeng Leo Liu 2018 (Statistics), Joint with Yufeng Liu
Title：Advanced Statistical Learning Techniques for High-Dimensional Imaging Data
First Job：R&D，Uber at SF CA。

Chao Huang 2019 (Biostatistics)
Honor: ASA SI 2014 Distinguished Student Paper Award
Title： Advanced Statistical Learning Methods for Heterogeneous Imaging Data.
First Job: Assistant Professor at Florida State University

Fan Zhou 2019 (Biostatistics) Joint with Haibo Zhou
Title： Advanced Analysis Methods for Large-scale Structured Data.
First Job: Assistant Professor at Shanghai University of Finance and Technology
Honor: ICSA 2019 New researcher award。
UNC Bios 2020 Margolin award.

Jasmine Yang 2019 (Statistics) Joint with Steve Marron
Title：Statistical Methods for Deconvolution in Cancer Genomics
First Job: Statistician at AbbVie

Bingxin Zhao 2020（Biostatistics）
Title：Topics in high-dimensional asymptotics of ridge-type estimators.
First Job: Assistant Professor at Purdue University
Honor: ENAR 2020 Distinguished Student Paper Awards

Wang Xifeng 2021 (Biostatistics) Joint with J.G. Ibrahim
Title：Statistical Learning Methods for Diffusion Weighted Imaging

First Job: Statistician at AbbVie
Yue Shan 2021 (Biostatistics) Joint with Yun Li

North Carolina State University

Luo, Shikai (Statistics), Joint with Song, R.
Current Position: Statistician at Tercent

- **Visiting Ph.D. Students Supervised:**

Meiyan Huang (South Medical University)
Honor: ASA Imaging Section Best paper award
First Job: Assistant Professor at South Medical University

Xinchao Luo (East Normal University)
First Job: Janssen R&D in Shanghai

Wenliang Pan (Sun Yat-Sen University)
First Job: Associate Professor at Sun Yat-Sen University

Yuan Yu (Shanghai University of Finance and Econometrics)

First Job: Assistant Professor at Shangdong University of Science and Technology

Li Heng (Beijing Institute of Technology)

First Job: Assistant Professor at Southern China University Science and Technology

Hao Wang (Northeast Normal University)

First Job: Assistant Professor at Dongbei University of Finance and Economics

Youquan Pei (Shanghai University of Finance and econometrics)

First Job: Assistant Professor at Shangdong University

Ting Li (Fudan University)

First Job: Assistant Professor at Shanghai University of Finance and econometrics

Liming Zhong (South Medical University)

First Job: Assistant Professor at South Medical University

Di Xiong （Shanghai University）

Current Ph.D. Students:

University of North Carolina at Chapel Hill

Ziliang Zhu (Biostatistics) Joint with Ibrahim (on going)
Tianyou Luo (Biostatistics) (on going)
Yue Yang (Biostatistics) (on going)
Tomlinson, Chalmer Edward (Biostatistics) (on going)
Jiaorui Tang (Biostatistics) Joint with Haibo Zhou （on going）
Jie Cheng (Biostatistics) （on going）

Visiting Ph.D. Students:

Di Xiong (Shanghai University) Joint with J.G. Ibrahim

- **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.
Suprateek Kundu (Biostatistics):
Bayesian nonparametric methods for conditional distributions, 2012.
Matthew W Wheeler (Biostatistics):
Gaussian Process Mixed Membership Models 2012.
Baiming Zou (Biostatistics):
Robust and Efficient Statistical Inference for Electronic Medical Record Data and Image Data. 2013.
Verde, Audrey Rose (Neurobiology):
2014
Eldeniz, Cihat (BME)

Quantitative MR T1 measurements with TOWERS: T-One With Enhanced Robustness and Speed 2014

M.S. Committee

University of North Carolina at Chapel Hill

Jocelyn M. Beville (Orthodontics):

Three dimensional analysis of bone anchored maxillary protraction in growing class III patients. 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

Yale University

Martha Skup (2010) Visiting student from Yale University.

