



Alessandro Gasparini

Post-Doctoral Researcher in Biostatistics

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Research Experience

Karolinska Institutet

Post-Doctoral Researcher	2019-09 – Current
Research Assistant	2015-04 – 2016-10
Research Intern	2014-08 – 2015-01

Epidemiological Service of the Veneto Region

Research Intern	2012
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Education

University of Leicester

Ph.D. in Biostatistics	2020
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University of Milano-Bicocca

M.Sc. in Biostatistics and Experimental Statistics	2015
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University of Padua

B.Sc. in Statistics and Computing Technologies	2012
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Publications

THESES

A Gasparini. *Multilevel Modelling of Electronic Health Records*. 2019.

A Gasparini. *Time to Start of Renal-replacement Therapy in Pre-dialysis Patients Referred to a Nephrologist: A Competing Risks Approach Using Data from the Swedish Renal Registry*. 2015.

A Gasparini. *Hip Fracture in Elderly People in the Veneto Region*. 2012.

JOURNAL ARTICLES

A Gasparini, KR Abrams, JK Barrett, RW Major, MJ Sweeting, NJ Brunskill and MJ Crowther. *Mixed effects models for healthcare longitudinal data with an informative visiting process: a Monte Carlo simulation study*. *Statistica Neerlandica*, 2020, 74(1):5–23

MO Harhay, A Gasparini, AJ Walkey, GE Weissman, MJ Crowther, SJ Ratcliffe and JA Russell. *Assessing the course of organ dysfunction using joint longitudinal and time-to-event modeling in the vasopressin and septic shock trial (VASST)*. *Critical Care Explorations*, 2020, 2(4)

A Gasparini, MS Clements, KR Abrams, MJ Crowther. *Impact of model misspecification in shared frailty survival models*. *Statistics in Medicine*, 2019, 38(23):4477–4502

A Gasparini, M Evans, P Barany, H Xu, T Jernberg, J Ärnlöv, LH Lund and JJ Carrero. *Plasma potassium ranges associated with mortality across stages of chronic kidney disease: the Stockholm CREATinine Measurements (SCREAM) project*. *Nephrology Dialysis Transplantation*, 2019, 34(9):1534–1541

UH Lundström, U Hedin, A Gasparini, F Caskey, JJ Carrero and M Evans. *Influence of AV-fistula placement on renal function decline*. *Nephrology Dialysis Transplantation*, 2019, in press

B Runesson, AR Qureshi, H Xu, A Gasparini, B Lindholm, P Barany, CG Elinder, JJ Carrero. *Causes of death across categories of estimated glomerular filtration rate: The Stockholm CREATinine Measurements (SCREAM) project*. *PLOS ONE*, 2019, 14(1):e0209440

LA Inker, ME Grams, AS Levey *et al.* *Relationship of estimated GFR and albuminuria to concurrent laboratory abnormalities: an individual participant data meta-analysis in a global consortium*. *American Journal of Kidney Disease*, 2019, 73(2):206–217

A Gasparini. *rsimsum: Summarise results from Monte Carlo simulation studies*. *Journal of Open Source Software*, 2018, 3(26):739

A Gasparini. *comorbidity: An R package for computing comorbidity scores*. *Journal of Open Source Software*, 2018, 3(23):648

CJ Janmaat, M van Diepen, A Gasparini, M Evans, AR Qureshi, J Ärnlöv, P Barany, CG Elinder, JI Rotmans, M Vervloet, FW Dekker and JJ Carrero. *Lower serum calcium is independently associated with CKD progression*. *Scientific Reports*, 2018, 8(1):5148

M Evans, S Methven, A Gasparini, P Barany, K Birnie, S MacNeill, MT May, FJ Caskey and JJ Carrero. *Cinacalcet use and the risk of cardiovascular events, fractures and mortality in chronic kidney disease patients with secondary hyperparathyroidism*. *Scientific Reports*, 2018, 8(1):2103

L Friberg, A Gasparini, JJ Carrero. *A scheme based on ICD-10 diagnoses and drug prescriptions to stage chronic kidney disease severity in healthcare administrative records*. *Clinical Kidney Journal*, 2018, 11(2):254–258

