

Dr Marco Geraci

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Research Interests

Statistical methods and applications for health sciences; quantile inference; random-effects models; multivariate statistics; missing data; statistical computing; R and C++ programming; spatial statistics; accelerometer data; physical activity; maternal and child health; epidemiology; pediatric oncology; Crohn's disease.

Latest Research Topics

Statistical methods: generalized Laplace mixed-effects models and convolution of normal and Laplace distributions; multiple imputation of bounded variables using conditional quantiles; discrete quantile regression; nonlinear and additive quantile regression models with random effects; quantile regression for multi-state survival models; measurement error in quantile regression with functional data; mediation analysis using quantile regression; transformations in quantile regression; applications of multivariate quantile regression.

Applied/collaborative: Intervention trials (physical activity in children, obesity and diet in adults); multi-center clinical trial on first degree relatives of Crohn's disease patients; birthweight- and head circumference for-gestational age charts in preterm infants; morbidity and mortality in preterm infants; analysis of population-based birthweights; opioids use in adults with disability and inflammatory conditions; microbiome analysis in first degree relatives of Crohn's disease patients; functional data analysis of physical activity data (energy expenditure and accelerometer data).

Computational: gradient search algorithms for linear and nonlinear quantile functions; Laplacian algorithms for nonlinear and additive quantile mixed models; Monte Carlo EM algorithm; R package `n1mm` to fit generalized Laplace mixed-effects models; R package `lqmm` to fit quantile regression models for independent and hierarchical data; add-on R package `n1qmm` to fit nonlinear mixed quantile regression models; add-on R package `aqmm` to fit additive quantile mixed models; R package `pawacc` to read, process and store bi- and tri-axial accelerometer files; R package `Qttools`, utilities for quantiles.

Education

2005 Ph.D. in Applied Statistics, University of Florence, Italy
2000 M.Sc. (*Laurea summa cum laude*) in Economics and Statistics, University of Sassari, Italy

Positions

2014 – present	Associate Professor of Biostatistics (tenured), Department of Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina, USA
2010 – 2014	Lecturer in Biostatistics (tenured Assistant Professor), Institute of Child Health, University College London, UK
2007 – 2010	Research Fellow, School of Medicine, University of Manchester, UK
2005 – 2006	Research Fellow, Arnold School of Public Health, University of South Carolina, USA
2003	Teaching Assistant, Department of Statistics, University of Florence, Italy
2001	Research Assistant, National Council for Research, Italy

Visiting Positions

Jan 2004 – Feb 2004	Visiting Scholar, Arnold School of Public Health, University of South Carolina, USA
Sept 2004 – Dec 2004	Visiting Scholar, Arnold School of Public Health, University of South Carolina, USA

Awards and Honors

2019	Italian National Qualification as Full Professor of Medical Statistics – valid until May 10, 2025 (<i>Abilitazione Scientifica Nazionale Legge 240/2010 Art.16, Professore Fascia I settore concorsuale 06/M1 Statistica Medica, Ministero dell’Istruzione, dell’Università e della Ricerca</i>)
2019	Publons Top 1% Reviewers Award for Cross-field.
2017	Publons Top 1% Reviewers Award for Multidisciplinary.
2017	The paper <i>Quantile regression for longitudinal data using the asymmetric Laplace distribution</i> (Biostatistics, 2007) is a Web of Science Highly Cited Paper : “As of July/August 2017, this highly cited paper received enough citations to place it in the top 1% of the academic field of Mathematics based on a highly cited threshold for the field and publication year.”
2017	The paper <i>Linear quantile mixed models</i> (<i>Statistics and Computing</i> , 2014) is featured as a Highly Cited Paper in the journal’s newsletter and has 3,000 downloads.
2017	Italian National Qualification as Full Professor of Statistics – valid until March 31, 2023 (<i>Abilitazione Scientifica Nazionale Legge 240/2010 Art.16, Professore Fascia I settore concorsuale 13/D1 Statistica, Ministero dell’Istruzione, dell’Università e della Ricerca</i>)
2010	Chartered Statistician, The Royal Statistical Society
2006	Outstanding Service as Post-Doctoral Fellow, Department of Epidemiology & Biostatistics, University of South Carolina, USA
2004	Visiting Scholar Scholarship Award, Department of Statistics, University of Florence, Italy
2002 – 2003	Honorary Fellow (<i>Cultore della materia</i>) in Statistics for Economists, Department of Statistics, University of Florence, Italy
2002 – 2004	Ph.D. Scholarship, Department of Statistics, University of Florence, Italy

Funding (USD = United States dollar; GBP = Pound sterling)

Funded research grants (§ intramural)

