Last update: January 2026

Personal details

Contact details

Name: Massimo Ventrucci
Date of birth: 26/09/1980
E-mail: massimo.ventrucci@unibo.it;
Web: http://www.unibo.it/docenti/massimo.ventrucci

Academic qualifications

2009: Phd in *Statistics*, Department of Statistical Sciences, University of Bologna
2005: Master's Degree in *Biostatistics*, Department of Statistical Sciences, University of Bologna
2004: Bachelor's Degree in *Statistics and computer science for business*, University of Bologna (first class honours)

Academic positions

October 2019 up to now: Associate Professor at the department of Statistical Sciences, University of Bologna

October 2016 - October 2019: Fixed Term Senior Researcher at the department of Statistical Sciences, University of Bologna

October 2011 - to May 2016: *Post-doc position as Research Assistant* at the Department of Statistical Sciences, University of Bologna

June 2009 - September 2011: *Post-doc position as Research Assistant* at the School of Mathematics and Statistics, University of Glasgow

Training (periods spent abroad)

October 2018 (3 weeks), visiting researcher at King Abdullah University of Science and Technology, Saudi Arabia

October 2017 (1 week), visiting researcher at Basque Centre for Applied Mathematics, Bilbao, Spain

January-June 2015 (6 months), visiting researcher at Department of Mathematics, Norwegian Institute of Technology, Trondheim, Norway

February-May 2008 (3 months), visiting Phd student at 'School of Mathematics and Statistics', University of Glasgow working at my PhD project supervised by Professor Marian Scott

Possession of the National Scientific Qualification

"Abilitazione Scientifica Nazionale I fascia nel Settore 13/D1 – STATISTICA da 1/12/2023 a 1/12/2034"

Research activity

Participation in national research centres and/or groups

2023-2025: Research Unit Member
Project 'PRIN2022' META^2: 'METAbarcoding for METAcommunities: towards a genetic approach to community ecology'. Local unit coordinator Maria Franco Villoria (University of Modena and Reggio Emilia). PI: Alex Laini (University of Turin).

2016-2019: Research Unit Member

Project ‘PRIN’ (20154X8K23) ‘Environmental Processes and human activities: capturing the interactions via statistical methods (EPHASTAT)’ founded by the Italian Ministry for Education, University and Research. Local unit coordinator and PI, Prof Daniela Cocchi.

2017: Principal investigator
Project ‘Finanziamento attività di base di ricerca’, 2017, funded by Ministero dell'Istruzione, dell'Università e della Ricerca, 3000 k.

2013-2016: Research Unit Member
Project ‘Futuro in Ricerca’ (RBFR12URQJ) ‘StEPhI: Metodi statistici per la modellazione di fenomeni ambientali: inquinamento, meteorologia, salute e loro interazioni’, funded by Ministero dell'Istruzione, dell'Università e della Ricerca. Local unit coordinator, Prof F. Greco. PI: Prof R. Ignaccolo.

2010-2012: Research Unit Member
Project ‘PRIN’ (2008CEFF37_001) 'Nuovi sviluppi teorici e pratici del campionamento da popolazioni finite', funded by Ministero dell'Istruzione, dell'Università e della Ricerca. Local unit coordinator and PI: Prof. Daniela Cocchi.

Participation in international research centres and/or groups

2022-2026: Research Unit Coordinator for the Department of Statistical Sciences, University of Bologna
GUIDEPREP - Growing Up in Digital Europe Preparation Phase (Horizon Europe - Grant Agreement n. 101078945). Coordinator for University of Bologna, Professor G. Ecchia, Department of Economics, University of Bologna. Principal coordinator of the project, Professor J. Symonds, University College Dublin.

2009: Research Unit Member
Project EPSRC grant reference EP/H024875/1 awarded under a Cross-Disciplinary Feasibility Account on ‘Computational Statistics and Cognitive Neuroscience’. Local unit coordinator Prof Adrian Bowman (University of Glasgow).

Participation in the editorial committees of journals

From 2024 Associate Editor of *Statistical Methods and Applications*

Receipt of international awards and recognitions

2010, Best poster presentation at the 25th International Workshop on Statistical Modelling, Glasgow, UK, July 5-9th, 2010. Authors and title: Ventrucci M, Bowman AW, Ferguson C, Gross J, Schoffelen JM. Spatiotemporal smoothing of brain magnetoencephalograpy data.

