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# Ana-Maria Staicu

CURRICULUM VITAE

August 21, 2020

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## Education

- 2007-2009 Brunel Postdoctoral Research Fellow, Department of Mathematics, University of Bristol\*, UK  
Research mentors: Ciprian M. Crainiceanu, Johns Hopkins University;  
Raymond J. Carroll, Texas A&M University
- 2002-2007 Ph.D. in **Statistics**, University of Toronto, Canada  
Thesis title: *On Some Aspects of Likelihood Methods with Applications in Biostatistics*  
Ph.D Supervisor: Nancy Reid
- 2001-2002 M.Sc. in **Statistics**, University of Toronto, Canada
- 1996-2000 B.Sc. in **Mathematics**, University of Bucharest, Romania  
Thesis title: *Perfect Graphs*, Thesis Supervisor: Dragos Popescu
- 1997-2000 Department of Finance, Insurance, Banks and Stock Exchanges (FABBV),  
Academy of Economic Studies, Romania

## Employment

- 2020- Professor, Department of Statistics, North Carolina State University, USA
- 2015-2020 Associate Professor, Department of Statistics, North Carolina State University, USA
- 2009-2015 Assistant Professor, Department of Statistics, North Carolina State University, USA
- 2007-2009 Research Associate, Department of Mathematics, University of Bristol\*, UK  
\*Full time, independent research position in the Statistics Group
- 2001-2007 Teaching Assistant, Department of Statistics, University of Toronto, CA
- 2003-2004 Sessional Lecturer, Department of Statistics, University of Toronto, CA
- 2015-2016 Invited Associate Professor, Department of Mathematics and Computer Science,  
Babes-Bolyai University, Romania

## Research Interests

Functional Data Analysis, Longitudinal Data Analysis, Nonparametric regression, Statistical inference, Likelihood methods. Applications in brain imaging studies, wearable computing, environmental, and animal science studies.

## Editorial Services

- Associate Editor: *JABES* (2019-present)
- Associate Editor: *Stat* (2012-2019)
- Associate Editor: *JASA T&M* (2015-2017)
- Associate Editor: *Biometrics* (2011-2017)
- Guest Associate Editor: *Statistica Sinica*
- Reviewer for *Annals of Applied Statistics*, *Biometrics*, *Biometrika*, *Biostatistics*, *Canadian Journal of Statistics*, *Electronic Journal of Statistics*, *JASA*, *Journal of Multivariate Analysis*, *Journal of Statistical Planning and Inference*, *Scandinavian Journal of Statistics*, *JRSSB*, *JRSSC*, *Sankhya B*, *Statistics in Biosciences*, *Statistics in Medicine*, *Statistical Methodology*, *The American Statistician*.
- Grant proposal external reviewer: NSA Mathematical Sciences Grant Program (2012, 2014)
- NSF, DMS: 2014/15, 2015/16
- NSF, Ad hoc reviewer: April 2017 (MMS), Nov 2017 (DMS)
- NIH, BMRD study section: February 2017
- Book reviewer for CRC Press (2012), Chapman & Hall/CRC Press (2014)

## Memberships

American Statistical Association; International Biometric Society Eastern North American Region; American Association for the Advancement of Science.

Other research associations include:

Statistical Methods and Applications for Research in Technology (SMART) of Johns Hopkins U;

Penn Statistical Imaging and Visualization Endeavor (PennSIVE) of U of Pennsylvania;

Neuroscience at NC State University of J. Meitzen (from Biological Sciences).

## Publications (asterisk indicates PhD student under my supervision)

1. Stallings, J., Islam\*, M.I., **Staicu, A.M.**, Crouch, D., Pan, L., and Huang, H. (2020). Functional variable selection for EMG-based control of a robotic hand prosthetic. *Annals of Applied Statistics*, to appear.
2. **Staicu, A.M.**, Islam, M.\*, Dumitru, R.A., and van Heugten, E. (2020) Longitudinal dynamic functional regression. *Journal of the Royal Statistical Society Series C*, **69** 25-46.
3. Hazra\*, A., Reich, B.J., **Staicu, A.M.** (2019) A multivariate spatial skew-t process for joint modeling of extreme precipitation indexes. *Environmetrics*, to appear.
4. Singh\*, S.P., **Staicu, A.M.**, Dunn, R.R., Fierer, N., and Reich, B.J. (2019) A nonparametric spatial test to identify factors that shape a microbiome. *Annals of Applied Statistics*, **13** 2341–2362.
5. Park\*, S.Y., Li\*, C., Mendoza, S.M., van Heugten, E., and **Staicu, A.M.** (2019) Conditional analysis for mixed covariates, with application to feed intake of lactating sows. *Journal of Probability and Statistics*, Special issue of *Quantile Regression and Beyond in Statistical Analysis of the Data*, to appear.
6. Chen\*, S.T., Xiao, L., and **Staicu, A.M.** (2019) A Smoothing-based goodness-of-fit test of covariance for functional data. *Biometrics*, **75** 562–571.