University of North Carolina at Chapel Hill

Xiaoyan Shi (2008-2009)
Topic: Semiparametric Methods for Neuroimaging Data.
Current Position: Senior Statistician and Software Engineer at SAS
Huang Tao (2012-2015)
Topic: Statistical Analysis of Manifold Data.
Niansheng Tang (2009, 2013)
Topic: Statistical Diagnostic Methods.
Current Position: Professor at Yunnan University, IMS Fellow
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

Ying Yuan (2011-2011)
Topic: Statistical Analysis of Imaging and Genetic Data.
Current Position: Assistant member of Biostatistics at St Johns Children's hospital
Linglong Kong (2010-2012)
Topic: Robust Methods for Neuroimaging Data.
Current Position: Associate Professor of Statistics at University of Alberta, Canada And Canada Research Chair.
Jiaping Wang (2009-2013)
Topic: Multiscale Adaptive Methods for Functional Imaging Data.
Current Position: Assistant Professor of Statistics at University of North Texas
Partha Sarathi Mukherjee (2011-2012)
Topic: Statistical Analysis of Diffusion Tensor Data.
Current Position: Assistant Professor of Statistics at Boise State University
Zhaohua Lu (2011-2013)
Topic: Dynamic Analysis of Functional Data.
First Position: Research Assistant Professor at Penn State University
Current Position: Assistant member of Biostatistics at St Johns Children's hospital
Dan Yan (2013-2014)
Topic: Statistical Analysis of Tensor Data.
Current Position: Assistant Professor at Rutgers University
Jing Chang (2012-2014)
Topic: Statistical Analysis of Imaging and Genetic Data.
Qibing Gao (2012-2013)
Topic: Diagnostic measures for functional data
Current Position: Associate Professor at Nanjing Normal University
Dan Shen (2012-2014)
Topic: Statistical Analysis of Imaging Data.
Current Position: Assistant Professor at South Florida University
Mihye Ahn (2011-2015)
Topic: Statistical Analysis of Functional Imaging Data.
Current Position: Assistant Professor at University of Navada
Max Chen (2014-2015)
Topic: Statistical Analysis of Imaging Data.
Current Position: R&D at Sandia National Laboratories
Yuai Hua (2011-2015)
Topic: Statistical Analysis of Perfusion Images.
Baiguo An (2014-2015)
Topic: Adaptive Smoothing Methods for Functional Imaging Data.
Current Position: Assistant Professor at Central China Finance University
Fangchan Xie (2014-2015)
Topic: Zero-inflated models
Current Position: Professor, Nanjing Normal University
Dehan Kong (2013-2016)
Topic: Functional Data Analysis in Neuroimaging Applications.
Current Position: Assistant Professor at University of Toronto.
Yize Zhao (2014-2016)

Topic: Statistical Analysis of Imaging and Genetic Data
Current Position: Assistant Professor at Weill Cornell Medicine, Cornell University.
Assistant Professor at Yale University， Biostatistics
Benjamin Risk (2015-2017)
Topic: Statistical analysis of functional MRI data.
Current Position: Assistant Professor at Emory University.
Zhengwu Zhang (2015-2017)
Topic: Shape analysis and network analysis.
Current Position: Assistant Professor at Rochester University
Assistant Professor at UNC Statistics since July 2020
Kaixuan Yu (2016-2018)
Topic: Cancer genomics analysis
Current Position: AI-Labs DiDi Chuxing
Jin Yan (2016-2018)
Topic: Cancer imaging analysis
Rongji Liu (2016-2018)
Topic: Cancer imaging and genetic analysis
Current Position: Assistant Professor at Florida State University.
Hai Shu (2016-2018)
Topic: Big data integration.
Current Position: Assistant Professor at New York University.
Ziqi Chen (2016-2018)
Topic: Cancer Imaging Analysis.
Current Position: Professor，East China Normal University
Kim, Junghi (2016-2018)
Topic: Cancer genetic analysis.
Current Position：Statistician at FDA

Current:

Tengfei Li (2015-)
Topic: Missing data in large-scale neuroimaging data analysis.
Current Position: Instructor at UNC Radiology

