

## CURRICULUM VITAE ET STUDIORUM

**Name:** Giulia Barbati  
**Present Position:** Associate Professor in Medical Statistics, University of Trieste

### Research Interests

I am a biostatistician and I work in estimation of clinical risk prediction models and the assessment of their performance. In particular, my contribution is in the design, conduct and analysis of observational studies in the fields of chronic or acute diseases, interacting with investigators from various academic, hospital and industry institutions. My research interests are mainly focused on survival analysis methods and joint models for longitudinal and time-to-event data. Moreover, I am interested in statistical methods and tools for exploiting informational content of health administrative data and in machine learning (ML) algorithms for risk prediction in large datasets; in particular, I am working on the interpretability aspect of the ML applications in the health care context.

During my PhD studies, I was involved in experimental research in the neuroscience field and my contribution focused on exploiting the statistical structure of the cerebral sources with the aim of optimizing their estimation from time series of non-invasively electrophysiological recordings.

I am familiar with several statistical packages, in particular: R and IBM-SPSS; in addition, I also have a basic knowledge of SAS Enterprise Guide.

### Education and Degrees

**September 1989 - June 1994:** High school at the *Louis Pasteur Institute*, Rome (Italy). Diploma in scientific studies in July 1994, with full marks 60/60.

**October 1994 - October 1999:** Undergraduate studies in Statistics at the University *La Sapienza*, Rome (Italy).

**October 1999:** Degree in Statistics 110/110, University *La Sapienza*, Rome (Italy).

Title of the thesis: *Robust methods for the identification of outliers, estimate and comparison of mean length of stay in DRG (Diagnosis Related Groups)*, Supervisor: Prof. A. Rizzi.

**September 2003 - December 2006:** PhD studies in *Functional Neuroimaging: from cell to systems*, at the University of Chieti (Italy), Institute for Advanced Biomedical Technologies (ITAB).

**February 2007:** *Doctor Philosophiae* at the University of Chieti.

Title of the Thesis: *Sources separation algorithms from magnetoencephalographic signals*, Supervisor: Prof. V. Pizzella and Dr. F. Tecchio.

The PhD title obtained correspond to the European Research Council (ERC) sectors LS5\_10 (“Neuroimaging and computational neuroscience”) and LS7\_1 (“Medical engineering and technology”).

### Employments

**March 2000 - February 2002:** Post Lauream research contract at the Institute for Social and Preventive Medicine (IUMSP) in Lausanne (Switzerland).

**March 2002 - December 2006:** Research contract at the *Fatebenefratelli* Hospital, Rome (Italy). Also statistical consultant for different hospital departments (in particular anesthesiology and gynecology).

**January 2007 - April 2009:** Post-doctoral position at the Department of Public Health of University of

Turin (Italy).

**May 2009 - August 2011:** Post-doctoral position at the Department of Environmental Medicine and Public Health of University of Padova (Italy).

**September 2011-October 2016:** Post-doctoral position at the Department of Medicine of University of Trieste (Italy).

### **Continuing education course**

**May 2002:** *Analysis of Correlated data in Epidemiological Research* by Prof. D.G. Kleinbaum, University of Lausanne (Switzerland).

**March 2011:** *Longitudinal Data Analysis with Time-Dependent covariates for Inference and Prediction* by Prof. P.J. Heagerty, University of Milano Bicocca (Italy).

**March 2014:** *Survival and event history analysis* by Profs. O.O. Aalen, Ø. Borgan and H.K. Gjessing, University of Milano Bicocca (Italy).

**September 2018:** *Extended use of regression models for new epidemiologic designs and analyses* by Profs. M. Reilly and C. S. Tan, University of Milano Bicocca (Italy).

### **Research appointments**

**August 1999:** Pre Lauream position at the *Institute for Social and Preventive Medicine (IUMSP)* in Lausanne (Switzerland).

**May-June 2006:** Invited scientist at the *Wellcome Trust Laboratory for MEG Studies*, Aston University, Birmingham (United Kingdom).