7. Geden, M., **Staicu, A.M.**, Feng, J. (2019) Reduced target facilitation and increased distractor suppression during mind wandering. *Experimental psychology*, **65** 345–352.
8. Laber, E.B. and **Staicu, A.M.** (2018) Functional feature construction for individualized treatment regimes. *Journal of the American Statistical Association*, **523**, 1219–1227.
9. King\*, M.C., **Staicu, A.-M.**, Davis, J.M., Reich, B.J., and Eder, B. (2018) A functional data analysis of spatiotemporal trends and variation in fine particulate matter. *Atmospheric Environment*, **184**, 233–243.
10. Kim\*, J., Maity., and **Staicu, A.M.** (2018) Additive nonlinear functional concurrent model. *Statistics and its Interface*, **11**, 669–685.
11. Park\*, S.Y., Xiao, L., Wilbur, J.D., **Staicu, A.M.**, and Jumbe, N.L. (2018) A joint design for functional data with application to scheduling ultrasound scans. *Computational Statistics and Data Analysis* **122**, 101–114. 2016 ICSA Student Paper Award/ 2017 ENAR Distinguished Student Paper Award
12. Kang, J., Reich, B.J., and **Staicu, A.M.** (2018) Scalar-on-image regression via the soft-thresholded Gaussian process *Biometrika*, **105**, 165–184.
13. Reich, B.J., Guinness, J., Vandekar, S., Shinohara, R., and **Staicu, A.M.** (2018) Fully-Bayesian spectral methods for imaging data. *Biometrics*, **74**, 645–652.
14. Geden, M., **Staicu, A.M.**, and Feng, J. (2018) The impacts of perceptual load and driving duration on mind wandering in driving. *Journal: Transportation Research Part F: Psychology and Behaviour*, **57** 75–83.
15. Kim\*, J., **Staicu, A.M.**, Maity., A., Carroll, R.J., and Ruppert, D. (2018) Additive function-on-function regression. *Journal of Computational and Graphical Statistics*, **27**, 234–244.
16. Tekbudak\*, Y.M., Cordoba, M.A., Maity, A., and **Staicu, A.M.** (2018) A comparison of testing methods in scalar-on-function regression. *Advances in Statistical Analysis*, 1–26.
17. Park\*. , S.Y., **Staicu, A.M.**, Xiao, L., and Crainiceanu, C.M. (2018) Simple fixed-effects inference for complex functional models. *Biostatistics*, **19** 137–152.
18. Hazra, A\*. , Reich, B.J., Reich, D.S., Shinohara, R.T., and **Staicu, A.M.** (2017) A spatio-temporal model for longitudinal image-on-image regression *Statistics in Biosciences* 1–25
19. Gruen, M.E., Alfaro-Córdoba\*, M., Thompson, A.E., Worth, A., **Staicu, A.M.**, and Lascelles, B.D. (2017) The use of functional data analysis to evaluate activity in a spontaneous model of degenerative joint disease associated pain in cats. *PLOS ONE*, **12**, e0169576.
20. Pomann\* G.-M., **Staicu, A.M.**, Lobaton, E., Mejia, A., Dewey, B., Reich, D.S., Sweeney, E., and Shinohara R. (2016) A lag functional linear model for prediction of magnetization transfer ratio in multiple sclerosis. *Annals of Applied Statistics*, **10**, 2325–48.
21. Gertheiss, J., Goldsmith, J., and **Staicu, A.M.** (2016) A note on modeling sparse exponential-family functional response curves. *Computational Statistics and Data Analysis* **105**, 46–52.
22. Kong\*, D., **Staicu, A.M.** and Maity, A. (2016) Classical testing in functional linear models. *Journal of Nonparametric Statistics* **28**, 813–838.
23. Zhang\*, Y., **Staicu, A.M.**, and Maity, A. (2016) Testing for additivity in nonparametric regression. *The Canadian Journal of Statistics* **44**, 445–462.
24. Wrobel, J., Park\* S.Y., **Staicu, A.M.**, and Godsmith, J. (2016) Interactive graphics for functional data analyses *Stat* **5** 108–118.
25. Usset\*, J., **Staicu, A.M.**, and Maity, A. (2016) Interaction models for functional regression. *Computational Statistics & Data Analysis* **94**, 317–329.
26. Pomann\*, G.-M., **Staicu, A.M.**, and Ghosh, S. (2016) A two sample distribution-free test for functional data with application to a diffusion tensor imaging study of Multiple Sclerosis. *Journal of the Royal Statistical Society Series C*, **65**, 395–414.