H Xu, M Evans, A Gasparini, K Szummer, J Spaak, J Ärnlöv, B Lindholm, T Jernberg and JJ Carrero. *Outcomes associated to serum phosphate levels in patients with suspected acute coronary syndrome*. *International Journal of Cardiology*, 2017, 245:20–26

E Nilsson, A Gasparini, J Ärnlöv, H Xu, KM Henriksson, J Coresh, ME Grams and JJ Carrero. *Incidence and determinants of hyperkalemia and hypokalemia in a large healthcare system*. *International Journal of Cardiology*, 2017, 245:277–284

K Matsushita, SH Ballew, J Coresh *et al.* *Measures of chronic kidney disease and risk of incident peripheral artery disease: a collaborative meta-analysis of individual participant data*. *The Lancet Diabetes & Endocrinology*, 2017, 5(9):718–728

DCF Klatte, A Gasparini, H Xu, P de Deco, M Trevisan, ALV Johansson, B Wettermark, J Ärnlöv, CJ Janmaat, B Lindholm, FW Dekker, J Coresh, ME Grams and JJ Carrero. *Association between proton pump inhibitor use and risk of progression of chronic kidney disease*. *Gastroenterology*, 2017, 153(3):702–710

H Xu, A Gasparini, J Ishigami, K Mzayen, G Su, P Barany, J Ärnlöv, B Lindholm, CG Elinder, K Matsushita and JJ Carrero. *eGFR and the risk of community-acquired infections*. *Clinical Journal of the American Society of Nephrology*, 2017, 12(9):1399–1408

K Szummer, A Gasparini, S Eliasson, J Ärnlöv, AR Qureshi, P Barany, M Evans, L Friberg and JJ Carrero. *Time in therapeutic range and outcomes after warfarin initiation in newly diagnosed atrial fibrillation patients with renal dysfunction*. Journal of the American Heart Association, 2017, 6(3):e004925

S Methven, A Gasparini, JJ Carrero, FJ Caskey and M Evans. *Routinely measured iohexol glomerular filtration rate versus creatinine-based estimated glomerular filtration rate as predictors of mortality in patients with advanced chronic kidney disease: a Swedish Chronic Kidney Disease Registry cohort study*. Nephrology Dialysis Transplantation, 2017, 32(suppl 2):ii170-ii179

UH Lundström, A Gasparini, R Bellocco, AR Qureshi, JJ Carrero and M Evans. *Low renal replacement therapy incidence among slowly progressing elderly chronic kidney disease patients referred to nephrology care: an observational study*. BMC Nephrology, 2017, 18(1):59

JJ Carrero, ME Grams, Y Sang, J Ärnlöv, A Gasparini, K Matsushita, AR Qureshi, M Evans, P Barany, B Lindholm, SH Ballew, AS Levey, RT Gansevoort, CG Elinder and J Coresh. *Albuminuria changes are associated with subsequent risk of end-stage renal disease and mortality*. Kidney International, 2017, 91(1):244–251

A Gasparini, M Evans, J Coresh, ME Grams, O Norin, AR Qureshi, B Runesson, P Barany, J Ärnlöv, T Jernberg, B Wettermark, CG Elinder and JJ Carrero. *Prevalence and recognition of chronic kidney disease in Stockholm healthcare*. Nephrology Dialysis Transplantation, 2016, 31(12):2086–2094

B Runesson, A Gasparini, AR Qureshi, O Norin, M Evans, P Barany, B Wettermark, CG Elinder and JJ Carrero. *The Stockholm CREATinine Measurements (SCREAM) project: protocol overview and regional representativeness*. Clinical Kidney Journal, 2015, 9(1):119–127

Working Papers and Pre-Prints

A Gasparini, TP Morris, MJ Crowther. *INTEREST: INteractive Tool for Exploring REsults from Simulation sTudies*. 2020. arXiv:1909.03813. Currently accepted for publication at the Journal of Data Science, Statistics, and Visualisation.