Contracts & Grants

Ongoing

Ongoing Research Support

1 R01MH116527 Zhang (Contact-PI) and Zhu (Co-PI) 3/1/2018-2/23/2023
Analysis of Big Data Squared in Biomedical Studies

CANSSI Collaborative Research Team Projects On Neuroimaging Data Analysis
(Nathoo and Kong) 2016-2019

Role: Co-investigator. Total Direct Cost: 180,000 Canadian Dollars

1 R01 EB021391-01A1 Panigua (PI) 11/7/2016-6/30/2020
NIH/NIBIB/Kitware, Inc.
Shape Analysis Toolbox for Medical Image Computing Projects
To maintain, expand, validate and further disseminate the SPHARM-PDM (Spherical Harmonics Point Distribution Models) toolbox, an open-source software tool that is used by the medical research community to compute and analyze models of biomedical structures for the purpose of local shape analysis. FP00000703
Role: Co-Principal Investigator

R01EB020426 (Lin, Chen, Jojic, and Zhu) 4/15/2014-4/15/2017
SCH: Proactive Health Monitoring Using Individualized Analysis of Tissue Elastic*
Role. Co-Principal Investigator. Total Direct Cost: 657,033

T32MH106440 (Zhu (primary) and Gilmore) 7/1/2015--6/30/2020
NIMH
Biostatistics and Mental Health Neuroimaging and Genomics Training Grant
Role. Co-Principal Investigator. Total Direct Cost: 1,844,696

SES-1357666 (Chow and Zhu) 9/15/2014--8/31/2017 1%
National Science Foundation
Developing Dynamic Tools for Analyzing Irregularly Spaced Longitudinal Affect Data
Role. Co-Principal Investigator. Total Direct Cost: 350,000

DMS-1407655 (Zhu) 9/15/2014--8/31/2018 2%
National Science Foundation
Advanced Statistical Methods for Functional Imaging Data.
Role. Principal Investigator. Total Direct Cost: 300,000

5 R01 MH086633-02 (Zhu) 3/1/2010--11/30/19 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: 3,300,000

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 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

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

5 R01 EB009634-04 (Shen) 9/1/2011 8/31/15
National Institute of Biomedical Imaging and Bioengine
Fast, Robust Analysis of Large Population Data
This project aims at the development, testing, and evaluation of fast, robust, and accurate group registration and statistical comparison algorithms for effective simultaneous processing of large sets of brain images; to enable the detection of tiny, complex group differences. Role: Co-Investigator

5 R01 EB006733-06 (Shen) 9/1/2012 8/31/16
National Institutes of Health
Development and Dissemination of Robust Brain MRI Measurement Tools
In the renewal phase of this project, we will continue to work with GE Research to develop and disseminate a software package for brain measurement, comparison, and diagnosis. Role: Biostatistician

5 R01 MH100217-02 (Shen) 8/26/2013 7/31/17
National Institutes of Health
Infant Brain Measurement and Super-Resolution Atlas Construction
This project shoulders the challenging task of overcoming important technological hurdles in creating high precision computational tools that will automate the quantification of brain development in the first year of life.
Role: Co-Investigator

5 R01 AG042599-02 (Liu) 9/1/2013 5/31/18
University of Georgia
Assessing Large-Scale Brain Connectivities in Mild Cognitive Impairment
The goal of this subcontract project is to develop, validate and apply novel computational algorithms to elucidate the hypothesized widespread pathological alternations in the brain networks of MCI/AD.
Role: Biostatistician

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

2 R01 HD053000-06A1 (Gilmore) 9/1/2013-- 8/31/18
National Institutes of Health
Early Brain Development in One and Two Year Olds
With previous grant support, we have developed a unique and valuable cohort of normal children. In this application, we propose to follow this unique cohort through age 6 years, to better understand normal structural brain development, its relationship to cognitive function, and the predictive ability of neonatal brain structure for subsequent brain development. Role: Co-Investigator

5 R01 DE024450-02 (Cevidanes) 9/10/2013-- 8/31/17
University of Michigan

Quantification of 3D Bony Changes in Temporomandibular Joint Osteoarthritis
The intent of this proposal is to establish robust imaging shape biomarkers for the diagnosis and assessment of the progression of Temporomandibular Joint (TMJ) in deseases of arthritic origin. Role: Biostatistician