2019 – 2023	Role: Co-Investigator (PI: Beets, USC). Title: A meta-epidemiological assessment of the role of pilot studies in the design of well-powered trials – The pilot project. Funder: US National Institutes of Health (Ro1 Funding Program). Status: current. Award: USD 2,405,389.
2019 – 2024	Role: Co-Investigator (PI: Beets, USC). Title: Reducing health disparities in childhood obesity using financial incentives in low-income African American households. Funder: US National Institutes of Health (Ro1 Funding Program). Status: current. Award: USD 3,628,423.
2019 – 2020	Role: Co-Investigator (PI: Boghossian, USC). Title: Racial/ethnic disparities in care practices, outcomes, and hospital transfer among infants born at 22-29 weeks gestation. Funder: US National Institutes of Health (Ro3 Funding Program). Status: current. Award: USD 146,500.
2019 [§]	Role: Principal Investigator. Title: Supporting grant for visiting scholar. Funder: USC Office of the Provost's Internal Grant Programs (Visiting Scholars Grant Program). Status: ended. Award: USD 7,500.
2017 – 2019	Role: Co-Investigator and lead statistician (PI: Sorrentino, Virginia Tech). Title: Diagnosis of pre-clinical Crohn's disease by capsule endoscopy: A screening study in first degree relatives. Funders: BROAD Foundation and Medtronic Foundation (IBD Research Funding Program). Status: current. Award: USD 14,737 (subcontract only).
2017 – 2018 [§]	Role: Co-Investigator (PI: Monroe, USC). Title: Evaluating Columbia moves: A social network approach using a team competition and technology to increase physical activity. Funder: USC Office of the Vice President for Research (Advanced Support Program for Innovative Research Excellence). Status: ended. Award: USD 15,000.
2017 – 2018 [§]	Role: Principal Investigator. Title: BiPe Charts – Bivariate percentiles for anthropometric charts in preterm infants. Funder: USC Office of the Vice President for Research (Advanced Support Program for Innovative Research Excellence). Status: ended. Award: USD 13,246.
2016 – 2019	Role: Principal Investigator. Title: Modelling and estimation of nonlinear quantile effects in child health research. Funder: US National Institutes of Health (Ro3 Funding Program). Status: ended. Award: USD 146,500.
2015 – 2016 [§]	Role: Principal Investigator. Title: MIBO – Multiple imputation for bounded variables using flexible transformation models. Funder: USC Office of the Vice President for Research (Advanced Support Program for Innovative Research Excellence). Status: ended. Award: USD 15,000.
2014 – 2016	Role: Principal Investigator. Title: Inference in nonlinear quantile mixed-effects models: Applications in clinical research and longitudinal studies in epidemiology. Funder: UK Medical Research Council (Methodology Research Programme). Status: approved but withdrawn due to change of affiliation. Award: GBP 254,444.
2008 – 2013	Role: Co-Investigator (PI: Dezaux, UCL). Title: Determinants of physical activity in the UK Millennium Cohort Study. Funder: Wellcome Trust (Programme Grant). Status: ended. Award: GBP 1,297,375.

Other, non-competitive financial support

- 2014 – 2017[§] Start-up funding. **Funder:** Arnold School of Public Health. **Amount:** USD 100,000.
- 2013[§] CHRAT Summer Studentship to support supervised student. **Funder:** Child Health Research Appeal Trust. **Amount:** GBP 2,000.
- 2013[§] Travel grant for invited talk at the '2013 International Royal Statistical Society Conference'. **Funder:** UCL Graduate School. **Amount:** GBP 248.
- 2012[§] Support to organise the 'UCL Partners Biostatistics Network Symposium'. **Funder:** UCLH/UCL Biomedical Research Centre. **Amount:** GBP 1,825.

Professional Service

Academic service (UCL, University College London; USC, University of South Carolina)

2019 – 2020	Chair of the Faculty Senate Committee for Academic Responsibility, USC.
2019 – present	Member of the Arnold School of Public Health Tenure and Promotion Committee, USC.
2019	Teaching Peer-Reviewer, USC.
2019	Grant Proposals Reviewer for the Research Foundation – Flanders (FWO), Belgian public research council.
2019	Grant Proposals Reviewer for the Engineering and Physical Sciences Research Council (EPSRC), UK public research council.
2019	Member of the Arnold School of Public Health Doctoral Achievement Award Selection Committee, USC.
2019	Member of the Arnold School of Public Health Jeffrey Keith Mattison Outstanding Student Achievement Award Selection Committee, USC.
2018 – present	Chair of the Departmental Research Committee, USC.
2017 – 2018	Member of the Search Committee for Assistant or Associate Professor in Biostatistics, USC.
2017 – 2019	Member of the Faculty Senate Committee for Academic Responsibility, USC.
2017 – present	Member of the Curriculum Committee (Biostatistics Division), USC.
2017 – 2018	Member of the Departmental Research Committee, USC.
2016 – 2019	Senator of the University Faculty Senate, USC.
2016	Grant Proposals Reviewer for Advanced Support Program for Innovative Research Excellence (ASPIRE I), USC.
2016 – 2017	Organizer of the Biostatistics Journal Club, USC.
2015 – 2016	Chair of the Biostatistics Division Exam Committee, USC.
2015 – 2016	Member of College Committee Hearings Panel, Office of Academic Integrity, USC.
2015	Member of the Search Committee for Assistant or Associate Professor in Physical Activity Epidemiology, USC.
2014	Member of the Search Committee for Senior Research Associate in Epidemiology/Biostatistics, UCL.
2013 – 2014	Organizer of the Departmental Seminars, UCL.
2013	Grant Proposals Reviewer for the Medical Research Council (Strategic Skills Fellowships), UK public research council.
2013	Member of the Writing Group, Medical Research Council Centre bid, UCL.
2013	Member of the Search Committee for Research Associate in Biostatistics, UCL.
2012	Member of the Faculty Committee, New Research Programmes of the School of Life and Medical Sciences (administrative and academic re-organization), UCL.
2012	Member of the Faculty Committee, Training and Career Development Plans (post-graduate and staff training), UCL.
2012	Member of the Search Committee for Research Associate in Biostatistics, UCL.
2011	Member of the Search Committee for Research Associate/Senior Research Associate in Epidemiology, UCL.
2011	Member of the Search Committee for Research Associate in Statistics, UCL.
2011	Member of the Search Committee for Research Associate in Epidemiology/Biostatistics, UCL.
2011	Grant Proposals Reviewer for Medical Research Council Small Grants Awards, UCL.
2011 – 2014	Statistical Consultant for the Department, UCL.
2010 – 2012	IT Project leader, VypAAR - Variable Archive Access and Retrieval (development of an integrated system for secure archiving of research data and metadata from large multilevel studies), UCL.