27. Park\*, S.Y. and **Staicu, A.M.** (2015) Longitudinal functional data analysis. *Stat* **4**, 212-226.
28. Gertheiss, J., Maier, V., Hessel, E.F., and **Staicu, A.M.** (2015) Marginal functional regression models for analyzing the feeding behavior of pigs. *Journal of Agricultural, Biological, and Environmental Statistics* **20**, 353–370.
29. Usset\*, J., Maity, A., **Staicu, A.M.**, and Schwartzman, A. (2015) Glacier terminus estimation from LandSat images. *Journal of Agricultural, Biological, and Environmental Statistics* **20**, 279–298..
30. Pomann\*, G.-M., Sweeney, E.M., Reich, D.S., **Staicu**, **A.M.**, and Shinohara, R.T. (2015) Scan stratified case-control sampling for modeling blood-brain barrier integrity in Multiple Sclerosis. *Statistics in Medicine* **34**, 2872–2880. (Equal author contribution.)
31. Li\*, M., **Staicu, A.M.**, and Bondell, H. (2015) Incorporating covariates in skewed functional data models. *Biostatistics* **16**, 413-426.
32. Zhao, N., Bell, D.A., Maity, A., **Staicu, A.M.**, Joubert, B.R. London, S.J., Wu, M.C. (2015) Global analysis of methylation profiles from high resolution CpG data. *Genetic Epidemiology* **39**, 53-64.
33. Ivanescu, A.E., **Staicu, A.M.**, Scheipl, F., and Greven, S. (2015) Penalized function-on-function regression. *Computational Statistics* **30**, 539-568.
34. **Staicu, A.M.**, Lahiri, S.N. and Carroll, R.J. (2015) Significance tests for functional data with complex dependence structure. *Journal of Statistical Planning and Inference* **156**, 1-13.
35. **Staicu, A.M.** and Lu, X. (2014) Analysis of AneuRisk65 Data: Classification and curve registration. *Electronic Journal of Statistics. Special edition* **8**,1914–1919.
36. Scheipl, F., **Staicu, A.M.**, and Greven, S. (2015) Functional additive mixed models. *J Computational Graphical Statistics* **24**, 477-501.
37. McLean, M., Hooker, G., **Staicu, A.M.**, Scheipl, F., and Ruppert, D. (2014) Functional generalized additive models, *J Computational Graphical Statistics*, **23**, 249–269.
38. **Staicu, A.M.**, Li, Y., Crainiceanu C.M. and Ruppert, D. (2014) Likelihood ratio tests for dependent data with applications to longitudinal and functional data analysis. *Scandinavian Journal of Statistics*, **41**, 932–949.
39. Serban N., **Staicu, A.M.**, and Carroll, R.J. (2013) Multilevel cross-dependent binary longitudinal data. *Biometrics*, **69**, 903–913.
40. Gertheiss, J., Maity, A., and **Staicu, A.M.** (2013) Variable selection in generalized functional linear model. *Stat*, **2**, 86–101.
41. Crainiceanu, C.M., **Staicu, A.M.**, Ray, S., and Punjabi, N.M. (2012) Bootstrap-based inference on the difference in the means of two correlated functional processes, *Statistics in Medicine*, **31**, 3223–3240.
42. Crainiceanu, C.M. and **Staicu, A.M.** (2012) Comments on "Clustering random curves under spatial interdependence with application to service accessibility" by H. Jiang and N. Serban, *Technometrics*, **54**, 120–122.
43. **Staicu, A.M.**, Crainiceanu, C.M., Reich, D.S., and Ruppert, D. (2012) Modeling functional data with spatially heterogeneous shape characteristics, *Biometrics*, **68**, 331–343.
44. **Staicu, A.M.** (2010) On the equivalence of the prospective and retrospective likelihood methods in case-control studies. *Biometrika* **97**, 990–996.
45. Fraser, A.M., Fraser, D.A.S. and **Staicu, A.M.** (2010) The second order ancillary: A differential view. *Bernoulli* **16**, 1208–1223.
46. **Staicu, A.M.**, Crainiceanu C.M. and Carroll, R.J. (2010) Fast analysis of spatially correlated multilevel functional data. *Biostatistics* **11**, 177–194.
47. **Staicu, A.M.** and Fraser, D.A.S. (2010) The second order ancillary is rotation based. *Journal of Statistical Planning and Inference* **140**, 831–836.

48. Crainiceanu C.M., **Staicu, A.M.** and Di, C. (2009) Generalized multilevel functional regression. *Journal of the American Statistical Association* **104**, 1550–1561.
49. **Staicu, A.M.** (2009) Higher order approximations for interval estimation in binomial settings. *Journal of Statistical Planning and Inference* **139**, 3393–3404.
50. **Staicu, A.M.** and Reid, N. (2008) On probability matching priors. *The Canadian Journal of Statistics* **36**, 613–622.

## Book chapter

- Xu, Z., Laber, E.B., and **Staicu, A.M.** (2019) Hierarchical continuous time hidden Markov model, with application in zero-inflated accelerometer data. In *Statistical Modeling for Biomedical Research: Contemporary Topics and Voices in the Field, Emerging Topics of Statistics and Biostatistics Book Series*, Springer

## Submitted/Under review

- Chen\*, S., Xiao, L., and **Staicu, A.M.** Model testing for generalized scalar-on-function linear models Submitted
- Singh\*, S., Cui, C., **Staicu, A.M.**, and Reich, B.J. Bayesian variable selection for high-dimensional ranked microbiome data. Submitted
- Xu, Z.\*, Laber, E.B., and **Staicu, A.M.** Modeling high-frequency activity data: lessons from the arthritic cat.
- Hazra\*, A., Reich, B.J., Shaby, B.A., and **Staicu, A.M.** A semiparametric Bayesian model for spatiotemporal extremes.
- Roy\*, A., Reich, B.J., Guinness, J., Shinohara, R.T., and **Staicu, A.M.** Spatial shrinkage via the product independent Gaussian process prior.
- Li\*, M., Wang\*, K., Maity, A. and **Staicu, A.M.** Inference in functional linear quantile regression.
- Battagliola\*, M.L., Sørensen, H., Tolver, A., and **Staicu, A.M.** A bias-adjusted estimator in quantile regression for clustered data.
- Xu\*, Z., Laber, E.B., and **Staicu, A.M.** Latent-state models for precision medicine
- Oh\*, S., **Staicu, A.M.**, and Maity, A. Significance testing for time-varying covariate effect in longitudinal functional data

## Other publications

- **Staicu, A.M.** (2017) Interview with Nancy Reid. *International Statistical Review*.
- Tidemann-Miller\*, B.A., Reich, B., and **Staicu, A.M.** (2014) Modeling multivariate mixed-response functional data <http://arxiv.org/abs/1601.02461>
- **Staicu, A.M.** (2007) *On some aspects of likelihood methods with applications in Biostatistics*. Ph.D. Dissertation. University of Toronto, Canada: 1-208
- **Staicu, A.M.** (2005) Applications of higher order inference: case-control studies. *Proceedings, SOSGSSD Conference*. <http://www.math.yorku.ca/sosgssd>
- **Nicola, A.M.** (2000) *Perfect graphs*. Honours Dissertation. University of Bucharest, Romania: 1-74