### **Academic Appointments**

**January 2014:** Qualification for associate professor in Medical Statistics (06/M1) at the Italian national level.

**February 2017 – March 2021:** Member of the Scientific Board of the PhD course in Biostatistics and Clinical Epidemiology, University of Padova, Italy.

**November 2020:** Qualification for full professor in Medical Statistics (06/M1) at the Italian national level.

**April 2021:** Member of the Scientific Board of the PhD course in Applied Data Science and Artificial Intelligence, University of Trieste, Italy.

### **Funded Projects**

#### **With coordination role**

**April-December 2018:** Project manager for the statistical plan of the study: “*EAGLE study: Evidence of Anti-VEGF use in real Life Experience - A retrospective cohort study from secondary data source in Italy - Chart Review*”, funded by Novartis Farma S.p.A.

**November 2018-December 2019:** Project manager for the statistical analyses of the study: “*EAGLE study: Evidence of Anti-VEGF use in real Life Experience - A retrospective cohort study from secondary data source in Italy - Chart Review*”, funded by Novartis Farma S.p.A.

**January 2019-December 2020:** Project coordinator for: “*Machine Learning in cardiovascular data: applications and interpretation*”, funded by University of Trieste [Bando FRA 2018].

**October 2020-December 2021:** Project coordinator for: “*Artificial iNTelligence ExpLorIng genoType-phenoType Risk stratification in cardioMyopathies. The ANTE LITTERAM study*”, funded by University of Trieste [Bando FRA 2020].

**January 2021-December 2021:** Project coordinator for: “*Dyskalemia in chronic heart failure: prevalence, predictors and outcome. An observational cohort study from community setting*”, funded by Vifor Pharma.

**June 2021-December 2021:** Project manager for the statistical plan and analyses of the study: “*Prevalence, characteristics and outcome of hypercholesterolemia in patients with or without atherosclerotic (cardiovascular) diseases stratified by cardiovascular risk*”, funded by Novartis Pharma.

### **With participant role**

**February-December 2017:** In charge for the statistical plan and analyses of the project: “*Chronic Heart Failure: A silently progressing disease. A retrospective cohort study from secondary data source in Italy, EMR linked to Administrative DB*”, funded by Novartis Farma S.p.A.

**March 2019-February 2020:** In charge for the statistical plan and analyses of the project: “*Asymptomatic patients with chronic heart failure: assessing risk of adverse outcome and disease progression in community setting*”, funded by Novartis Farma S.p.A.

### **Scientific Societies**

**2015-2019:** Member of the Executive Board of the Italian Society of Medical Statistics and Clinical Epidemiology (SISMEC).

**December 2017--:** Member of the Executive Board of the Healthcare Research and Pharmacoepidemiology (HRP) Consortium.

I am currently a member of: SISMEC, Italian Society of Medical Statistics and Clinical Epidemiology, SIB, Italian Region of the International Biometrical Society (IBS), ISCB, International Society of Clinical Biostatistics and SIS, Italian Statistical Society (SIS).

**Associate Editor:** Epidemiology, Biostatistics and Public Health, EBPH (2017-2019); Statistical Methods & Applications (2019--).

### **Review Editor**

**2021 -** Frontiers in cardiovascular Medicine, section: Cardiovascular Epidemiology and Prevention

### **Other Professional Services**

**March - August 2001:** Collaboration with the *Institut de Police Scientifique et Criminologie (IPSC)* at the Lausanne University (Switzerland) for a project aimed to develop statistical methods to evaluate the link between two or more heroine seizures.

**April 2009 - December 2010:** Collaboration with the Department of Occupational Medicine, University of Trieste (Italy) to elaborate data of the Mesothelioma Registry of the Friuli-Venezia-Giulia region.

**September 2011 - March 2013:** Collaboration with the Department of Medicine and Biology at the University of Udine (Italy) for the research project *EPIAIR-2*, to elaborate data on the effects of air pollution on human health.