EC Martin, A Gasparini. MJ Crowther. 2020. *merlin: An R package for Mixed Effects Regression for Linear, Nonlinear and User-defined models*. arXiv:2007.14109

A Gasparini, B Wettermark, K Schmidt-Mende, M Evans, AR Qureshi, P Barany, CG Elinder and JJ Carrero. *Inappropriate prescription of nephrotoxic drugs to individuals with chronic kidney disease: a community-based analysis from the Stockholm CREATinine Measurements (SCREAM) project*.

Invited Talks

RSS International Conference. 2020. Title: *Natural History Models for Breast Cancer Growth and Spread*

Spring Meeting of the Swedish Society for Medical Statistics. 2020. Title: *Open Tools to Analyse and Report Monte Carlo Simulation Studies*.

Seminar Series in Biostatistics, Unit of Biostatistics, Epidemiology and Public Health, Department of Statistics and Quantitative Methods, Università degli Studi di Milano-Bicocca, Milan, Italy. 2017. Title: *Mixed Effects Survival Models*.

Oral Presentations

Young Statisticians' Meeting. 2020. Title: *Natural History Models for Breast Cancer Growth and Spread*

Internal Epidemiology/Statistics Seminars, Department of Health Sciences, University of Leicester, Leicester, United Kingdom. 2020. Title: *Modelling Breast Cancer Tumour Growth and Metastasis*.

useR! Conference, Toulouse, France. 2019. Title: *Analysing Results from Monte Carlo Simulation Studies Using the rsimsum Package and the INTEREST Shiny App*.

Internal Biostatistics Seminars, Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden. 2019. Title: *Modelling Longitudinal Electronic Health Records Data with an Informative Observation Process and Drop-Out*.

7th Survival Analysis for Junior Researchers Conference, Leiden, The Netherlands. 2018. Title: *Joint Models for Survival and Longitudinal Data When the Observation Process Is Informative*.

55th ERA-EDTA Congress, Copenhagen, Denmark. 2018. Title: *Optimal Plasma Potassium [K⁺] Ranges Across Chronic Kidney Disease Stages: The Stockholm Creatinine Measurements (SCREAM) Project*.

1st Annual Health Sciences Post-Graduate Forum (HeSPoF), Leicester, United Kingdom. 2018. Title: *Version Control Will Save Your Life*.

Internal Epidemiology/Statistics Seminars, Department of Health Sciences, University of Leicester, Leicester, United Kingdom. 2018. Title: *Analysing Longitudinal Data Originating from Electronic Health Records*.

38th Annual Conference of the International Society for Clinical Biostatistics, Vigo, Spain. 2017. Title: *Impact of Model Misspecification in Survival Models with Frailties*.

Statistical Analysis of Multi-Outcome Data Conference, Liverpool, United Kingdom. 2017. Title: *Impact of Model Misspecification in Survival Models with Frailties*.

6th Survival Analysis for Junior Researchers Conference, Leicester, United Kingdom. 2017. Title: *Direct Likelihood Maximisation Using Numerical Quadrature to Approximate Intractable Terms*.

54th ERA-EDTA Congress, Madrid, Spain. 2017. Title: *Inappropriate Prescription of Nephrotoxic Drugs to Individuals with Chronic Kidney Disease: A Community-based Analysis from the Stockholm Creatinine Measurements (SCREAM) Project*.

Poster Presentations

Department of Health Sciences Annual Conference, Leicester, United Kingdom. 2018. Title: *Assessing the Course of Organ Dysfunction Using Joint Longitudinal and Time to Event Modelling*.

Department of Health Sciences Annual Conference, Leicester, United Kingdom. 2017. Title: *INTEREST: Interactive Tool for Exploring REsults from Simulation sTudies*.

53rd ERA-EDTA Congress, Vienna, Austria. 2016. Title: *Prevalence, Diagnosis and Nephrology Care of CKD in the Region of Stockholm*.

7th Nordic Conference of Epidemiology and Registry-Based Health Research, Oslo, Norway. 2015. Title: *Association Between Age, Renal Function, Disease Progression, and The Probability of Renal Replacement Therapy Initiation Using Nationwide Data From the Swedish Renal Registry*.