Editorial service

- 2019 – present Associate Editor, *Statistical Methods & Applications* (Springer).
- 2017 – present Statistical Reviewer, *The Lancet - Child & Adolescent Health* (Elsevier).
- 2017 – present Associate Editor, *Journal of Applied Statistics* (Taylor & Francis). Number of papers assigned: 65.
- 2015 – present Editorial Board Member, *Significance* (Wiley-Blackwell on behalf of the Royal Statistical Society and the American Statistical Association). Number of papers assigned: 29.
- 2013 – 2018 Statistical Editor, *Journal of Child Health Care* (Sage Publications). Number of papers assigned: 136.
- 2006 – present Reviewer for (the year of the review or the total number of reviews is reported in brackets; reviews of revised manuscripts are counted as separate reviews)
- Journals (**verified on Publons**): *American Sociological Review* (2014), *Annals of Applied Statistics* (4 reviews since 2014), *ASTA Wirtschafts- und Sozialstatistisches Archiv* (2018), *Biometrical Journal* (4 reviews since 2014), *Biometrics* (6 reviews since 2012), *BMC Health Services Research* (2017), *BMC Medical Research Methodology* (2 reviews since 2019), *BMJ* (2009), *BMJ Open* (2 reviews since 2018), *Communications in Statistics - Simulation and Computation* (2019), *Communications in Statistics - Theory and Methods* (2019), *EclinicalMedicine* (11 reviews since 2018), *Ecology* (2017), *International Journal of Biostatistics* (2019), *Japanese Journal of Statistics and Data Science* (2019), *Journal of Applied Statistics* (4 reviews since 2015), *Journal of Child Health Care* (3 reviews since 2013), *The Lancet - Child & Adolescent Health* (60 reviews since 2017), *The Lancet Planetary Health* (2019), *Journal of the American Statistical Association* (4 reviews since 2008), *Journal of Multivariate Analysis* (2018), *Journal of the Royal Statistical Society - Series A* (3 reviews since 2018), *Journal of Statistical Planning and Inference* (2018), *Journal of Statistical Software* (2017), *Journal of Survey Statistics and Methodology* (2016), *Methods of Information in Medicine* (2016), *Plos One* (3 reviews since 2018), *Psychometrika* (3 reviews since 2017), *R Journal* (4 reviews since 2014), *Scandinavian Journal of Statistics* (2016), *STAT* (2018), *Statistical Methods in Medical Research* (2 reviews since 2019), *Statistical Modelling* (2011), *Statistics and Computing* (4 reviews since 2010), *Statistics in Medicine* (7 reviews since 2006), *TEST* (3 reviews since 2018).
 - Publishers: *John Wiley & Sons* (2010, 2013), *CRC Press* (2014).

Academic meetings

- 2019 Workshop Organizer (Advanced statistical modeling with latent variables and random effects), University of South Carolina, Columbia SC, USA (29 March).
- 2016 Panel Discussant for the Research Consortium on Children and Families Annual Meeting, University of South Carolina, Columbia SC, USA (7 December).
- 2016 Session Chair (Multidimensional Diet – Statistical Considerations) for the National Cancer Institute Workshop on Dietary Patterns, Washington DC, USA (12-13 May).
- 2015 Session Organizer (Robust Methods in Survey Design and Analysis with Applications) for the 6th Conference of the European Survey Research Association, Reykjavik, Iceland (13-17 July).
- 2013 Organizer meeting on Quantile Regression at The Royal Statistical Society – General Applications Section, RSS, London, UK (29 May).
- 2012 Organizer UCL Partners Biostatistics Network Symposium on Contemporary Statistical Methods in Medical Research, London, UK (co-organizer M. Cortina-Borja), University College London (18 October).
- 2010 Session Chair for the 42nd Congress of the International Society of Paediatric Oncology, Boston MA, USA (21-24 October).

