

# CURRICULUM VITAE

ANDREA GABRIO

Tel ♦ +31 0615675353 · email ♦ [a.gabrio@maastrichtuniversity.nl](mailto:a.gabrio@maastrichtuniversity.nl)

Office address ♦ DEB1 · UM - Department of Methodology and Statistics · 6229 HA Maastricht (NL)

Personal website ♦ <https://agabrioblog.onrender.com/> · GitHub page ♦ <https://github.com/AnGabrio>

## HIGHER EDUCATION

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### PhD Statistics

2015 - 2019

*Department of Statistical Science, University College London, London (UK)*

Project title: “Full Bayesian Models to Handle Missing Data in Health Economic Evaluations”

Status: awarded

Relevant Subjects: Statistics, Health Economics, Missing Data

### MSc Statistics and Econometrics

2014 - 2015

*Department of Mathematical Sciences, University of Essex, Colchester (UK)*

Dissertation title: “Forecasting the Equity Premium”

Final grade: Distinction

Relevant Subjects: Statistics, Mathematics, Econometrics

### MSc Economics and Finance

2012 - 2014

*Department of Economics, University of Pavia, Pavia (Italy)*

Dissertation title: “Dirichlet Process Mixture Models for Statistical Inference with Binary Data”

Final grade: 110/110 cum laude (equivalent to First-class honours)

Relevant Subjects: Economics, Statistics, Econometrics

### BS Economics

2009 - 2012

*Department of Economics, University of Pavia, Pavia (Italy)*

Dissertation title: “The Market of the Pollution Rights in Europe after the Kyoto Protocol ”

Final grade: 108/110 (equivalent to First-class honours)

Relevant Subjects: Economics

## POST-GRADUATE TRAINING

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### Short Course

2016

*The Academy for PhD Training in Statistics, University of Nottingham, Nottingham (UK)*

Course title: “Statistical Modelling and Statistical Asymptotics ”

### Short Course

2016

*Bayes-Pharma 2016, Katholieke Universiteit Leuven, Leuven (BE)*

Course title: “Bayesian methods for longitudinal data ”

### Short Course

2015

*MRC Biostatistics Unit, University of Cambridge, Cambridge (UK)*

Course title: “Bayesian Methods in Health Economics”

### Short Course

2015

*MRC Biostatistics Unit, University of Cambridge, Cambridge (UK)*

Course title: “Practical use of multiple imputation to handle missing data in STATA”

## RESEARCH AND WORK EXPERIENCE

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### **Assistant Professor in Statistics**

2020-2021

*Department of Methodology and Statistics, Faculty of Health Medicine and Life Sciences, Maastricht University, Maastricht (NL)*

Tasks: Methodological Research in the area of Statistics applied to economic evaluations

Development and application of statistical methods for handling missing data with focus on research areas such as Bayesian analysis, longitudinal analysis, multilevel analysis and trial-based cost-effectiveness analysis.

### **Statistical Consultant**

2020-2021

*Department of Methodology and Statistics, Faculty of Health Medicine and Life Sciences, Maastricht University, Maastricht (NL)*

Tasks: Statistical advice and support for other academics

Assistance and support on the choice of statistical methods on the analysis of data for academics from other departments/universities

### **Honorary Lecturer**

2020-2021

*Department of Statistical Science, University College London, London (UK)*

Collaboration on research projects and PhD supervision

Methodological Research in the area of Health Economics and Statistics

### **Research Fellow in Statistics and Health Economics**

2019

*Department of Statistical Science & Department of Primary Care and Population Health, University College London, London (UK)*

Tasks: Cost-Effectiveness Analysis Alongside Clinical Trials, Trial and Health Economic Analysis Plans, Methodological Research in the area of Health Economics and Statistics

Involvement in the design and statistical and health economic analysis of clinical trials at UCL Priment clinical trials unit in different disease/intervention areas, which include: behavioural interventions (e.g. sexual and mental health), schizophrenia and psychosis, ophthalmology, dementia and Parkinson.