## Conference Talks and Seminars

- Coming up: *JSM* August, 2020
- *ENAR* Functional principal component analysis for spatially-indexed functional data in a fixed spatial domain. March, 2020
- Département de sciences de la décision, HEC Montreal. CA, Longitudinal functional regression: tests of significance January 2020.
- Department of Statistics, USC. , Longitudinal functional regression: tests of significance. October 2019.
- *ICSA*, Raleigh, NC. Tests of significance for time-varying covariate effect in longitudinal functional data. June 2019.
- Department of Statistics and Operations Research, UNC. Longitudinal dynamic functional regression: modeling and inference. December 2018.
- Workshop on Higher-Order Asymptotics and Post-Selection Inference, St Louis. Variable selection in functional linear model with varying smooth effects, September 2018
- *JSM*, Vancouver, BC. Longitudinal dynamic functional regression: modeling and inference. July, 2018
- Department of Biostatistics, University of Washington, Seattle. Variable selection in functional linear model with varying smooth effects. May 2018.
- Department of Mathematics and Statistics, University of Old Dominion, Norfolk. Variable selection in functional linear model with varying smooth effects. April 2018.
- *ENAR*, Atlanta, GA. Spectral methods for image regression. March, 2018
- *SAMSI: Astronomy Program Transition Workshop* Raleigh, NC, May 2017
- *Third Annual Statistical Methods in Imaging conference* Pittsburgh, PA, May 2017
- *Celebration of the 40th anniversary of the Department of Statistical Science, University of Toronto*, Toronto, ON, Canada. April 2017
- *SAMSI* Durham NC. Tutorial on functional data analysis. April 2017
- *ENAR*, Washington, DC. Additive function-on-function regression. March, 2017
- *Faculty in Action* Seminar Series. College of Science. NCSU. November 2016
- *SMART* Structural Imaging. A spatio-temporal regression model for MTR in relation to MS. October 2016
- *JSM*, Chicago, IL. Longitudinal Functional Data Analysis. (invited, Highlights from the journal *STAT*). August, 2016
- *JSM*, Chicago, IL. Roundtable discussion chair: Computational challenges in neuroimaging data. August, 2016
- *IBC* Victoria VA Canada. Scalar-on-Image Regression via Soft-Thresholded Gaussian Processes. July 2016
- *IBC* Victoria VA Canada. Inference for fixed effects in dependent functional data. July 2016
- Department of Mathematical Science, University of Copenhagen, Denmark. New directions in longitudinal functional data analysis. June, 2016
- Measurement Error and Complex Data Workshop, College Station, TX. Longitudinal functional data analysis. April, 2016
- Department of Biostatistics and Bioinformatics, Applied Biostatistics Core Series, Duke University School of Medicine. Diffusion tensor imaging study of MS - an illustration of a two sample distribution-free test for functional data. March 22 2016.

- *ENAR*, Austin, TX. Modern analysis of longitudinal functional data. March, 2016
- CMStatistics 2015, London, UK. Functional quantile regression. Dec 12-14, 2015
- 2015. Department of Statistics, Ohio State University. Longitudinal functional data analysis. (Dec 1)
- 2015. SAMSI Undergraduate workshop on computational neuroscience. A primer on diffusion tensor imaging study of Multiple Sclerosis. (October 19)
- 2015. Biometrics Research department, Merck, New Jersey. From longitudinal data analysis to longitudinal functional data analysis. (October 9)
- Department of Biostatistics, Columbia University. Longitudinal functional data analysis. October 1, 2015
- Workshop on Recent Developments in Statistics for Complex Dependent Data, Loccum, Germany, August 27–30 2015.
- Workshop on Frontiers in Functional Data Analysis at the Banff International Research Station, CA, June 28–July 03 2015.
- SSC, Halifax CA. Testing for Additivity in Nonparametric Regression. June 14–17 2015.
- Statistical Methods in Imaging, Ann Arbor MI. Scalar-on-Image Regression via Soft-Thresholded Gaussian Processes. May 28-29 2015
- Department of Statistical Sciences and Operations Research, Virginia Commonwealth University, VA, USA. April, 2015
- Department of Statistics, Texas A&M University. College Station, TX, USA. October, 2014
- Department of Statistics, University of Munich. Munich, Germany. September, 2014
- *Statistische Woche 2014*, Hannover, Germany. Modeling multilevel cross-dependent binary data observed longitudinally (invited talk). September, 2014.
- *JSM*, Boston, MA. Likelihood ratio tests for multiple variance components. (invited, topic-contributed). August, 2014
- *ENAR*, Baltimore, MD. Testing hypotheses in functional linear models using classical methods. (invited talk). March, 2014
- Department of Statistics and Operations Research, The University of North Carolina at Chapel Hill. Chapel Hill, NC, USA. October, 2013
- Department of Statistics, University of South Carolina. Columbia, SC, USA. October, 2013
- *JSM* Montreal, QC, CA. Functional interaction model. (invited, topic-contributed). August, 2013
- *SAMSI: Neuroimaging data analysis*, NC. Two way interaction model with functional covariates. (invited talk). June, 2013
- *SRCOS* Louisville, KY. Functional interaction model. (invited talk). June, 2013
- *MBI Workshop: Statistics of Time Warpings and Phase Variation* Columbus, OH. AneuRisk Vascular Data: joint modeling of amplitude and phase variation. (invited talk ). November, 2012
- *International Conference on Advances in Interdisciplinary Statistics and Combinatorics*, Greensboro, NC. Penalized function-on-function regression. (invited talk). October, 2012
- *Statistische Woche 2012: Young Researchers Mini-Symposium*, Vienna Austria. Pseudo likelihood ratio tests for longitudinal and functional data analysis. (invited talk). September, 2012
- *JSM*, San Diego, CA. Pseudo likelihood ratio tests for dependent data with applications in longitudinal and functional data analysis. (invited talk). July, 2012
- *ENAR*, Washington, DC. Penalized function-on-function regression. (invited talk). April, 2012
- Department of Electrical and Computer Engineering, NCSU, Raleigh, USA. February, 2012