**October 2020-** Member of the Advisory Board of Rachael S.r.l. (Big Data research start-up).

### **Teaching experience**

**2005-06 and 2006-07:** Lecturer for a Bachelor course on Medical Statistics for the Nursing School at the University of Rome Tor Vergata, Department of Medicine and Surgery (30 hours each year).

**2008-09 and 2009-10:** Lecturer for a Master course on Medical Statistics for the Nursing School at the

Universities of Trieste and Udine, Department of Medicine (35 hours each year).

**2010-11 and 2011-12:** Lecturer for a Master course on Statistics for the School on Occupational Safety and Health at the Universities of Trieste and Udine, Department of Medicine (25 hours each year).

**From 2008-09 to 2012-2013:** Lecturer for a Bachelor course on Medical Statistics for the Nursing School at the University of Trieste, Department of Medicine (30 hours each year).

**Since 2009--:** Lecturer for a Bachelor course on Medical Statistics for the School on Occupational Safety and Health at the Universities of Trieste and Udine, Department of Medicine (20 hours each year).

**Since 2016--:** Lecturer for a Bachelor course on Medical Statistics for the Nursing School at the University of Trieste, Department of Medicine (36 hours each year).

**Since 2016--:** Lecturer for a Master course on Medical Statistics for the School of Medicine at the University of Trieste, Department of Medicine (20 hours each year).

**From 2016 to 2018:** Lecturer for a Bachelor course on Medical Statistics for the Physiotherapy School at the University of Trieste, Department of Medicine (20 hours each year).

**Since 2018--:** Lecturer for a Bachelor course on Medical Statistics for the Chemistry and Pharmaceutical Technology Department at the University of Trieste, (16 hours each year).

**Since 2018--:** Lecturer for a Bachelor course on Medical Statistics for Dentistry School at the University of Trieste, Department of Medicine (16 hours each year).

**Since 2019--:** Lecturer for a Master course in Health Data Analytics, master degree in Data Science and Scientific Computing, University of Trieste, (48 hours each year).

### **Publications**

Since 2003, I have published about 200 papers in international referred journals among which 1 Brain, 1 Neurology, 3 Human Brain Mapping, 1 Circulation, 1 Journal of the American College of Cardiology.

### **Key publications**

*Prevalence and prognostic significance of left ventricular reverse remodeling in dilated cardiomyopathy receiving tailored medical treatment*

M Merlo, SA Pyxaras, B Pinamonti, G Barbati, A Di Lenarda, G Sinagra  
Journal of the American College of Cardiology **57**, 1468-1476, 2011.

*Optimization of an independent component analysis approach for artifact identification and removal in magnetoencephalographic signals*

G Barbati, C Porcaro, F Zappasodi, PM Rossini, F Tecchio  
Clinical Neurophysiology **115**, 1220-1232, 2004.

*Prognostic predictors in arrhythmogenic right ventricular cardiomyopathy: results from a 10-year registry*

B Pinamonti, A M Dragos, S A Pyxaras, M Merlo, A Pivetta, G Barbati, A Di Lenarda, T Morgera, L Mestroni, G Sinagra  
European heart journal **32**, 1105-1113, 2011.

*Long-term evolution and prognostic stratification of biopsy-proven active myocarditis*

M Anzini, M Merlo, G Sabbadini, G Barbati, G Finocchiaro, B Pinamonti, A Salvi, A Perkan, A Di Lenarda, R Bussani, J Bartunek, G Sinagra  
Circulation **128**, 2384-2394, 2013.

*Prevalence and prognostic impact of non-cardiac co-morbidities in heart failure outpatients with preserved and reduced ejection fraction: a community-based study*

A Iorio, M Senni, G Barbati, S J Greene, S Poli, E Zambon, C Di Nora, G Cioffi, L Tarantini, A Gavazzi, G Sinagra, A Di Lenarda

European journal of heart failure **20**, 1257-1266, 2018.

H-index: 32. Source: <https://www.scopus.com/authid/detail.uri?authorId=8888542500>

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For the complete list of my publications see the UniTS website:

<https://www.units.it/persona/index.php/from/abook/persona/13474>

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