Scientific production

Articles in peer-reviewed journals

23. Ferrari L, **Ventrucci M** (2025+). A standardization procedure to incorporate variance partitioning-based priors in latent Gaussian models. *Scandinavian Journal of Statistics*. https://doi.org/10.1111/sjos.70042

22. Cocchi D, Colella EM, Ecchia G, Elefante E, Giovinazzi F, Messori L, Tosi F, **Ventrucci M**, Wakefield MJ (2026). Innovations and Challenges in Surveying Child Well-Being in Italy. *Social Indicators Research*, 181:33, https://doi.org/10.1007/s11205-025-03740-5

21. Page GL, **Ventrucci M**, Franco-Villoria M, Seeley MK (2025). Informed Bayesian Finite Mixture Models via Asymmetric Dirichlet Priors. *The Annals of Applied Statistics, 19 (3), 2412-2435.* DOI: 10.1214/25-AOAS2031

20. Angelini F, Castellani M, **Ventrucci M** (2025). Cumulative information on quality and willingness to pay: A study on wine evaluation. *Journal of Foodservice Business Research, 28(2), 295-333*, https://doi.org/10.1080/15378020.2023.2259315

19. Altieri L, Cocchi D, **Ventrucci M** (2024), Entropy-Based Assessment of Biodiversity, With Application to Ants' Nests Data. *Environmetrics,* 36: e2885. https://doi.org/10.1002/env.2885

18. Altieri L, Cocchi D, **Ventrucci M** (2023). Model-based entropy estimation for data with covariates and dependence structures. *Environmental and Ecological Statistics*, doi: 10.1007/s10651-023-00565-8

17. Guan Y, Page GL, Reich BJ, **Ventrucci M**, Yang S (2023). A spectral adjustment for spatial confounding. arXiv:2012.11767, *Biometrika*, 110(3), 699-719 https://doi.org/10.1093/biomet/asac069

16. Franco-Villoria M, **Ventrucci M**, Rue H (2022). Variance partitioning in spatio-temporal disease mapping models. *Statistical Methods in Medical Research*, 31 (8), 1566-1578 https://doi.org/10.1177/09622802221099642

15. Laini A, Burgazzi G, Chadd R, England J, Tziortzis I, **Ventrucci M**, Vezza P, Wood PJ, Viaroli P, Guareschi S (2022). Using invertebrate functional traits to improve flow variability assessment within European rivers. *Science of The Total Environment*, 832, 155047, https://doi.org/10.1016/j.scitotenv.2022.155047.

14. **Ventrucci M**, Cocchi D, Burgazzi G, Laini A (2020). PC priors for residual correlation parameters in one-factor mixed models, *Statistical Methods & Applications*, 29 (4), 745-765 https://doi.org/10.1007/s10260-019-00501-w

13. Franco-Villoria M, **Ventrucci M**, Rue H (2019). A unified view on Bayesian varying coefficient models, *Electronic Journal of Statistics* 13 (2), 5334-5359

12. Freni-Sterrantino A, **Ventrucci M**, Rue H (2018). A note on intrinsic conditional autoregressive models for disconnected graphs. *Spatial and Spatio-temporal Epidemiology*, vol. 26, 25-34. https://doi.org/doi: 10.1016/j.sste.2018.04.002

11. Greco F, **Ventrucci M**, Castelli E (2018). P-spline smoothing for spatial data collected worldwide, *Spatial Statistics*, 27, pp. 1-17, https://doi.org/doi: 10.1016/j.spasta.2018.08.008

10. Castelli E, Papandrea E, Valeri M, Greco F, **Ventrucci M**, Casadio S, Dinelli BM (2018). ITCZ trend analysis via geodesic P-spline smoothing of the AIRWAVE TCWV and cloud frequency datasets, *Atmospheric Research*, https://doi.org/doi:10.1016/j.atmosres.2018.07.019

9. **Ventrucci M**, Cocchi D, Scott M (2016). Smoothing of land use maps for trend and change detection in urbanization, *Environmental and Ecological Statistics*, 23, pp. 565-584, https://doi.org/doi:10.1007/s10651-016-0354-y

8. **Ventrucci M**, Rue H (2016). Penalized complexity priors for degrees of freedom in Bayesian P-splines. *Statistical Modelling*, 16, pp. 429-453, https://doi.org/10.1177/1471082X16659154

7. Bruno F, Cameletti M, Franco Villoria M, Greco F, Ignaccolo R, Ippoliti L, Valentini P, **Ventrucci M** (2016). A survey on ecological regression for health hazard associated with air pollution. *Spatial Statistics*, vol 18, pp. 276-299, doi: 10.1016/j.spasta.2016.05.003 (Authors in alphabetical order).

6. Bruno F, Greco F, **Ventrucci M** (2016). Non-parametric regression on compositional covariates using Bayesian P-splines. *Statistical Methods & Applications*, vol 25(1), pp. 75-88, https://doi.org/doi: 10.1007/s10260-015-0339-2 (Authors in alphabetical order).