### **External Collaborator for Consultancy and Pharmaceutical Companies on Health Economics and Statistics Related Projects**

2019

*Department of Statistical Science, University College London, London (UK)*

Cost-effectiveness analysis and costing of healthcare resource utilization for HTA submissions and payer engagement (collaboration with ICON plc and GSK)

Feasibility Network Meta-Analysis and NMA in acute myeloid leukemia (collaboration with IQVIA)

### **Member of the “Health Economics Analysis and Research Methods Team”**

since 2019

*Institute of Clinical Trials and Methodology, University College London, London (UK)*

Webpage: <https://www.ucl.ac.uk/clinical-trials-and-methodology/>

### **Research Visitor**

2018

*Department of Statistics, University of Florida, Gainesville (FL)*

Project title: “Modelling Missing Data in Longitudinal Studies for Health Economic Evaluations”

Collaborators: Prof. Michael J. Daniels (UF)

### **Peer-Reviewer**

since 2017

Academic Journals: *Health Economics, PharmacoEconomics, BMJ, Biometrical, Statistics in Medicine, IMA Journal of Management Mathematics, BMC Health Services Research, Health Services and Outcomes Research Methodology, Global Ecology and Biogeography*

**Member of the “Statistics for Health Economic Evaluation Research Group”** since 2015  
*Department of Statistical Science, University College London, London (UK)*

Webpage: <http://www.ucl.ac.uk/statistics/research/statistics-health-economics>

**Junior Analyst** 2016 - 2017  
*MAPI Group, London (UK)*

Tasks: Statistical Modelling, Health Economic Evaluation, Literature Review, Articles Screening, Meta-Analysis, Survival Analysis

## TEACHING

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**Teacher** 2020-2021  
*Department of Methodology and Statistics, Maastricht University, Maastricht (NL)*

*Undergraduate Courses:* Introduction to Statistical Methods for Data Analysis (BBS2003), Advanced Statistics and Research Methods (GZW3024), Statistics: Linear and Logistic Regression and Repeated Measures Analysis (BBS2007)

*Postgraduate Courses:* Advanced statistical analysis techniques (EPI4923)

**Supervisor of PhD students** 2019-2021  
*University College London, London (UK)*

- *Statistical Science Department.* PhD project: “Bayesian methods to handle item-level missingness in the analysis of patient questionnaires from clinical trials”

**Tutor/Demonstrator** 2018-2019  
*Department of Statistical Science, University College London, London (UK)*

*Undergraduate Courses:* Introductory Statistical Methods and Computing (STAT0021), Introduction to Practical Statistics (STAT0004)

**Supervisor of MSc students** 2018-2019  
*University College London, London (UK)*

- *Institute for Global Health.* Dissertation title: “Comparative analysis between multiple imputation and a fully Bayesian approach in cost-effectiveness analysis”
- *Statistical Science Department.* Dissertation title: “Dealing with Missing Data in Health Economic Evaluation”

**Marker** 2018-2019  
*Institute for Global Health, University College London, London (UK)*

- Course: Final Portfolios for the course Key Principles of Health Economics (KPHE)
- Course: Final Portfolios for the course Economic Evaluation in Health Care (EEHC)
- Oral presentation of dissertation for the MSc in Health Economics and Decision Science (HEDS)

**Workshops**  
*University College London, London (UK)*

- Understanding Health Economics in Clinical Trials - third edition. Institute of Clinical Trials and Methodology, University College London, London (UK), 2020
- Understanding Health Economics in Clinical Trials - second edition. Institute of Clinical Trials and Methodology, University College London, London (UK), 2020
- Understanding Health Economics in Clinical Trials. Institute of Clinical Trials and Methodology, University College London, London (UK), 2019
- Methods for Addressing Missing Data in Health Economic Evaluation. Pre-Conference Workshop, 39th Spanish Health Economics Association Conference, Universidad de Castilla-La Mancha, Albacete, (ESP), 2019

#### **Support Worker**

2015 - 2016

*Institute of Education, Student Disability Services, University College London, London (UK)*

#### **Tutor**

2012 - 2014

*Department of Economics, University of Pavia, Pavia (Italy)*

Undergraduate Courses: Microeconomics, Macroeconomics and Applied Statistics

Postgraduate Courses: Financial Econometrics

## **PUBLICATIONS**

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### **Peer-reviewed publications**