Professional Societies and Research Networks

- 2015 – present Member of the Research Consortium on Children and Families, University of South Carolina, USA.
- 2015 – present Member of the American Statistical Association.
- 2014 Vice Chair of the Royal Statistical Society General Applications Section Committee.
- 2012 – 2013 Elected member of the Royal Statistical Society General Applications Section Committee.
- 2012 – 2014 Member of the UCL Physical Activity Research Group, University College London, UK.
- 2011 – 2014 Member of the UCL ICH Child Activity Research Group, University College London, UK.
- 2010 – 2014 Member of the UCL Partners Biostatistics Network, University College London, UK.
- 2010 – 2014 Member of the UCL ICH Millennium Cohort Study Child Health Group, University College London, UK.
- 2008 – 2012 Supporting member of the R Foundation for Statistical Computing.
- 2006 – present Fellow of the Royal Statistical Society.

Teaching (* scheduled)

Academic Course Leader

- 2019 *Theory and Methods of Discrete Data Analysis* (BIOS 759 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2018 *Discrete Data Analysis* (BIOS 754 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2018 *Theory and Methods of Discrete Data Analysis* (BIOS 759 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2018 *Introduction to Quantile Regression* (BIOS 780 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2018 *Introduction to Systematic Reviews and Meta-Analysis* (EXSC 755 - Spring), Graduate Programs, Department of Exercise Science, University of South Carolina. Role: co-Instructor (with Michael Beets).
- 2017 *Theory and Methods of Discrete Data Analysis* (BIOS 759 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2017 *Introduction to Quantile Regression* (BIOS 780 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2016 *Theory and Methods of Discrete Data Analysis* (BIOS 759 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2016 *Introduction to Quantile Regression* (BIOS 780 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2015 *Theory and Methods of Discrete Data Analysis* (BIOS 759 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2015 *Intermediate Biometrics* (BIOS 757 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.

Other Teaching

- 2019 *Advanced statistical modeling with latent variables and random effects*, One-day workshop consisting of four sessions with computer hands-on, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Instructor.
- 2019 *Multiple Imputation – Advanced Analytical Methods in Epidemiology* (EPID 801 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Guest Lecturer.
- 2017 *Multiple Imputation – Advanced Analytical Methods in Epidemiology* (EPID 801 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Guest Lecturer.
- 2016 *Multiple Imputation – Advanced Analytical Methods in Epidemiology* (EPID 801 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Guest Lecturer.
- 2016 *Quantile Regression Methods for Applied Statistics*, 2016 ICSA (International Chinese Statistical Association) Applied Statistics Symposium, Workshop. Role: Instructor.
- 2015 *Quantile Regression – Seminar in Biostatistics* (BIOS 745 - Fall), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Guest Lecturer.
- 2015 *Multiple Imputation – Advanced Analytical Methods in Epidemiology* (EPID 801 - Spring), Graduate Programs, Department of Epidemiology and Biostatistics, University of South Carolina. Role: Guest Lecturer.
- 2014 *Quantile Regression – Further Modelling with Applications in Health Research* (STATG021, STATM021 - Spring), Graduate Programs, Department of Statistical Science, University College London. Role: Guest Lecturer.
- 2013 *Quantile Regression: A Tutorial*, The Royal Statistical Society, Workshop. Role: Instructor.
- 2013 *Introduction to Quantile Regression*, Statistical Courses Programme, Institute of Child Health, University College London. Role: Instructor.
- 2012 *Introduction to Quantile Regression*, Statistical Courses Programme, Institute of Child Health, University College London. Role: Instructor.
- 2011 *Introduction to Quantile Regression*, Statistical Courses Programme, Institute of Child Health, University College London. Role: Instructor.
- 2007 *A CLIC Sargent Project: Research into TYA Cancers*, An Introduction to Childhood Cancer and CLIC Sargent Services, The Education Centre, Christie Hospital, Manchester (UK). Role: Guest Lecturer.
- 2008 *Biostatistics*, Master of Public Health (Web-based Learning), University of Manchester. Role: Teaching Assistant.
- 2002–2003 *Statistics for Economists*, Master of Science in Economics, Undergraduate Programs, University of Florence. Role: Teaching Assistant.
- 2001–2002 *Statistics for Economists*, Master of Science in Economics, Undergraduate Programs, University of Florence. Role: Teaching Assistant.

Supervision and Mentoring (* student's award)

Doctoral Dissertation Committees

Nahid Sumi, PhD Biostatistics, University of South Carolina. Project title: Multilevel and marginally interpretable models for quantile regression with random effects (expected 2020). Role: Committee Chair.

Maria Sevoyan*, PhD Epidemiology, University of South Carolina. Project title (provisional): On maternal and newborn risk factors and health outcomes (expected 2020). Role: Committee Member. *USC Epidemiology Outstanding Doctoral Student Award*.

Lara Schneider, PhD Epidemiology, University of South Carolina. Project title: TBD (expected 2020). Role: Committee Member.

Roddrick Dugger, PhD Exercise Science, University of South Carolina. Project title: TBD (expected 2020). Role: Committee Member.

Ethan Hunt, PhD Exercise Science, University of South Carolina. Project title: TBD (expected 2020). Role: Committee Member.

Carlene Mayfield, PhD Epidemiology, University of South Carolina. Project title: Frequent utilization of the emergency department and social determinants of health (expected 2019). Role: Committee Member.