5. Bruno F, Greco F, **Ventrucci M** (2015). Spatio-temporal regression on compositional covariates: Modelling vegetation in a Gypsum outcrop. *Environmental and Ecological Statistics*, vol. 22(3), pp. 445-463, https://doi.org/doi:10.1007/s10651-014-0305-4 (Authors in alphabetical order).

4. **Ventrucci M**, Bowman AW, Miller C, Gross J (2014). Quasi-periodic spatiotemporal models of brain activation in single-trial MEG experiments. *Statistical Modelling*, vol. 14(5), pp. 417-437, https://doi.org/doi:10.1177/1471082X14524673

3. Altieri L, Cocchi D, Pezzi G, Scott EM, **Ventrucci M** (2014). Urban sprawl scatterplots for Urban Morphological Zones data. *Ecological Indicators*, vol. 36, pp 315-323 ISSN:1470-160X, https://doi.org/doi: 10.1016/j.ecolind.2013.07.011 (Authors in alphabetical order).

2. **Ventrucci M**, Miller C, Gross J, Schoffelen JM, Bowman A (2011). Spatiotemporal smoothing of single trial MEG data. *Journal of Neuroscience Methods*, vol. 200; p. 219-228, ISSN: 0165-0270, https://doi.org/doi: 10.1016/j.jneumeth.2011.06.004

1. **Ventrucci M**, Cocchi D, Scott EM (2011). Multiple testing on standardized mortality ratios: a Bayesian hierarchical model for FDR estimation. *Biostatistics*. Vol 12 (1) pp. 51-67. https://doi.org/doi:10.1093/biostatistics/kxq040

Chapters in books

Colella, E.M., Ecchia G., Germani D., Primerano I., Santurro M., Tosi F., **Ventrucci M**, Wakefield M.J. (2025). *GUIDE: Innovations and Challenges to Survey Child Well-Being in Italy.* Springer Nature.

Cocchi D, **Ventrucci M** (2012). False discovery rate. In: *Encyclopedia of Environmetrics,* Second Edition. p. 1001-1007, John Wiley & Sons Ltd (Chichester, UK), ISBN: 978-0-470-97388-2, https:doi.org/doi: 10.1002/9780470057339.vnn169

Peer-reviewed abstracts in conference proceedings

Ferrari L, Franco-Villoria M, Page G, **Ventrucci M**, Laini A (2025). Clustering metabarcoding data: a model-based approach. Proceedings of the 39th International Workshop on Statistical Modelling Limerick City, Limerick, Ireland, 13-18 July, 2025. ISBN 978-1-0369-2711-0

Ferrari L, **Ventrucci M** (2024). Variance partitioning-based priors for species distribution models. *Proceedings of the 38th International Workshop on Statistical Modelling,* Durham University, UK, 14–19 July 2024. ISBN 978-0-907552-44-4

Ferrari L, **Ventrucci M**, Laini A (2023). Application of the hierarchical variance decomposition approach to an ecological case study with mixed effects. GRASPA 2023 Conference, Palermo, 10-11 July 2023. ISBN: 979-12-210-3389-2

Ventrucci M, Page GL (2023). Estimating short-term air pollution effects on health via spectral methods. *Proceedings of the 37th International Workshop on Statistical Modelling,* Dortmund 17-21 July 2023. Edited by: Elisabeth Bergherr, Andreas Groll, Andreas Mayr. ISBN: 978-3-947323-42-5

Altieri L, Cocchi D, **Ventrucci M**, Rue H (2023). New perspectives in the measurement of biodiversity. In FM Chelli, M Ciommi, S Ingrassia, F Mariani, MC Recchioni (Ed's), Book of short Papers SIS2023, Ancona, 21-23 June, 2023. Pearson. ISBN 9788891935618

Franco-Villoria M, **Ventrucci M**, Rue H (2022). Spatial heterogeneity of Covid-19 cases in Italy. Proceedings of the 10th International Workshop on Spatio-Temporal Modelling, 1-3 June 2022, Lleida, Spain. Edited by: Carles Comas and Jorge Mateu. Pages 73-76, ISBN: 978-84-9144-364-3, DOI: 10.21001/METMA_X

Ventrucci M, Page GL (2022). Adjusting for spatial confounding using eigendecomposed CAR models. *Proceedings of the 36th International Workshop on Statistical Modelling,* Trieste 18-22 July 2022. Edited by: Nicola Torelli, Ruggero Bellio, Vito Muggeo. ISBN: 978-88-5511-309-0