Joint Meeting of the International Biometric Society (IBS), Austro-Swiss and Italian Regions, Milan, Italy. 2015. Title: *A Weighted Form of the Estimator for the Cause-specific Cumulative Incidence Function Can Be Computationally More Efficient Using R*.

Software

I am the creator and maintainer of the following R packages:

- `rsimsum`, a package used to summarise results from simulation studies and compute Monte Carlo standard errors of commonly used summary statistics;
- `comorbidity`, a package used to compute comorbidity scores;
- `KMunicate`, a package to produce Kaplan–Meier plots in the style recommended following the `KMunicate` study.

These packages are available from the Comprehensive R Archive Network (CRAN). Additionally, I contributed to several open-source R packages. Among others:

- `merlin`, a package to fit linear, non-linear, and user-defined mixed effects regression models;
- `joinerML`, a package for joint modelling of multivariate longitudinal data and time-to-event outcomes;
- `rstpm2`, a package to fit generalised survival models;
- `xaringan`, a package to create HTML5 slides with R Markdown and the JavaScript library `remark.js`;
- `rticles`, a package with a suite of custom R Markdown formats and templates for authoring journal articles and conference submissions;
- `broom`, a package used to summarise key information about statistical objects in tidy tibbles;
- `readr`, a package to read flat files into R;
- `withr`, a package that implements methods for temporarily modifying global state.

Professional Service

I have been a manuscript reviewer for the following journals: *Statistical Methods in Medical Research*, *Statistica Neerlandica*, *PLOS ONE*, *BMC Nephrology*, *Journal of Open Source Software*.

Teaching

INSTRUCTOR

Master Degree in Epidemiology e Biostatistic for Clinical Research. This course is jointly offered by the University of Milan-Bicocca and the Mario Negri Institute for Pharmacological Research. I was responsible for developing the material and teaching the module on survival analysis, which covered basic concepts, non-parametric methods, and regression modelling for survival data.

TEACHING ASSISTANT

Using Simulation Studies to Evaluate Statistical Methods. This course introduces the methodology necessary to plan, run, analyse, and evaluate Monte Carlo simulation studies. It is aimed at both applied and methodological statisticians, and was first developed by Prof. White, Dr. Morris, and Dr. Crowther. I contributed to the teaching material and practical sessions, and I helped delivering the course in July 2018 and November 2019.

Joint Modelling of Longitudinal and Survival Data. This course was offered to participants at the 2018 and 2019 Summer School on Modern Methods in Biostatistics and Epidemiology in Cison di Valmarino, Treviso, Italy. The lead instructor of this course was Dr. Crowther, and I contributed to developing the teaching material and delivering the practical sessions.

Biostatistics III. This course was offered to post-graduate students at Karolinska Institutet. The lead instructors of this course were Dr. Andersson and Dr. Johansson, and I helped with the practical sessions in Spring 2020.

VetU. This course was offered to under-graduate students at Karolinska Institutet, and introduced the basic concept of Statistics. The lead instructor of this course was Prof. Sjölander, and I helped with the practical session.

Introduction to Statistics with GraphPad Prism. This course is run every year and it is aimed at post-graduate students of the College of Life Sciences, University of Leicester, without any previous background in Statistics. The lead instructor of this course was Dr. Hsu, and I helped with the practical sessions.

Biostatistics II. This course was offered to post-graduate students at Karolinska Institutet. The lead instructor of this course was Prof. Bellocco, and I helped with the practical sessions in January 2016.

Awards

Voted among best oral presentations at the Young Statisticians Meeting in July 2020.

Voted second best poster presentation at the Department of Health Sciences Annual Conference, in December 2017.

Awarded a scholarship from Istituto Nazionale della Previdenza Sociale (INPS) for academic achievements during my M.Sc. degree in 2016.

Awarded an EXTRA scholarship from University of Milano-Bicocca in 2014 to support a research exchange to Karolinska Institutet, Stockholm, Sweden to work on my M.Sc. dissertation.

Awarded an Erasmus scholarship from the EU and University of Padua in 2011 to spend a semester abroad with the Erasmus programme at the Miguel Hernández University of Elche, Elche, Spain.

References

Available upon request.