George Grieve, PhD Exercise Science, University of South Carolina. Project title: The effects of various exercise protocols on energy expenditure during and following exercise (awarded 2018). Role: Committee Member.

Michael Smith*, DrPh Biostatistics, University of South Carolina. Project title: Examining the infant health outcomes impacted by South Carolina's regionalized system of perinatal care (awarded 2016). Role: Committee Member. *Arnold School of Public Health Outstanding Biostatistics Student Award* and *Coalition for Excellence in Maternal and Child Health Epidemiology Early Career Professional Achievement Award*.

Xin Tong, PhD Biostatistics, University of South Carolina. Project title: Semiparametric Bayesian quantile regression for mixed-effects models (awarded 2016). Role: Committee Member.

Rawan Hashem, PhD Epidemiology and Public Health, University College London. Project title: Physical activity and sedentary behaviour in a school sample of Kuwaiti adolescents: Sociodemographic correlates and associations with adiposity and blood pressure, November 2013 – June 2014. Role: Committee Member.

Francesco Sera, PhD Biostatistics, University College London. Project title: Missing data and dynamic models in life course studies, July 2011 – September 2012. Role: Committee Member.

Doctoral Comprehensive Examination Committees

Ethan Hunt, University of South Carolina. Year of examination: 2019.

Carlene Mayfield, University of South Carolina. Year of examination: 2019.

Maria Sevoyan, University of South Carolina. Year of examination: 2019.

George Grieve, University of South Carolina. Year of examination: 2017.

Michael Smith, University of South Carolina. Year of examination: 2015.

Master Thesis Committees

Xinyan Cai, Graduate student, University of South Carolina. Project title: Longitudinal and geographical modeling of circular data with an application to sudden infant death syndrome (awarded 2017). Role: Committee Chair.

Brittany Sullivan, Graduate student, University of South Carolina. Project title: Thyroid disorders and adverse pregnancy outcomes (awarded 2016). Role: Committee Member.

Hakim-Moulay Dehbi*, MSc Statistics (with distinction), University College London. Project title: Transformations to additivity for binary response data and quantile regression for bounded outcomes (awarded 2012). Role: Committee Member. *PSI – Statisticians in the Pharmaceutical Industry Award*.

Research Assistants

Ummay Anika, Graduate student, University of South Carolina. Project title: A study of the performance of common estimators in location-shift and location–scale-shift models, January – May 2019. Role: Supervisor.

Siyu Zheng, PhD student, University of South Carolina. Project title: Literature review of applications of linear quantile mixed models, January – May 2018. Role: Supervisor.

Nahid Sumi, PhD student, University of South Carolina. Project title: An historical and critical appraisal of the low-birthweight threshold, May – August 2017. Role: Supervisor.

Marie Knoll, Undergraduate student (job shadowing with Nahid Sumi), University of South Carolina. Project title: An historical and critical appraisal of the low-birthweight threshold, May – August 2017. Role: Supervisor.

Maria Sevoyan, PhD student, University of South Carolina. Project title: Investigating the birthweight paradox using population-based data, May – August 2017. Role: Co-supervisor.

Tahmidul Islam, PhD student, University of South Carolina. Project title: Investigating the birthweight paradox using population-based data, May – August 2017. Role: Co-supervisor.

Nahid Sumi, PhD student, University of South Carolina. Project title: Analysis of car accidents in South Carolina, May – August 2016. Role: Supervisor.

Akhtar Hossain, PhD student, University of South Carolina. Project title: A Stata command for linear quantile mixed models, May – August 2016. Role: Supervisor.

Nahid Sumi, PhD student, University of South Carolina. Project title: MIBO - Multiple imputation for bounded variables, October 2015 – May 2016. Role: Supervisor.

Junxiu Liu, Graduate student, University of South Carolina. Project title: MIBO - Multiple imputation for bounded variables, August – October 2015. Role: Supervisor.

Junxiu Liu, Graduate student, University of South Carolina. Project title: Quantile methods in public health, May – August 2015. Role: Supervisor.

Amber Watson, Graduate student, University of South Carolina. Project title: Quantile regression for count data: An application to car accidents in South Carolina, May – August 2015. Role: Supervisor.

Xiaoxi Yan, Summer visiting student, University College London. Project title: Fractal analysis of accelerometer data in paediatric research, July – August 2013. Role: Supervisor.

Advising and Mentorship

Rebecca Wardrop, PhD student, University of South Carolina. August – December 2019. Role: Teaching Practicum Advisor.

Nahid Sumi, PhD student, University of South Carolina. January 2018 – May 2018. Role: Consulting Practicum Advisor.

Siyuan Guo, PhD student, University of South Carolina. August 2018 – Present. Role: Academic Advisor.

Nahid Sumi, PhD student, University of South Carolina. August 2017 – Present. Role: Academic Advisor.

Siyu Zheng, PhD student, University of South Carolina. August 2017 – Present. Role: Academic Advisor.

Marjorie Howard, Graduate student, University of South Carolina. August 2015 – May 2017. Role: Academic Advisor.