Franco-Villoria M, **Ventrucci M**, Rue H (2021). Revisiting space-time disease mapping models. In Proceedings of the GRASPA 2021 Conference. Edited by: Giovanna Jona Lasinio and Francesco Lagona, University of Rome "La Sapienza", 2021. Pages 73-76, ISBN 979-12-200-8496-3

Ventrucci M, Burgazzi G, Cocchi D, Laini A (2019). Prior specification in one-factor mixed models applied to community ecology data. GRASPA 2019 Conference, Pescara, 15-16 July 2019. ISBN: 978-88-97413-34-9

Ventrucci M, Burgazzi G, Cocchi D, Laini A (2019). Prior specification in one-factor mixed models applied to community ecology data. *Proceedings of the 34th International Workshop on Statistical Modelling,* Guimaraes 7-12 July. ISBN 978-989-20-9528-8.

Franco-Villoria M, **Ventrucci M**, Rue H (2019). Prior specification in flexible models. In G. Arbia, S. Peluso, A. Pini and G. Rivellini (Ed's), Book of short Papers SIS2019, Milan, 19-21 June, 2019. Pages 885-888. Pearson. ISBN 9788891915108

Franco-Villoria M, **Ventrucci M**, Rue H (2018) Constructing priors for varying coefficient models. 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), Pisa, 14-16 December 2018. ISBN 978-9963-2227-5-9

Ventrucci M, Burgazzi G, Cocchi D, Laini A (2018). Investigating patterns in macroinvertebrate communities using mixed models. *Proceedings of the 33th International Workshop on Statistical Modelling,* vol 2, p. 188-191, Bristol (UK), 15-20 July.

Ventrucci M, Franco-Villoria M, Rue H (2017). Penalized complexity priors for varying coefficient models. *Proceedings of the 32nd International Workshop on Statistical Modelling,* p. 212-216, Editors: Marco Grzegorczyk, Giacomo Ceoldo, Groningen (Netherlands), 2-7 July 2017.

Ventrucci M, Franco-Villoria M, Rue H (2017). Penalized complexity priors for varying coefficient models. "7th Annual Conference of the International Environmetrics Society joint with GRASPA 2017 on Climate and Environment 24-26 July 2017 – Bergamo Italy. ISSN 2037-7738.

Bruno F, Greco F, **Ventrucci M** (2014). Regression on compositional covariates: assessing substrate suitability for vegetation. *Joint METMAVII and GRASPA14Workshop*. Torino, Italy, September 10-12, 2014. ISSN: 2037-7738

Ventrucci M, Cocchi D, Scott EM (2013). Bayesian P-spline models for land use raster datasets. In: *Proceedings of the 28th International Workshop on Statistical Modelling*. p. 435-440, ISBN: 978-88-96251-47-8, Palermo, July 8-12

Cocchi D, **Ventrucci M**, Altieri L, Scott EM (2012). Modelling urban sprawl patterns in binary raster maps. In: *Proceedings of the 27th International Workshop on Statistical Modelling*. p. 441-446, ISBN: 978-80-263-0250-6, Prague, July 16-20

Altieri L, Cocchi D, Scott EM, **Ventrucci M** (2012). Assessing heterogeneity across Urban Morphological Zones from Corine land cover raster data. In: *Proceedings of the VI International Workshop on Spatio-Temporal Modelling*. p. 1-4, ISBN: 978-989-97939-0-3, Guimarães, Portugal, September 12-14.

Cocchi D, Altieri L, Scott EM, **Ventrucci M**, Pezzi G (2011). Statistical issues in the assessment of urban sprawl indices. In: *Spatial Data Methods for Environmental and Ecological Processes - 2nd Edition*. Proceedings. Foggia and Baia delle Zagare, 1-2 Settembre 2011, FOGGIA: CDP Service Edizioni, p. 1 - 4, ISBN: 978-88-96025-12-3.

Ventrucci M, Bowman AW, Miller C, Gross J, Gosh K (2011). A Dipole Model for MEG data. In: *Proceedings of the 26th International workshop on Statistical Modelling*. Valencia, Spain, 11-15 Luglio 2011, p. 636-641.

Ventrucci M, Bowman AW, Ferguson C, Gross J, Schoffelen JM (2010). Spatiotemporal smoothing of brain magnetoencephalograpy data. In: *Proceedings of the 25th International workshop on Statistical Modelling*. University of Glasgow, UK, July 5-9th, 2010, p. 551-554

Software

Developer of the 'inlaVP' R package available on github
https://github.com/massimoventrucci/inlaVP

Co-developer, with Garritt Page, of the 'eCAR' R package available on CRAN
https://cran.r-project.org/web/packages/eCAR/index.html

Conferences

Participation as a speaker at congresses and conferences of national interest

April 2024, "Investigating spatial confounding via Spatial-Scale Varying Coefficient Models". Invited speaker at *Complex Environmental Data and Modeling (CoEnv) PRIN workshop*, Dipartimento di Economia, Università degli Studi Gabriele D'Annunzio, Chieti-Pescara.