5 UL1 TR001111-02 (Runge) 9/26/2013-- 4/30/18
National Center for Advancing Translational Sciences
North Carolina Translational & Clinical Sciences Institute (NC TraCS) - Biostatistic Services
NC TraCS will work to improve human health by accelerating clinical and translational research from health science discovery to dissemination to patients and communities. Role: Biostatistician

1 U01 MH110274-01 (Lin) 6/1/16 3/31/20
National Institutes of Health
UNC/UMN Baby Connectome Project
This hybrid longitudinal and cross-sectional design enables detailed characterization of early brain development from both brain structural/functional and behavioral aspects, balances between advantages offered by a longitudinal design and attribution rate, and accommodates the relatively short funding duration. We will integrate all of these novel pediatric imaging analysis tools onto HCP pipelines. Role: Co-Investigator

1 R01 MH111429-01 (Shih) 1/1/17 12/31/21
National Institute of Mental Health
Chemogenetic Dissection of Neuronal and Astrocytic Compartment of the BOLD Signal

This project aims to investigate whether and how neurons and astrocytes mediate blood-oxygenationlevel-dependent (BOLD) functional magnetic resonance imaging (fMRI) signal, a technique that has been widely used to probe brain functional activity and connectivity in humans. Role: Co-Investigator

1 U01 CA189281-01A1 (Demore) 7/17/2015 6/30/18
National Cancer Institute
Improving Breast Ultrasound Specificity through SFRP2 Targeted Molecular Imaging
We have generated an SFRP2 molecularly targeted microbubble contrast agent that can be visualized with ultrasound. We hypothesize that SFRP2-directed imaging will be a useful tool to enhance early non-invasive detection of breast cancer by ultrasound. Role: Co-Investigator

1 R01 DK108231-01 (Branca) 9/25/2015 8/31/20
National Institute of Diabetes and Digestive and Kidney Diseases

Sensitive and Specific detection of BAT Tissue and Activity by Magnetic Resonance with Hyperpolarized Xe-129
This study will validate a new research tool that will enable us to non-invasively assess BAT presence in a larger number of human subjects and to accurately characterize its function. Role: Co-Investigator

Completed Research Support

1 R03 DA036645-01A1 (Grewen) 7/1/2014 6/30/15
National Institutes of Health
Prenatal Cocaine Exposure and Resting Functional Connectivity in Infants
The objective of this proposal is to quantify the effects of PCE on functional connectivity in a pre-existing dataset from 90 infants, aged 2-6 weeks, in which cocaine-related prefrontal and frontal cortical gray matter loss has already been determined. Role: Co-Investigator

5 R01 AG041721-03 (Shen) 8/1/2012 5/31/15
National Institute on Aging
Quantifying Brain Abnormality by Multimodality Neuroimage Analysis
The goal of this project is to develop a novel neuroimaging analysis framework that will harness the complementary information from different imaging modalities for effective quantification of disease-induced pathologies, so as to promote early detection for possible treatment and prophylaxis. Role: Co-Investigator

5 R01 MH092335-04 (Santelli) 7/1/2011 4/30/16
E. K. Shriver National Institute of Child Health and H
Genome-wide Identification of Variants Affecting Early Human Brain Development
The primary objective of the current application is to use cutting-edge techniques in genomics to identify common and rare genetic variants which impact brain development in the early postnatal period, an extremely dynamic time which may be critical in the etiology of psychiatric illnesses. Role: Co-Investigator

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

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

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- Principal Investigator Total Direct Cost: 423,802

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 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

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 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

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

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 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

OVERLAP

NONE

Bibliography

Peer-reviewed Books and Chapters

1. Cheng, J. and Zhu HT. (2016). Diffusion Magnetic Resonance Imaging (dMRI). In *Handbook of Neuroimaging Data analysis*. Edited by Ombao, H., Lindquist, M., Thompson,W. and Aston, J. Chapman & Hall/CRC, 65-107.
2. 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. Muller, D. Sun, and K. Ye). New York: Springer. pp.219-236.
3. 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.
4. 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.
5. 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.
6. 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 (Annals of Statistics, Journal of American Statistical Association, Biometrika, and Journal of Royal Statistical Society Series B are the top four statistical journals; Biometrics and Annals of Applied Statistics are the very best applied statistical journals.)