Nansi Boghossian, Assistant Professor, University of South Carolina. January 2015 – present. Role: Mentor.

Anna Pearce, Associate Editor, Journal of Child Health Care. June 2014 – May 2017. Role: Mentor.

Beate Weidenhammer, PhD Statistics, Freie Universität Berlin. October 2012 – October 2013. Role: External Advisor.

Ángela Hernández, PhD Social Statistics, University of Southampton. October 2012 – October 2013. Role: External Advisor.

Ilva Lodolo, Postgraduate Training in Gastroenterology, University of Udine. February 2010. Role: External Advisor.

Publications (§ work in collaboration with supervised student; † joint lead author)

Journal Articles – Statistics

1. Farcomeni A and **Geraci M** (2019). Multi-state quantile regression models. *Statistics in Medicine* (accepted).
2. **Geraci M**, Boghossian N, Farcomeni A, and Horbar J (2019). Quantile contours and allometric modelling for risk classification of abnormal ratios with an application to asymmetric growth-restriction in preterm infants. *Statistical Methods in Medical Research*, doi:10.1177/0962280219876963.
3. **Geraci M** (2019). Modelling and estimation of nonlinear quantile regression with clustered data. *Computational Statistics & Data Analysis*, 136, 30-46.
4. **Geraci M** (2019). Letter to the Editor. *Statistics and Its Interface*, 12, 71-75. (Peer-reviewed letter providing a thorough methodological critique, including re-running simulation study and real data analysis, of the following article: Galarza, C. E., Lachos, V. H., and Bandyopadhyay, D. (2017). Quantile regression in linear mixed models: A stochastic approximation EM approach. *Statistics and Its Interface* 10, 471-482.)
5. **Geraci M** (2018). Additive quantile regression for clustered data with an application to children's physical activity. *Journal of the Royal Statistical Society C*, 68, 1071-1089.
6. **Geraci M** and McLain A (2018). Multiple imputation for bounded variables. *Psychometrika*, 83, 919-940.
7. **Geraci M** (2016). Qtools: A collection of models and tools for quantile inference. *The R Journal*, 8, 117-138.
8. **Geraci M** (2016). Estimation of regression quantiles in complex surveys with data missing at random: An application to birthweight determinants. *Statistical Methods in Medical Research*, 25, 1393-1421.
9. Dehbi H-M[§], Cortina-Borja M, and **Geraci M** (2016). Aranda-Ordaz quantile regression for student performance assessment. *Journal of Applied Statistics*, 43, 58-71 (Special Issue: Statistics in Education).

10. **Geraci M** and Farcomeni A (2016). Probabilistic principal component analysis to identify profiles of physical activity behaviours in the presence of nonignorable missing data. *Journal of the Royal Statistical Society C*, 65, 51-75.
11. Bottai M, Orsini N, and **Geraci M** (2015). A gradient search maximization algorithm for the asymmetric Laplace likelihood. *Journal of Statistical Computation and Simulation*, 85, 1919-1925.
12. **Geraci M** and Jones MC (2015). Improved transformation-based quantile regression. *Canadian Journal of Statistics*, 43, 118-132.
13. **Geraci M** (2014). Linear quantile mixed models: The lqmm package for Laplace quantile regression. *Journal of Statistical Software*, 57, 1-29.
14. **Geraci M** and Bottai M (2014). Linear quantile mixed models. *Statistics and Computing*, 24, 461-479.
15. **Geraci M**, Alston RD and Birch JM (2013). Median percent change: A robust alternative for assessing temporal trends. *Cancer Epidemiology*, 37, 843-849.
16. **Geraci M** and Degli Esposti M (2011). Where do Italian universities stand? An in-depth statistical analysis of national and international rankings. *Scientometrics*, 87, 667-681.
17. **Geraci M** and Lawson AB (2009). Evaluation of reduced rank semiparametric models to assess excess of risk in cluster analysis. *Environmetrics*, 20, 360-378.
18. Bottai M, **Geraci M**, and Lawson AB (2008). Testing for unusual aggregation of health risk in semiparametric models. *Statistics in Medicine*, 27, 2902-2921.
19. **Geraci M** and Bottai M (2007). Quantile regression for longitudinal data using the asymmetric Laplace distribution. *Biostatistics*, 8, 140-154.
20. **Geraci M** and Salvati N (2007). The geographical distribution of the consumption expenditure in Ecuador: Estimation and mapping of the regression quantiles. *Italian Journal of Applied Statistics* 19, 167-183.
21. **Geraci M** and Bottai M (2006). Use of auxiliary data in semiparametric spatial regression with nonignorable missing responses. *Statistical Modelling*, 6, 321-336.