- Department of Mathematics and Statistics, University of Montreal, Quebec, CA. November, 2011
- Department of Statistics, University of Georgia. Athens, GA, USA. August, 2011
- Department of Biostatistics, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA. August, 2011
- *Statistical Methods for Very Large Datasets Conference 2011*, Baltimore, MD, USA. Skewed functional processes and their applications (poster). June, 2011
- *Statistical Inverse Problems in the Biosciences*, College Station, TX. Adjusting for covariate information in multilevel functional data (invited talk). May, 2011
- *ENAR*, Miami, FL. Functional data with spatially varying shape parameters (invited talk). March, 2011
- Department of Biostatistics, East Carolina University, Greenville, NC, USA. February, 2011
- *OOD: Interface Functional and Longitudinal Data Analysis*, NC, USA. Functional data with spatially varying shape parameters (invited talk). November, 2010
- SAMSI, Research Triangle Park, NC, USA. November, 2010
- *JSM* Functional data with spatially varying shape parameters (contributed topic talk). August, 2010
- Department of Biostatistics, MD Anderson Cancer Center, The University of Texas. Spatially Correlated Multilevel Functional Data. July, 2010
- *Southern Regional Council on Statistics Summer Research Conference*. Norfolk, VA, Generalized Multilevel Functional Regression (invited talk). June, 2010
- *Workshop on Functional Data Analysis*. Logan, UT, Spatially correlated multilevel functional data. Utah State University. (invited talk). May, 2010
- *Data Analysis and Statistical Foundations III*. Toronto, CA. Spatially correlated multilevel functional data (invited talk). April, 2010
- Department of Biostatistics, Columbia University. Spatially correlated multilevel functional data. April, 2010
- Department of Statistical Science, Cornell University. Spatially correlated multilevel functional data. April, 2010
- Department of Statistics and Operations Research, University of North Carolina at Chapel Hill University. Generalized multilevel functional linear models. March, 2010
- Department of Statistical Science, Duke University. Generalized multilevel functional linear models. February, 2010
- *The 57th Session of the International Statistical Institute*, Durban, South Africa. Generalized multilevel functional regression (invited talk). August, 2009
- MRC Biostatistics Unit, University of Cambridge, Cambridge, UK. Generalized multilevel functional linear models. June, 2009
- *ENAR*, San Antonio, Texas USA. Generalized multilevel functional regression. March, 2009
- Department of Pure Mathematics and Mathematical Statistics, Statistical Laboratory, University of Cambridge, Cambridge, UK. Spatially correlated multilevel functional models. January, 2009
- Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA. Spatially correlated multilevel functional models. January, 2009
- Department of Mathematical Sciences, Indiana University Purdue University Indianapolis, Indianapolis, USA. Spatially correlated multilevel functional models. January, 2009
- Department of Mathematics and Statistics, University of Montreal, Montreal, CA. Spatially correlated multilevel functional models. January, 2009



- Department of Statistics, North Carolina State University, Raleigh, USA. Spatially correlated multilevel functional models. January, 2009
- Centre for Computational Statistics and Machine Learning, University College London, London, UK. Spatially correlated multilevel functional models. December, 2008
- Department of Statistics, University of Warwick, Coventry, UK. Spatially correlated multilevel functional models. November, 2008,
- Department of Mathematics and Statistics, McGill University, Montreal, CA. Spatially correlated multilevel functional models. November, 2008
- *Joint Statistical Meetings*, Denver, Colorado USA. An approach to the analysis of spatially correlated multilevel functional data. August, 2008
- *Eleventh Meeting of New Researchers in Statistics and Probability*, Boulder, Colorado, USA. On the equivalence of the prospective and retrospective likelihood methods in case-control studies. July, 2008
- *International Biometric Conference*, Dublin, Ireland. An approach to the analysis of spatially correlated multilevel functional data. July, 2008
- Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, MD, USA. Generalized Multilevel Functional Linear Models. May, 2008
- Statistical Laboratory, University of Cambridge, UK. Equivalence of prospective and retrospective likelihood methods in case-control studies. February, 2008
- Statistics Group, University of Bristol, UK. *New Faces Seminar*. Multilevel functional analysis with application to colon carcinogenesis. November, 2007
- *The 6-th Congress of Romanian Mathematicians*, Bucharest, Romania. Small sample inference for cohort and case-control studies. July, 2007
- *Connecting Women in Mathematics Across Canada*, Toronto, Fields Institute. On the uniqueness of probability matching priors (poster). December, 2006
- *Joint Statistical Meetings*, Seattle, WA. Bayesian inference with matching priors. August, 2006
- University of Toronto, *Department of Statistics*. On the uniqueness of probability matching priors. March, 2006
- University of York. *Southern Ontario Statistics Graduate Student Seminar Days*. Applications of Higher Order Inference: Case-Control Studies. May, 2005
- University of Toronto. *Joint Statistics and Biostatistics Graduate Student Seminar Series*. Accuracy of different methods when testing a binomial parameter. November, 2004
- *Statistical Society of Canada*, Montreal, Canada. Accuracy of different methods when testing a binomial parameter. June, 2004
- University of Toronto, *Department of Statistics*. Methods for forecasting a critical day at Peterborough hospital. March, 2004
- *Statistical Society of Canada*, Halifax, Canada. Analysis of the blood pressure data set. June, 2003

## Invited Panels: work-life integration & NSF Career award

- NC-ASA Chapter Webinars. Preparing an NSF CAREER proposal. June 2019.
- NSF Career Workshop. Lessons from NSF CAREER submissions. *North Carolina State University*, NC. May 2019.
- Catalyst program: CAREER Awardee Panel, *University of North Carolina-Charlotte*, NC. June 2017.