7. Meiling Hao, Lianqiang Qu, **Dehan Kong,** Liuquan Sun, and Hongtu Zhu. Optimal Minimax Variable Selection for Large-Scale Matrix Linear Regression Model. *Journal of Machine Learning Research*, in press, 2021.
8. Pietrosanu, Matthew; Shu, Haoxu; Jiang, Bei; Kong, Linglong; Heo, Giseon; He, Qianchuan; Gilmore, John; Zhu, Hongtu Estimation for the bivariate quantile varying coefficient model with application to diffusion tensor imaging data analysis. *Biostatistics*, in press, 2021.
9. Shurong Zheng, Zhidong Bai, Jianfeng Yao, and Hongtu Zhu. CLT for linear spectral statistics of large dimensional sample covariance matrices with dependent data, *Statistical Paper*, in press, 2021.
10. **Yang, H**., Zhu, H., **Ahn, M.,** and Ibrahim, J.G . Weighted functional linear Cox regression model. *Statistical Methods in Medical Research*, in press, 2021.
11. **Zhang, Z.W.,** Wang, X., Kong, L., and Zhu, H. T. High-dimensional quantile function-on-scalar regression. *Journal of American Statistical Association*, in press, 2021.
12. **Liu, R.J.,** and ***Zhu, H.T.*** Statistical disease mapping for heterogeneous neuroimaging studies (with discussions). *The Canadian Journal of Statistics*, in press, 2021.
13. **Feng, X., Li, T.,** Song, X. and ***Zhu, H. T.*** Bayesian Scalar on Image Regression with Non-ignorable Non-response. *Journal of American Statistical Association*, in press, 2020.
14. **Li, T., Li, T.F.,** Zhu, Z.Y., and Zhu, H.T. Regression Analysis of Asynchronous Longitudinal Functional and Scalar Data, *Journal of American Statistical Association*, in press, 2020.
15. Xiaoqing Wang, Xinyuan Song, and Hongtu Zhu. Bayesian Latent Factor on Image Regression with Nonignorable Missing Data. *Statistics in Medicine*, in press, 2020.
16. **Kim, J.,** Zhu, H., Wang, X. and Do, K. Scalable network estimation with L0 penalty. *Statistical Analysis and Data Mining*. In press, 2020. Best Paper.
17. **Pan, W.,** Wang, X., Zhang, H., Zhu, H., and Zhu, J. Ball Covariance: A Generic Measure of Dependence in Banach Space. *Journal of American Statistical Association*, in press, 2020.
18. **Wang, J.,** Ibrahim, J. G., and ***Zhu, H.T.*** Partial least squares for functional joint models with applications to the Alzheimer's disease neuroimaging initiative study. *Biometrics* 76 (4), 1109-1119, 2020.
19. **Kong, D. H.,** An, B. G., Zhang, J. W., and ***Zhu, H.*** L2RM: Low-rank Linear Regression Models for High-dimensional Matrix Responses. *Journal of American Statistical Association*, in press, 2020.
20. **Shu, H.**, Wang, X. and ***Zhu, H.*** D-CCA: A Decomposition-based Canonical Correlation Analysis for High-Dimensional Datasets. *Journal of American Statistical Association*, in press, 2020.
21. **Liu, Y.F.,** Liu, Y. F., and ***Zhu, H.*** MCNN: Masked Convolutional Neural Network for Supervised Learning Problems. *Stat.* in press, 2020.
22. KY Bak, KR Kim, PT Kim, JY Koo, C Park, H Zhu. Nonparametric matrix regression function estimation over symmetric positive definite matrices. *Journal of the Korean Statistical Society*, 1-23, 2020.