June 2018, "The statistical approach to risk analysis: methods and case study", University of Bologna. Invited talk, part of the Seminar Series organised by the UNIBO Working Group on Risk, project title "Multidisciplinary approaches to risk management".

Participation as a speaker at congresses and conferences of international interest

Invited talks

IES 2023, Statistical methods for evaluation and quality: techniques, technologies and trends, Aug 30-Sep 1, Pescara, Italy. Talk title: *Modelling air pollution effects on health via Bayesian spatio- temporal models*.

ICSDS 2022, IMS International Conference on Statistics and Data Science, December 13-16, 2022, Florence, Italy. Talk title: *Dealing with spatial confounding using Spatial-Resolution Varying Coefficient Models*. Work in collaboration with Garritt Page.

SIS 2022, 51st Scientific Meeting of the Italian Statistical Society, June 22-24, 2022, Caserta, Italy. Talk title: *Investigating effect of air pollution on health via Spatial-Resolution Varying Coefficient Models*. Work in collaboration with Garritt Page. ISBN:9788891932310 https://it.pearson.com/content/dam/region-core/italy/pearson-italy/pdf/Docenti/Università/Sis-2022-4c-low.pdf

ISBA 2021, World Meeting of the International Society for Bayesian Analysis, July 2nd 2021, online conference. Talk title: *Bayesian spatio-temporal smoothing using PC priors*. Work in collaboration with Maria Franco-Villoria and Haavard Rue.

DSSR 2020, Third international conference on Data Science and Social Research. Talk title: *Exploring the link between air pollution and COVID-19 with ecological regression methods*. pp.48-49. In - ISBN:978-886629-051-3. Work in collaboration with Garritt Page.

ERCIM 2020, 13th International Conference of the ERCIM WG on Computational and Methodological Statistics. Talk title: *Mixed models for spatially correlated data using PC priors*. pp.1-1. In Work in collaboration with Maria Franco-Villoria.

SIS 2019, Smart Statistics for smart applications, June 18-21 2019, Milan, Italy. Talk title: *Modelling complex interactions in spatio-temporal datasets*. Work in collaboration with Maria Franco-Villoria and Haavard Rue.

SIS 2017, Statistics and Data Science: new challenges, new generations, June 28-30 2017, Florence, Italy. Talk title: *Efficient smoothing for worldwide geostatistical data*. Work in collaboration with Fedele Greco.

RSS 2015 Annual Conference, September 7-10 2015, Exeter University, UK. Talk title: *Detecting trends and changes in urbanization via statistical modelling of land use maps*. Session 'Data Science - Urban informatics'. Work in collaboration with Daniela Cocchi and Marian Scott.

GRASPA 2015, June 15-16 2015, Bari, Italy. Session 'Statistical Modelling of Environmental Phenomena and their Interactions'. Talk title: *Non-parametric regression on compositional covariates*. Work in collaboration with Francesca Bruno and Fedele Greco.

Contributed talks/posters

Bayesian modelling of community ecology metabarcoding data. (Poster)
2024 ISBA World Meeting, Ca' Foscari University of Venice, Italy, July 1-7, 2024.
Work in collaboration with: Ferrari L, Franco-Villoria M, Laini A.

Informed Finite Mixture Models. (Talk)
1st Bergamo Workshop in Econometrics and Statistics, Bergamo 15-16 September 2022.
Work in collaboration with: Page G, Franco-Villoria M.

Adjusting for spatial confounding using eigendecomposed CAR models. (Talk)
36th International Workshop on Statistical Modelling, Trieste 18-22 July 2022.
Work in collaboration with: Page GL.

Prior specification in one-factor mixed models applied to community ecology data. (Poster)
GRASPA 2019 Conference, Pescara, July 15-16, 2019.
Work in collaboration with: Burgazzi G, Cocchi D, Laini A.

Prior specification in one-factor mixed models applied to community ecology data. (Poster)
34th International Workshop on Statistical Modelling, Guimaraes, July 7-12, 2019.
Work in collaboration with: Burgazzi G, Cocchi D, Laini A.

Spatially varying coefficient models for areal data. (Poster)
49th Scientific meeting of the Italian Statistical Society, Palermo 20-22 June 2018.
Work in collaboration with: Franco-Villoria M, Rue H.