Journal Articles – Perinatal Epidemiology

22. Boghossian N, **Geraci M**, Lorch SA, Phibbs CS, Edwards E, and Horbar JD (2019). Racial and ethnic differences over time in outcomes of infants born at less than 30 weeks' gestation. *Pediatrics*, doi:10.1542/peds.2019-1106.
23. Boghossian N, **Geraci M**, Edwards EM, and Horbar JD (2018). Sex differences in mortality and morbidity of preterm infants born at less than 30 weeks' gestation. *Pediatrics*, 142, e20182352.
24. Boghossian N, **Geraci M**, Edwards EM, and Horbar JD (2018). Neonatal and fetal growth charts to identify preterm infants less than 30 weeks gestation at risk of adverse outcomes. *American Journal of Obstetrics and Gynecology*, 219, 195.e1-195.e14.
25. Boghossian N, **Geraci M**, Edwards EM, and Horbar JD (2018). In-hospital outcomes in large for gestational age infants at 22 to 29 weeks' gestation. *Journal of Pediatrics*, 198, 174-180.
26. Boghossian N, **Geraci M**, Edwards EM, and Horbar JD (2018). Morbidity and mortality in small for gestational age infants at 22 to 29 weeks' gestation. *Pediatrics*, 141, e20172533.
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Presentations (* invited; § work in collaboration with supervised student; presenting author is underlined)

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3. **Geraci M**. Modelling longitudinal accelerometer measurements using additive mixed-effects quantile regression. IBC 2018, XXIX International Biometric Conference, Barcelona, Spain. July 8-13, 2018.

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7. Xu X, **Geraci M**, and Ortaglia A. Robust quantile regression of surveys with data missing at random. ESRA 2015, 6th Conference of the European Survey Research Association, Reykjavik, Iceland. July 13-17, 2015.
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13. Sera F, **Geraci M**, Dezateux C, Griffiths LJ, Rich C, and Cortina-Borja M. The use of functional data analysis to analyze accelerometer data. Dynamic Statistical Models, ISI-satellite meeting. Copenhagen, August 17-19, 2011.
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18. ***Geraci M** and Salvati N. Quantile regression methods in poverty mapping: The case of the survey on life conditions in Ecuador. Statistical Methods for Performance Analysis, Cassino, Italy, April 2006.

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23. Grieve GL[§], Davis JM, Durstine JL, **Geraci M**, Wang X, Ritchey JS, Drenowatz C, Sarzynski MA. Reductions in energy expenditure after aerobic and resistance exercise in resistance-trained males, 2019 Annual Meeting of the American College of Sports Medicine, Orlando FL, USA. May 28-June 1, 2019.
24. Sorrentino D, Kuballa A, **Geraci M**, Johnstone M. The gut microbial profile of preclinical Crohn's disease is similar to that of healthy controls, Digestive Disease Week 2019, San Diego CA, USA. May 18-21, 2019.
25. Boghossian N, **Geraci M**, Lorch SA, Phibbs CS, Edwards E, Horbar JD. Racial/ethnic differences in outcomes of infants born <30 weeks' gestation from 2006 to 2016, Pediatric Academic Societies Meeting, Baltimore MD, USA. April 24-May 1, 2019.
26. Monroe CM, **Geraci M**, Turner-McGrievy G, Edney S. Feasibility of a social network approach using gamification and mobile technology to increase physical activity among adults: A cluster randomized controlled trial, 40th Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine, Washington DC, USA. March 6-9, 2019.
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55. **Geraci M**, Alston RD, Eden TOB, Moran A, Birch, JM. Analysis of cancer mortality by region and socioeconomic deprivation in teenagers and young adults in England and Wales. Fifth International Conference on Teenage and Young Adult Cancer Medicine, London, UK. June 2008.
56. **Geraci M**, Birch JM, Alston RD, Moran A, Eden TOB. Cancer mortality in 13 to 29 year olds in England and Wales, 1981-2005. 39th Congress of the International Society of Paediatric Oncology, Mumbai, India. November 2007.
57. **Geraci M**, Birch JM, Alston RD, Moran A, Eden TOB. Cancer mortality in 13 to 29 year olds in England and Wales, 1981-2005. ECCO 14 – The European Cancer Conference, Barcelona, Spain. October 2007.
58. **Geraci M**, Birch JM, Alston RD, Moran A, Eden TOB. Cancer mortality in 13 to 29 year olds in England and Wales, 1981-2005. 2007 NCRI Cancer Conference, Birmingham, UK. September 2007.

Invited seminars (since 2004)

Sapienza – University of Rome, June 2019; University of South Carolina, November 2018; University College London, July 2018; Sapienza – University of Rome, July 2018; University of Naples, June 2018; University of Florence, June 2018; University of South Carolina, November 2014; University of South Carolina, October 2014; UCL Medical School, May 2014; University of South Carolina, January 2014; University of Calgary, May 2013; Brunel University, November 2012; University College London, September 2012; Queen Mary University of London, March 2012; University College London, January 2011; University of Manchester, September 2010; Karolinska Institutet, August 2010; University College London, August 2010; University of Strathclyde, August 2010; University of Plymouth, July 2010; University of Bristol, June 2010; University of Manchester, November 2008; University of Southampton, April 2008; University of York, April 2008; University of Leeds, April 2008; University of Southampton, September 2007; University of York, September 2007; Christie Hospital, Manchester, June 2007; University of South Carolina, November 2004; University of South Carolina, April 2004.