- NSF Career Award Panel, Proposal Development Unit. Guest speaker on successful strategies in preparing NSF Career proposal. *NCSU*, Raleigh NC, March 25 2016
- Professional development workshop for the postdocs at the Statistical and Applied Mathematical Sciences Institute (SAMSI). Informal discussion on what search committees are looking for in faculty applicants. *SAMSI*, Durham NC, May 15 2015
- On NSF Career award experience. Grant Workshop, Department of Statistics. *NC State University*. May 8, 2015
- Women in Statistics Networking Meeting. *Department of Statistics, NC State University*. Informal discussion on work-life integration. October, 2012
- Preparing for faculty careers: workshop for graduate students and postdocs. *NC State University*. March, 2012

### Other Workshops/Conferences attended

- *Women in Statistics Conference*. Cary, NC. May 2014.
- *Statistical Methods for Complex Data: A conference in honor of the 60th birthday of Raymond J. Carroll*. College Station, Texas USA, March 2009
- *Future Directions in High Dimensional Data Analysis: new methodologies, new data types and new applications*. Cambridge, UK, June 2008
- *Modern Challenges of Curve Modelling: Inverse Problems and Qualitative Constraints*. Bristol, UK, November 2007
- *Joint Statistical Meeting*, ASA. Salt Lake City, USA, August 2007
- *Conference on Statistical Methods in Epidemiology and Observational Studies. In Honor of Norman E. Breslow*. Seattle, USA, August 2006
- *Workshop on Data Mining Methodology and Applications*, The Fields Institute. Toronto, Canada, October 2004.
- *Joint Statistical Meeting*, ASA. Toronto, Canada, August 2004
- *Workshop on Statistical Learning and Data Mining*, Statistical Society of Canada. Montreal, Canada, May 2004
- *Workshop on Statistical Genomics*, The Fields Institute. Toronto, Canada, September 2003
- *Workshop on Generalized Linear Mixed Effects Models*, Statistical Society of Canada. Halifax, Canada, June 2003

### Academic visits (1-2 weeks)

- SAMSI, Program on Astrostatistics, Spring 2017
- University of Copenhagen, Department of Mathematical Sciences, Denmark: 2016/06.
- Johns Hopkins University, Bloomberg School of Public Health, Department of Biostatistics: 2010/02, 2007/08, 2008/05
- Texas A&M University, Department of Statistics: 2008/11, 2009/12

## Outreach activity

- Advised NC State undergraduate student on Honors Program Capstone project (the work won the outstanding presentation at the 2020 Spring Undergraduate Research & Creativity Symposium). 2019-2020
- Advised undergraduate student from Zhejiang University, China through the GEARS program, NCSU. Summer 2020.
- Co-organizing the one year program for HS at NCSU: Data Scientists in Training 2019-2020.
- Collaboration with SMILE camp (<http://smilecamp.org/>) 2016/04 – now
- Teaching one-week course at Babes-Bolyai University, Romania. “Short course in Applied Functional Data Analysis” 2016/05
- K12 outreach: Presenter at the Career Fair Davis Drive Middle School (March 2019)
- K12 outreach: Interview (by high-school student) on the issue of increasing the female presence in STEM fields, Summer 2017. Student shadowing (W.G. Enloe Highschool in Raleigh), Spring 2017)
- Undergraduate supervision: Ruixuan Song (2016-2017), Nikita Chaudhary, Zuriya Haider (Summer 2016) Divya Lakshminarayanan (Spring 2015)

## Research Grants

NSF (grant number: MMS 2020179): *Modern Approaches for the Analysis of Social Media Data*, 2020-2023

Role/Amount: Principal Investigator / \$350,000

NIH, NCI: (grant number 5P01 CA142538-09) *Statistical methods for Cancer Clinical Trials*, 2018-2021

Role/Amount: Co-Investigator (PI: Marie Davidian, NCSU; Michael Kosorok, UNC; Kouros Owzar, Duke)/

The Danish Council for Independent Research, Natural Sciences: 2017-2020

Role/Amount: co-PI (PI: Helle Sorensen, U Copenhagen)/ DKK 2,177,699

NSF CAREER (grant number DMS: 1454942): *Next Generation Functional Methods for the Analysis of Emerging Repeated Measurements* 2015-2021

Role/Amount: PI / \$400,000

## Grants completed

NIH, NIMH: (grant number 2R01MH086633-05A1 ) *Statistical Analysis of Biomedical Imaging Data in Curved Space*, 2014-2020

Role/Amount: Co-Investigator (PI: Hongtu Zhu, MD Anderson Cancer Center)/ \$1,912,000

NIH, NINDS: (grant number 1R01NS085211-01) *Statistical methods for large and complex databases of ultra-high-dimensional imaging*, 2013-2019

Role/Amount: Co-Investigator (PI: Taki Shinohara, University of Pennsylvania)/ \$1,776,000

NCSU Faculty Research and Professional Development (FRPD) grant, 2012-2013

*Multiple Functional Linear Regression Models for Moderate and Big Data*

Role/Amount: Principal Investigator / \$2,000

NSF (grant number: DMS 1007466): *Statistical methods for spatially correlated hierarchical functional data*, 2010-2013

Role/Amount: Principal Investigator / \$125,000

NSERC Canada Graduate Scholarships (**CGS D**), 2005-2007

*Awarded to the highest-ranked PGS D applicants of Canada*

Role/Amount: Principal Investigator / CAN70,000

NSERC Postgraduate Scholarships (**PGS M**), 2003-2005

Role/Amount: Principal Investigator / CAN42,000

Ontario Graduate Scholarship (**OGS**), 2002-2003

Role/Amount: Principal Investigator / CAN15,000

## Honors and Awards

Cavell Brownie Mentoring Award, Department of Statistics, 2019

Stat Showcase Session: Interactive graphics for functional data analyses (Stat 2016) JSM 2017

NCSU Faculty Scholar Award, 2016

Stat Showcase Session: Longitudinal Functional Data Analysis. (Stat 2015) JSM 2016