Investigating patterns in macroinvertebrate communities using mixed models. (Poster)
33th International Workshop on Statistical Modelling, Bristol (UK), 15-20 July, 2018.
Work in collaboration with: Burgazzi G, Cocchi D, Laini A.

Penalized complexity priors for varying coefficient models. (Talk)
32nd International Workshop on Statistical Modelling, Groningen (Netherlands), 2-7 July, 2017.
Work in collaboration with: Franco-Villoria M, Rue H.

Penalized complexity priors for varying coefficient models. (Poster)
7th Annual Conference of the International Environmetrics Society joint with GRASPA 2017 on Climate and Environment 24-26 July 2017 – Bergamo Italy
Work in collaboration with: Franco-Villoria M, Rue H.

Penalized complexity priors for varying coefficient models. (Talk)
32nd International Workshop on Statistical Modelling, Groningen, Netherlands, 2-7 July 2017.
Work in collaboration with: Franco-Villoria M, Rue H.

Efficient smoothing for worldwide geostatistical data. (Talk)
SIS2017, Statistics and Data Science: new challenges, new generations. Florence 28-30 June, 2017.
Work in collaboration with: Greco F.

Efficient smoothing for spatial data collected over the globe. (Talk)
International Workshop on 'Statistical inference for assessing and monitoring natural resources', 10-11 November 2016, Siena, Italy.
Work in collaboration with: Greco F.

PC priors for degrees of freedom in P-spline models. (Poster)

Fifth Workshop on Bayesian Inference for Latent Gaussian Models, 14-16 September 2016, Bath, UK.
Work in collaboration with: Rue H.

Priors for degrees of freedom in penalized spline regression. (Talk)
Bayesian Young Statisticians Meeting (BAYSM), 19-21 June 2016, Florence, Italy.
Work in collaboration with: Rue H.

Penalized Complexity priors for degrees of freedom in P-spline models. (Poster)
Autumn meeting on Latent Gaussian Models, 17-18 September 2015, Trondheim, Norway.
Work in collaboration with: Rue H.

Assessing heterogeneity across Urban Morphological Zones from Corine land cover raster data. (Poster)
Workshop on Spatio-Temporal Modelling. Guimarães, Portugal, September 12-14, 2014.
Work in collaboration with: Bruno F, Greco F.

Regression on compositional covariates: assessing substrate suitability for vegetation. (Talk)
Joint METMAVII and GRASPA14 Workshop. Torino, Italy, September 10-12, 2014.
Work in collaboration with: Bruno F, Greco F.

Bayesian P-spline models for land use raster datasets. (Talk)
28th International Workshop on Statistical Modelling. Palermo, July 8-12, 2013.
Work in collaboration with: Cocchi D, Scott EM.

Modelling urban sprawl patterns in binary raster maps. (Poster)
Proceedings of the 27th International Workshop on Statistical Modelling, Prague, July 16-20, 2012.
Work in collaboration with: Cocchi D, Altieri L, Scott EM.

A Dipole Model for MEG data. (Talk)
26th International workshop on Statistical Modelling. Valencia, Spain, July 11-15, 2011.
Work in collaboration with: Bowman AW, Miller C, Gross J, Gosh K.

Spatiotemporal smoothing for brain-imaging MEG data. (Poster)
Spatial Statistics 2011. UNIVERSITY OF TWENTE, ENSCHEDE, 23-25 March 2011.
Work in collaboration with: Bowman AW, Miller C, Gross J, Schoffelen JM.

Spatiotemporal smoothing of brain magnetoencephalograpy data. (Poster)
25th International workshop on Statistical Modelling. University of Glasgow, UK, July 5-9th, 2010
Work in collaboration with: Bowman AW, Ferguson C, Gross J, Schoffelen JM.

Multiple testing on Standardized Mortality Ratios: a Bayesian Hierarchical model for False Discovery Rate estimation. (Talk)
20th Annual Meeting of the International Environmetrics Society. Bologna, July 5-9, 2009.

Multiple testing in spatial epidemiology: a Bayesian approach. (Talk)
XVIII Congresso della Società Italiana di Ecologia, Ecologia, emergenza pianificazione, Parma, September 1-3, 2008
Work in collaboration with: Cocchi D.

Departmental seminars (outside conferences)
October 19, 2017, “PC-priors for Bayesian P-splines”, Basque Centre for Applied Mathematics, Bilbao.

February 4, 2011, “Spatiotemporal smoothing of magnetoencephalography (MEG) data”, School of Mathematics and Statistics, University of Glasgow.

April 1, 2011 “False Discovery Rate based rules for selecting high risk areas in an exploratory epidemiological study”, Statistics and Operations Research, Public University of Navarra.