Bibliometrics

Citations: 1189; *H*-index: 16 (Source: [Scopus](#), 2 September 2019)

Citations: 1915; *H*-index: 20; *i10*-index: 33 (Source: [Google Scholar](#), 2 September 2019)

The three most-cited statistical papers (Source: [Google Scholar](#), 2 September 2019)

- Geraci and Bottai (2007, *Biostatistics*). This article is a Web of Science Highly Cited paper and has regularly ranked among the top 50 most read papers in *Biostatistics*. Citations: 315.
- Geraci and Bottai (2014, *Stat Comp*). Citations: 153. This article, **downloaded 3,400 times** (Source: <https://goo.gl/w25Vjs>), was featured as a highly cited article in the *Statistics and Computing* newsletter (Source: <https://goo.gl/sxXAqK>). These methods and related software (Geraci, 2014, *J Stat Soft*) have been applied in public health, medicine, anesthesiology, ophthalmology, biology and marine biology, environmental and climate science, psychology, criminology, finance, linguistic and lexicography, with areas of applications ranging from cardiovascular disease, HIV, physical activity, and rheumatoid arthritis, to studies on bacteria, silky sharks, reef fishes, reef corals, species distribution, forests, and glaciers.
- Geraci (2014, *J Stat Soft*). Citations: 93. This article is a tutorial which describes the R package *lqmm* implementing the methods of Geraci and Bottai (2007, 2014). Since its first release in April 2012, the package has totaled **more than 27,000 downloads** as of April 16, 2019 (Source: <http://cran-logs.rstudio.com>). The tutorial has been **downloaded more than 8,700 times** (<https://www.jstatsoft.org/article/view/v057i13>).

Press/media release

Boghossian et al (2019, *Pediatrics*)

<https://pediatrics.aappublications.org/content/early/2019/08/08/peds.2019-2002> (editorial)

https://www.sc.edu/study/colleges_schools/public_health/about/news/2019/racial_differences_preterm_infants

Geraci and McLain (2018, *Psychometrika*)

<https://www.aspph.org/south-carolina-researchers-develop-multiple-imputation-model-to-deal-with-missing-values-in-bounded-variables>

Boghossian et al (2018a, *Pediatrics*)

<https://mailchi.mp/mailbox/uofsc-today-apr-18-2018?e=bb1e73769f>

<https://mailchi.mp/mailbox/uofsc-today-mar-20-226445?e=bb1e73769f>

Boghossian et al (2016, *Pediatrics*)

http://www.sc.edu/study/colleges_schools/public_health/about/news/2016/preterm_growth_charts.php

<http://www.aspph.org/south-carolina-researchers-develop-sex-and-race-specific-growth-charts-for-preterm-infants-using-novel-statistical-model/>

Modelling and estimation of nonlinear quantile effects in child health research (NIH R03. PI: Geraci)

<http://www.aspph.org/south-carolina-researcher-receives-nih-grant-to-extend-statistical-methods/>

Griffiths et al (2013, *BMJ Open*)

<http://www.bbc.co.uk/news/health-23778945>

<http://www.bbc.co.uk/news/health-23778946>

<http://www.dailymail.co.uk/health/article-2399536/Seven-year-olds-sit-half-day-Only-half-exercise-10-minutes-day.html>

<http://www.independent.co.uk/life-style/health-and-families/health-news/what-olympic-effect-primary-schoolchildren-are-falling-behind-on-exercise-8778962.html>

<http://news.sky.com/story/1131734/half-of-seven-year-olds-not-exercising-enough>

<https://www.nhs.uk/news/lifestyle-and-exercise/half-of-all-seven-year-olds-not-exercising-enough/>

<http://www.theguardian.com/society/2013/aug/21/doctors-sound-alarm-child-fitness>

<http://www.thetimes.co.uk/tto/health/child-health/article3849530.ece>

<http://sante.lefigaro.fr/actualite/2013/08/30/21175-enfant-sur-deux-ne-fait-pas-assez-dexercice-physique>

<https://soundcloud.com/bmjpodcasts/how-active-are-our-children/s-zpznB> (podcast)

Sorrentino et al (2010, *Clin Gastroenterol Hepatol*)

[https://www.clinicalkey.com/service/content/pdf/watermarked/1-s2.0-S1542356510003873.pdf?locale=en_US&searchIndex=\(editorial\)](https://www.clinicalkey.com/service/content/pdf/watermarked/1-s2.0-S1542356510003873.pdf?locale=en_US&searchIndex=(editorial))

<http://www.youtube.com/watch?v=g7-JSts-z40> (video abstract)

Continuing Professional Development

2018	Harassment & Discrimination Prevention, USC.
2017	Biomedical Investigators - Basic Course, Collaborative Institutional Training Initiative (CITI Program), USC.
2015	Haven Training Module on Sexual Assault for Faculty and Staff, USC.
2015	College Committee Hearings Training, USC.
2013	An Introduction to Examining Research Doctorates, UCL.
2013	Effective Team Working, UCL.
2012	Managing Your Time, UCL.
2011 – 2012	Teaching and Learning in Higher and Professional Education Programme (Designing Courses and Curricula & Improving Lecturing – 30 credits), Institute of Education, UCL.
2011	Effective Research Student Supervision, UCL.
2011	Recruitment and Selection HR Policy Briefing, UCL.
2011	Diversity in the Workplace, UCL.

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