NSF CAREER Award 2015

Recipient of the NCSU Thank-a-Teacher recognition program 2012, 2015, 2016

Department of Statistics Doctoral Award, University of Toronto, 2006

Teaching Assistant Award, University of Toronto. 2004

Award Certificate, Statistics Graduate Students Union, University of Toronto, 2004

NSERC Canada Graduate Scholarships, 2005

NSERC Postgraduate Scholarships, 2003

Ontario Graduate Scholarship, 2002

Merit Fellowship, University of Bucharest, 1998-2000

Entrance Scholarship, Academy of Economic Studies, 1997

Entrance Scholarship, University of Bucharest, 1996

2<sup>nd</sup> & 3<sup>rd</sup> Prize at the National Mathematical Olympiad, Romania, 1995, 1996

## Consulting Experience

2013- Faculty Advisor for the Statistical Consulting Seminar, Department of Statistics, NC State University

2003-2004 Consultant, Consulting Program, Department of Statistics, University of Toronto

## Departmental Service

- Member, Advancement Committee (2021-)
- Chair, Beach Trip Committee (2019)
- Member, Advisory Committee (2018-2021)
- Co-chair, Search Committee (2018-2019)
- Chair, Search Committee (2015-2016)
- Member, Advisory Committee (2015)
- Member, Search Committee (2014)
- Member, Written Prelim Committee (2014)
- Member, Departmental Seminar Committee (2013-2014)
- Chair, Functional Data Seminar (2013-NOW)
- Member, Big Data Committee (2012-2016)
- Member, Departmental Seminar Committee (2012-2013)
- Member, Written Prelim Committee (2012)
- Member, Awards Committee (2012-2016)
- Member, Basic Exam Committee (2012)
- Member, Statistics Department Head Search Committee (2010-2011)
- Member, Search Committee (2009-2010)
- Member, Departmental Seminar Committee (2010-2011)

## Professional Service

- Member, ENAR Nominations Committee 2020-2022
- Poster Chair, JSM 2021
- Nominations Committee, ENAR. 03/2020-02/2022
- Member Regional Advisory Board, ENAR. 01/2019-12/2021
- Organizing committee member of Junior Researchers Workshop, ENAR (2017)
- Member, Best paper award committee for the best Nonparametric Statistics Journal paper award, ASA Section on Nonparametric Statistics (2016)
- Secretary, ASA Section on Nonparametric Statistics (2014)
- Treasurer-Elect, ASA Section on Nonparametric Statistics (2013-2014)
- Member (jury), Best poster committee, ENAR 2014
- Member, Best paper award committee, ASA Section on Nonparametric Statistics 2013
- Organizer of the Invited Session, ENAR 2011, 2012, 2013, 2017
- Organizer of the Topic-Contributed Session, JSM 2010, 2015
- Coordinator of the Nonparametric and Time Series Reading Group, Department of Mathematics, University of Bristol (Winter 2008; Fall 2008-Winter 2009)
- Co-Organizer of the Southern Ontario Statistics Graduate Student Seminar Days (2007)
- Coordinator of the Informal Meeting with the weekly Seminar Speaker (2004-2005), Department of Statistics, University of Toronto
- Ph.D. Representative (2003-2004), Statistics Graduate Student Executive Committee, University of Toronto
- Co-Organizer of the Joint Statistics and Biostatistics Graduate Student Seminar Series (2003-2004), University of Toronto

## Teaching Experience

## PhD (Co-)Supervisor

Samsul Alam, Doctoral student, Statistics (expected, 2023)  
Adam Bolton, Doctoral student, Statistics (expected, 2023)  
Sukanya Bhattacharyya, Doctoral student (with B Reich), Statistics (expected, 2023)  
Salil Koner, Doctoral student, Statistics (expected, 2021)  
Maria Laura Battagliola, Doctoral student (with H Sorensen), Statistics U Copenhagen (expected, 2021)  
Alex Long, Doctoral student, Statistics (expected, 2021)  
Anthony Weishampel, Doctoral student (with W Rand), Statistics (expected, 2021)  
Merve Tekbudak, Doctoral student (with A Maity), Statistics (expected, 2020)

## PhD (Co-)Supervisor - graduated

Zekun Xu (Jack), PhD Statistics (with E Laber), Graduated in 2020  
First job: Amazon, Seattle, WA  
Stephanie Chen, PhD Statistics (with L Xiao), Graduated in 2019  
First job: Eli Lilly and Company, Indianapolis, Indiana  
Saebitna Oh, PhD Statistics (with A Maity). Graduated in 2019  
First job: Shinhan Bank, Korea  
Meredith King, PhD Statistics. Graduated in 2018  
First job: Research Associate: Northrop Grumman  
Arnab Hazra, PhD Statistics (with B Reich), Statistics. Graduated in 2018  
First job: Postdoctoral Research Associate: KAUST  
Susheela Singh, PhD Statistics (with B Reich), Statistics. Graduated in 2018  
First job: Research Associate: Youtube  
Md Islam, PhD Statistics (with J Stallings). Graduated in 2018  
First job: Research Associate: Data Science, Savvysherpa, MN  
Arkaprava Roy, PhD Statistics (with S Ghoshal). Graduated, 2018  
First job: Post-doc Duke Statistics  
Cai Li, PhD Statistics (with L. Xiao). Graduated, 2017  
First job: Post-doc NCSU Statistics  
So Young Park, PhD Statistics (graduated, Dec 2016)  
First job: Research Scientist, NeuroImaging, Eli Lilly and Company, Indianapolis, Indiana  
Janet Kim, PhD Statistics (graduated, May 2016)  
First job: Associate statistic manager, Astellas Pharma Inc., Northbrook, IL  
Gina-Maria Pomann, PhD Statistics (graduated, May 2015)  
First job: Senior Biostatistician, Duke Translational Medicine Institute, Durham, NC  
Beth Ann Tidemann-Miller, PhD Statistics (with B. Reich), (graduated, August 2014)  
First job: Statistician, Biogen Idec, Cambridge, MA