Institutional activities

PhD committees

February 2025. Examiner and member of the evaluation committee for the PhD thesis by Matteo Gianella. Thesis title: Bayesian nonparametric analysis of spatial and spatio-temporal data: modelling and computation. Politecnico di Milano.

External Reviewer of PdD and Master thesis

External reviewer of 5 PhD thesis:

1) Matteo Gianella (2025, Politecnico di Milano). Thesis title: Bayesian Nonparametric analysis of spatial and spatio-temporal data: modelling and computation. Supervisor Professor Alessandra Guglielmi
2) Claudio Rubino (2023, Università degli Studi di Palermo). Thesis title: INLA-SPDE spatial modelling and Bayesian mediation analysis: insights, advances and applications. Supervisor Professor Giada Adelfio
3) Angela Ferretti (2021, Università G. D'annunzio, Chieti-Pescara). Thesis title: Conditional spatial models for regular lattice data. Supervisor Professor Luigi Ippoliti
4) Diego Battagliese (2020, Università La Sapienza, Roma). Thesi title: Penalising model complexity. Supervisor Professor Brunero Liseo
5) Tullia Padellini (2019, Università La Sapienza, Roma). Thesis title: Interpretable statistics for complex modelling: quantile and topological learning. Supervisor Professor Pierpaolo Brutti

External reviewer of 1 Master's thesis

1) Jostein Aastebøl Aanes (2025, Norwegian University of Science and Technology, Norway). Thesis title: Specification of space-time interactions in Bayesian hierarchical models for predicting future disease burden. Supervisor Professor Andrea Riebler

Other evaluation committees

January 2025. Member of the evaluation committee for an RTT position at MEMOTEF Department, Sapienza Università di Roma.

February 2025. Member of the evaluation committee for an RTT position at the Department of Economics and Statistics Cognetti De Martiis, University of Turin.

Member of Scientific committees for conferences

Member of the scientific committee of: International Workshop on Statistical Modelling (IWSM) 2026, Oslo, July 2026, organized by the Statistical Modelling society

Member of the scientific committee of: GRASPA 2025, Roma 15-17 September 2025 (biennial conference of the Italian research group for Environmental Statistics GRASPA-SIS)

Member of the scientific committee of: EnvEcoStats 2025, Lancaster 1-3 July 2025 (Environmental and Ecological Statistics Conference sponsored by the International Environmental Society and the Royal Statistical Society)

Member of the scientific committee of: GRASPA 2023, Palermo 10-11 July 2023 (biennial conference of the Italian research group for Environmental Statistics GRASPA-SIS)

Member of the scientific committee of: GRASPA 2021, Roma 7-9 June 2021 (online biennial conference of the Italian research group for Environmental Statistics GRASPA-SIS)

Member of the scientific committee of: SIS 2020, Pisa 22-24 June 2020 (this conference was cancelled due to covid restrictions)

Member of the scientific committee of: GRASPA 2019, Pescara 15-16 July 2019 (biennial conference of the Italian research group for Environmental Statistics GRASPA-SIS)

Organizational work for conferences

June 2025, Session organizer: "Statistics for Innovation: complex environmental data modeling", SIS 2025, Genova 16-18 June 2025

February 2023, Local organizer "Young Environmental Statisticians meeting", Università degli Studi di Bologna, Dipartimento di Scienze Statistiche, Bologna, February 3, 2023.

July 2023, Session organizer: "Controlling for unmeasured confounding: statistical issues and recent advances in air pollution and health studies", GRASPA 2023 Conference, Palermo 10-12 July 2023. (co-organized with Luigi Ippoliti and Laura Ventura).

June 2021, Session organizer: "Modelling data with complex dependencies", GRASPA 2021 Conference, Rome 7-9 June 2021.

July 2019, Session organizer: "Assessment of health risks from environmental stressors" (co-organized with Andrea Ranzi) GRASPA 2019 and European regional conference of The International Environmetrics Society, Pescara 15-16 July 2019

July 2017, Session organizer: "Spatial Modeling for Epidemiological data" (co-organized with Maria Franco Villoria) Joint TIES-GRASPA meeting on Climate and Environment, Bergamo, 24-26 July 2017