23. **Zhao, P. Y.,** Tang, N. S., and Zhu, H.T. Generalized Empirical Likelihood Inferences for Nonsmooth Moment Functions With Nonignorable Missing Values. *Statistica Sinica*, 30， 217-249，2020.
24. S. R. Zheng, G. Chen, J. Guo, and ***H. Zhu***. Test Statistics for High Dimensional Correlation Matrices. *Annals of Statistics*, 47, 2887-2921， 2019.
25. **Chen, Z. Q., Gao, Q. B.**, Fu, B. and ***Zhu, H***. Monotone Nonparametric Regression for Functional/Longitudinal Data. *Statistica Sinica*, **29，** 2229-2249，2019.
26. **Kang，K.,** Song, X. Y., Hu, X. J., and Zhu, H.T. Bayesian adaptive group lasso for semiparametric hidden Markov models. *Statistics in Medicine*, 38，1634-1650， 2019.
27. **Pan, W.,** Wang, X.Q., Xiao,W. and ***Zhu, H.T.*** A Generic Sure Independence Screening Procedure. *Journal of American Statistical Association*, 114，928-937， 2019.
28. H. Ma, **T. Li,** H. Zhu, and Z. Zhu. Quantile regression for functional partially linear models in high dimensions. *Computational Statistics and Data Analysis*, In press, 129， 135-146， 2019.
29. **Luo, S.,** Song, R., Gilmore, J., Stynder, M., and ***Zhu, H.T.*** FSEM: Functional Structural Equation Models for Twin Functional Data. *Journal of American Statistical Association*, 114, 344-357, 2019.
30. **Sun, Q.**, ***Zhu, H.T***., Ibrahim, J.G. Hard Thresholding Regression, *Scandinavian Journal of Statistics*, 46, 314-328, 2019.
31. ***Zhu, H.T.,*** Chen, **Luo, X., Yuan, Y.**, and Wang, J. L. FMEM: Functional Mixed Processes Models for Longitudinal Functional Responses. *Statistica Sinica*, 29, 2007-2033, 2019.
32. **Tengfei Li, Fengchang Xie, Xiangnan Feng,** Joseph G. Ibrahim, ***Hongtu Zhu*** Functional linear regression models for non-ignorable missing scalar responses. *Statistica Sinica*, 28， 1867-1886， 2018.
33. **H. Yang,** ***H. Zhu***, and J.G. Ibrahim. MILFM: multiple index latent factor model based on high-dimensional features. *Biometrics*, 74，834-844， 2018.
34. **Miranda, M. F.,** ***Zhu, H.T.,*** and Ibrahim, J.G. TPRM: Tensor partition regression models with applications in imaging biomarker detection. *Annals of Applied Statistics*, 29，1422-1450, 2018.
35. **D. Kong**, Ibrahim, J. G., **Lee, E.J**. and ***Zhu, H.T***. FLCRM: Functional Linear Cox Regression Model. *Biometrics*, 74， 109-117， 2018.
36. Tang, M. L. Tang, N.S., **Zhao, P.Y.** and ***Zhu, H.T.*** Imputation Methods and Efficient Estimation for Linear Models with Missing Responses. *Scandinavian Journal of Statistics*, 45， 366-381， 2018.
37. Tang, A.M., Tang, N.S., and Zhu, H.T. Influence analysis for skew-normal semiparametric joint models of multivariate longitudinal and multivariate survival data. *Statistics in Medicine*, 36， 1476-1490，2017.
38. ***Zhu, HT.,*** **Shen, D.**, Peng, X. W. and Leo Liu YF. MWPCR: Multiscale weighted principal component regression for high-dimensional prediction. *Journal of American Statistical Association*, 112, 1009-1021, 2017.

39. **C. Bryant**, ***Zhu, H.T.*****, Mihye Ahn**, Joseph G Ibrahim. LCN: A Random Graph Mixture Model for Community Detection in Functional Brain Networks. *Statistics and Its Interface*, 10, 369-378, 2017.
40. **Lin, L., Thomas, B. S.,** Zhu, H.T. and Dunson, D. B. Extrinsic local regression on manifold-valued data. *Journal of American Statistical Association*, 112, 1156-1168, 2017.
41. Wang, X. and Zhu, H.T. Generalized scalar-on-image regression models via total variation. *Journal of American Statistical Association*, 112,1156-1168, 2017.
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