## PhD Committee Member

Steven Xu, Department of Statistics  
Matthew Austin, Department of Statistics  
An-Ting Jhuang, Doctoral student, Department of Statistics  
Chong Wang, Doctoral student, Department of Statistics  
Zhentao Tong, Doctoral student, Department of Statistics  
Michael Geden, Doctoral student, Department of Psychology  
Dan Chen, Doctoral student, Department of Statistics  
Yingzi Xu, Doctoral student, Department of Statistics

Zhou Li, Doctoral student, Department of Statistics  
Marcela Alfaro Cordoba, Doctoral student, Department of Statistics  
Merve Tekbudak, Doctoral student, Department of Statistics  
Yu Xie, Doctoral student, College of Textiles (Expected, 2016)  
Christopher C. Krut, Doctoral student, Statistics (Expected 2016)  
Han Na Lee, Doctoral student, Department of Statistics (graduated, 2016)  
Santa Mendoza Benavides, Doctoral student, Department of Animal Science (graduated, 2016)  
Kehui Wang, Doctoral student, Statistics (graduated, 2015)  
Joseph Usset, Doctoral student, Statistics (graduated, 2014)  
Ander Wilson, Statistics (graduated, 2014)  
Clemontina Alexander, Statistics (graduated, 2014)  
Xiaoshan Li, Statistics (graduated, 2014)  
Laura Boehm, Statistics (graduated, 2013)  
Bo Zhang, Statistics (graduated, 2013)  
Matthew Avery, Statistics (graduated, 2012)

### **MS Committee Member (thesis option)**

Varun Mohan, MSc student, Textile (graduated, 2011)

### **MS Chair (non-thesis option)**

Rui Zhu, Statistics, 2017  
Yue Yang, Statistics, 2017  
Wanying Ma, Statistics, 2016  
Merve Y. Tekbudak, Statistics, 2015  
Brian P. Naughton, Statistics, 2015  
Brain Gaines, Statistics, 2014  
Yang, Yue, Statistics, 2012  
Janet Kim, Statistics, 2012

### **MS Co-Chair (non-thesis option)**

Joshua Katz, Statistics, 2013  
John Ihrie, Statistics, 2013  
Manhong Choi, Statistics, 2012  
Ang Zhou, Statistics, 2012  
Runchao Jiang, Statistics, 2012  
Amanda Welter, Statistics, 2012  
Fan Wu, Statistics, 2012  
Kasturi Talapatra, Statistics, 2011  
Dehan Kong, Statistics, 2010  
Roy Siddharth, Statistics, 2010

### **Research Projects (not related to PhD thesis)**

Rebecca Thiem Doctoral student, Statistics (Spring2018 - Fall 2019)  
 Moumita Chakraborty, Doctoral student, Statistics (Summer 2015 - Winter 2016)  
 Marcela Alfaro Cordoba, Doctoral student, Statistics (Spring 2015 - Spring 2017)  
 Zhen Han, Doctoral student, Statistics (Spring 2015 - Fall 2016)  
 Kehui Wang, Doctoral student, Statistics (Winter 2013 - Summer 2015)  
 Meng Li, Doctoral student, Statistics (Fall 2012 - Summer 2015)  
 Yichi Zhang, Doctoral student, Statistics (Winter 2013 - Spring 2014)  
 Jennifer Bartsch, Doctoral student, Statistics (Winter 2013)  
 Jing Zhao, Doctoral student, Statistics (Winter 2013)  
 Wenjing Lu, Doctoral student, Statistics (Winter 2013)  
 Meng Li, Doctoral student, Statistics (Spring 2011-Spring 2013)  
 Dehan Kong, Doctoral student, Statistics (Fall 2011 - Spring 2013)  
 Kristin Linn, Doctoral student, Statistics (Fall 2011)

## Classroom instruction

### *North Carolina State University*

- STA 793: Advanced Statistical Inference (Ph D Stats), Spring 2019. Fall 2019
- STA 502: Fundamentals of Statistical Inference II (grad other majors), Fall 2018. Spring 2019. Spring 2020
- STA 437/537: Applied Multivariate and Longitudinal Data Analysis (undergrad Stat/grad other majors), Spring 2018.
- STA 515: Experimental Statistics for Engineers I (grad other majors), Fall 2016.
- STA 590: Applied Multivariate and Longitudinal Data Analysis (undergrad Stat/grad other majors), Spring 2016.
- STA 790: Applied Functional Data Analysis (PhD elective), Fall 2014.
- STA 810: Applied Functional Data Analysis (Special topic, PhD elective), Fall 2012.
- STA 372: Introduction to Statistical Inference and Regression (3rd year undergraduate level), Fall 2012, Fall 2013, Spring 2014, Fall 2015.
- STA 732: Applied longitudinal data analysis (PhD core elective), Spring 2012, Spring 2013, Spring 2014, Spring 2015.
- STA 370: Probability and Statistics for Engineers (3rd year undergraduate level), Fall 2009. Spring 2010. Fall 2010, Spring 2011, Fall 2011, Spring 2012.

### *University of Bristol*

- MATH 35610: Theory of Inference (3rd year undergraduate level), Winter 2008, Winter 2009

### *University of Toronto*

- STA 250F: Statistical Concepts (2nd year undergraduate level), Summer 2004

## Short courses

- Department of Mathematics and Computer Science, University Babes Bolyai, Applied functional data analysis (graduate level, 1 week), May 2016

## Additional Information

Language skills: English (fluent), Romanian (native), French (intermediate)  
 Personal information: Citizenship: American/Canadian/Romanian  
 Career breaks (maternity): May-August 2002, July-August 2005