- Gabrio A (2021). "A Bayesian framework for patient-level partitioned survival cost-utility analysis" – arXiv version – <https://arxiv.org/abs/2011.10732>
- Gabrio A, Hunter R, Mason AJ, Baio G (2021). "Joint longitudinal models for dealing with missing at random data in trial-based economic evaluations", *Value in Health*, in-press version – <https://doi.org/10.1016/j.jval.2020.11.018>
- Clarke C, Brawley C, Ingleby F, Gabrio A, Dearnaley D, Matheson D, Attard G, Rush H, Jones R, Clarke N, Parmar M, Sydes M, Hunter R, James N (2020). "Addition of abiraterone to first-line long-term hormone therapy in prostate cancer (STAMPEDE): Model to estimate long-term survival, quality-adjusted survival, and cost-effectiveness", *Journal of Clinical Oncology*, 38(2),204 – [https://ascopubs.org/doi/abs/10.1200/JCO.2020.38.6\\_suppl.204](https://ascopubs.org/doi/abs/10.1200/JCO.2020.38.6_suppl.204)
- Gabrio A (2020). "Bayesian Hierarchical Models for the Prediction of Volleyball Results", *Journal of Applied Statistics*, 1-21 – <https://www.tandfonline.com/doi/full/10.1080/02664763.2020.1723506>
- Gabrio A, Daniels MJ, Baio G (2020). "A Bayesian Parametric Approach to Handle Missing Longitudinal Outcome Data in Trial-Based Health Economic Evaluations", *Journal of the Royal Statistical Society: Series A*, 183(2), 607-1629 – <https://rss.onlinelibrary.wiley.com/doi/full/10.1111/rssa.12522>
- Gabrio A, Manca A, Baio G (2019). "A Bayesian Statistical Economic Evaluation Methods for Health Technology Assessment", in Jones A, et al., editor(s), *Oxford Encyclopedia of Health Economics*, Oxford University Press, Oxford, UK – <https://oxfordre.com/economics/view/10.1093/acrefore/9780190625979.001.0001/acrefore-9780190625979-e-451>
- Gabrio A, Mason AJ, Baio G (2018). "A Full Bayesian Model to Handle Structural Ones and Missingness in Economic Evaluations from Individual Level Data", *Statistics in Medicine*, 38(8), 1399-1420 – <https://onlinelibrary.wiley.com/doi/full/10.1002/sim.8045>

- Gabrio A, Mason AJ, Baio G (2017). “Handling Missing Data in Within-Trial Cost-Effectiveness Analysis: A Review with Future Recommendations”, *PharmacoEconomics - Open*, 1(2) , 79-97 – <https://link.springer.com/article/10.1007/s41669-017-0015-6>

### Non-Peer-reviewed publications

- R package – “missingHE: A R package to handle missing data in health economic evaluations”. Available both on GitHub (<https://github.com/AnGabrio>) and CRAN (<https://cran.r-project.org/web/packages/missingHE/>)

### Conference Abstracts

- Gabrio A, Leurent, B (2021). “Linear mixed models to handle missing at random data in trial-based economic evaluations”, *HESG Conference 2021* – <https://hesg.org.uk/wp-content/uploads/2020/11/HESG-LSHTM-Abstract-Booklet-NS-10.11.20.pdf>
- Gabrio A, Hunter R, Mason AJ, Baio G (2020). “Choosing the missing data method in trial-based economic evaluations. How to make the right choice?”, *EUHEA Conference 2020* – [https://www.euhea.eu/abstracts\\_conference\\_2020.html](https://www.euhea.eu/abstracts_conference_2020.html)
- Gabrio A, Daniels MJ, Baio G (2019). “PNS76 A Bayesian Parametric Approach to Handle Missing Longitudinal Outcome Data in Trial-Based Health Economic Evaluations”, *Value in Health*, 22(3), S775 – [https://www.valueinhealthjournal.com/article/S1098-3015\(19\)34356-6/abstract](https://www.valueinhealthjournal.com/article/S1098-3015(19)34356-6/abstract)

## PRESENTATIONS AND POSTERS

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**Colloquium meeting** 2021

*Department of Methodology and Statistics, Maastricht University, Maastricht (NL)*

Presentation title: “Handling missing values in individual-level cost-effectiveness analyses”

**Health Economists Study Group Winter Meeting** 2021

*London School of Hygiene and Tropical Medicine - Online, London (UK)*

Presentation title: “Linear mixed models to handle missing at random data in trial-based economic evaluations”

**Statistics, Health Economics and Methodology Seminar** 2020

*PRIMENT Clinical Trials Unit, University College London, London (UK)*

- Presentation title: “Choosing the Missing Data Method in Trial-Based Economic Evaluations. How to Make the Right Choice?”

**Methodologists’ meeting** 2019

*Department of Primary Care and Population Health, University College London, London (UK)*

- Presentation title: “MissingHE: An R package to deal with missing data in trial based health economic evaluations”

**International Society for Pharmacoeconomics and Outcomes Research Europe** 2019

*Bella Center, Copenhagen (DK)*

- Poster title: “A Bayesian Parametric Approach to Handle Missing Longitudinal Outcome Data in Trial-Based Health Economic Evaluations”

- 5th International Clinical Trials Methodology Conference** 2019  
*Hilton Brighton Metropole, Brighton (UK)*
- Presentation title: “A Bayesian Parametric Approach to Handle Missing Longitudinal Outcome Data in Trial-Based Health Economic Evaluations”
- Health Economists’ Study Group Summer Meeting** 2019  
*University of East Anglia, Norwich (UK)*
- Presentation title: “Adjusting for Partially-Observed Baseline Utilities and Costs in Trial-Based Cost-Effectiveness Analysis: A Comparison of Different Methods and Their Performance”
- Statistics, Health Economics and Methodology Seminar** 2018  
*PRIMENT Clinical Trials Unit, University College London, London (UK)*
- Presentation title: “A Bayesian parametric approach to handle nonignorable missingness in health economic evaluations”
- Centre for Statistical Methodology Early Career Researcher Showcase** 2018  
*London School of Hygiene and Tropical Medicine, London (UK)*
- Presentation title: “A full Bayesian framework to handle data complexities and missingness in economic evaluations”
- Health Economics Symposium** 2018  
*Department of Statistical Science, University College London, London (UK)*
- Poster title: “A full Bayesian approach to handle structural ones and missingness in economic evaluations”
- Health Economics and Decision Science seminar** 2017  
*Institute of Global Health, University College London, London (UK)*
- Presentation title: “A full Bayesian approach to handle missingness in economic evaluations”
- The Third European Health Economics Association PhD student-supervisor and early career researcher conference** 2016  
*Universitat Internacional de Catalunya, Barcelona (ES)*
- Poster title: “Handling Missing Data in Within-Trial Cost-Effectiveness Analysis: A Review with Future Recommendations”
- Statistical Science seminar** 2016  
*Department of Statistical Science, University College London, London (UK)*
- Presentation title: “Full Bayesian models to handle missing values in cost-effectiveness analysis from individual level data”

## AWARDS

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- Costas Goutis Prize** 2017  
*University College London, London (UK)*
- Prize for: High quality research work leading to the transfer of registration from MPhil to PhD
- Research grant** 2016-2017  
*The Foundation Blanceflor Boncompagni - Ludovisi née Bildt, Stockholm (SE)*
- Grant/individual scholarship for promoting high quality PhD scientific research and education

## SKILLS

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<b>Software</b>	R (expert), OpenBUGS/JAGS/Stan (expert), VBA - Microsoft Excel (advanced), Matlab (advanced), STATA (good), SPSS (basic)
<b>Languages</b>	Italian (native), English (fluent), French (good)
<b>Areas of expertise</b>	Missing Data Analysis, Health Economic Evaluations, Longitudinal Models Design and Analysis of Clinical Trials Data, Decision Models, Bayesian Statistics, Statistical Computing, Sensitivity Analysis, Analysis of Health and Biomedical Data Statistical communication and graphics