Referee activity

Journal of the American Statistical Association (2018, 1 paper; 2024, 1 paper)
Statistical Methods in Medical Research (2023, 1 paper)
Statistical Methods & Applications (2018, 2 papers; 2021, 1 paper; 2022, 1 paper)
Statistical Modelling (2012, 1 paper; 2019, 1 paper)
Statistics and computing (2024:1 paper, 2019: 1 paper)
Spatial Statistics (2018, 1 paper; 2021, 2 paper)
Computational Statistics & Data Analysis (2018, 1 paper; 2020, 1 paper; 2021, 1 paper)
Computational Statistics (2017, 1 paper)
Journal of Agricultural, Biological and Environmental Statistics (2023, 1 paper)
Journal of Statistical Computation and Simulation (2019, 1 paper)
Spatial and Spatio-temporal Epidemiology (2024, 1 paper)
Environmetrics (2015, 1 paper; 2025, 2 paper)
Environmental and Ecological Statistics (2013, 1 paper; 2024; 3 paper)
Socio-Economic Planning Sciences (2023, 1 paper; 2025, 1 paper)
Stochastic Environmental Research and Risk Assessment (2015, 1 paper)
Statistica (2019, 1 paper)
Atmospheric Environment (2022, 1 paper)
BMC Public Health (2022, 1 paper)
Humanities & Social Sciences Communications (2024, 1 paper)

Activity within the department of Statistical Sciences, University of Bologna

2025 up to now; Referente Dipartimentale per la Mobilità Studenti Overseas.

2024 up to now; member of the evaluation committee "fase 4 di Area Statistica" for degree courses of the Department DSE and DISA, University of Bologna

2021 up to now; member of the evaluation committee ‘fase 4’ SECS-01 + SECS-03 for degree courses of the Department of Economics, University of Bologna, Rimini campus

2021 up to now; responsible of the Erasmus exchange programme with Université Catholique de Louvain (Erasmus Plus - Key Action 1)

2021 up to now; Member of the Board of the center ALMA-AI (‘Centro Alma Mater Research Institute for Human - Centered Artificial Intelligence’).

2016-2017; Member of Department Council (‘Giunta di dipartimento’) as representative for research fellows of the Department of Statistical Sciences, University of Bologna

September 2017-2018-2019-2021: Event organizer at European Research night, Department of Statistical Sciences, University of Bologna, Rimini campus

Roles in scientific societies and Affiliations

2025 up to now, secretary of the “Statistical Modelling Society” (http://www.statmod.org/index.html).

2025-27; Elected member of the executive committee of the “Statistical Modelling Society”

2024 up to now, chair of the membership committee of “TIES” (The International Environmental Society)

2023-2025 secretary of “GRASPA” (“Research group for Statistical Applications to Environmental Problems”, section of the Italian Statistical Society https://graspa.org)

2022-24; Elected member of the executive committee of the “Statistical Modelling Society”

2023-25; Elected member of the scientific board of “GRASPA”

2022 up to now, Honorary Research Fellow, School of Mathematics & Statistics, University of Glasgow.

2020-22; Elected member of the scientific board of “GRASPA”

Member of:
Institute of Mathematical Statistics (from 2024)
Società Italiana di Statistica (from 2017),
Statistical Modelling Society (almost every year from 2009),
The International Environmetrics Society (TIES, from 2024),

Teaching activities

Face-to-face teaching activities

Academic years: **2023/24; 2024/25**:
‘Statistics for Social Sciences’. Componente del corso integrato QUANTITATIVE METHODS (I.C.). Second cycle degree programme (LM) in Tourism Economics and Management, University of Bologna. 30h, credits 6. SSD: SECS-S/01. Language: english. Course holder (titolare del corso).

Academic years: **2019/20; 2020/21; 2021/22; 2022/23**:
‘Statistics for Social Sciences’. Insegnamento. Second cycle degree programme (LM) in Tourism Economics and Management, University of Bologna. 30h, credits 6. SSD: SECS-S/01. Language: english. Course holder (titolare del corso).

Academic year: **2024/25**

‘Statistics’. Insegnamento. First cycle degree programme (L) in Economics of Tourism and Cities, University of Bologna. 60h, credits 8. SSD: SECS-S/01. Language: english. Course holder (titolare del corso).

Academic years: **2016/17; 2017/18; 2018/19; 2019/20; 2020/21; 2021/22; 2022/23; 2023/24**:
‘Statistica’. Insegnamento. First cycle degree programme (L) in Economics of Tourism, University of Bologna. 60h, credits 8. SSD: SECS-S/01. Language: italian. Course holder (titolare del corso).

Academic years **2018/19; 2019/20; 2020/21; 2021/22; 2022/23; 2023/24; 2024/25:**
‘Epidemiologia Ambientale’. Modulo 1. First cycle degree programme (L) in Statistical Sciences, University of Bologna. 30h, total number of credits 8 (course divided in 2 modules). SSD: SECS-S/01. Language: italian. Course holder (titolare del corso).

Academic year **2017/18:**
‘Epidemiologia Ambientale’. Modulo 2. First cycle degree programme (L) in Statistical Sciences, University of Bologna. 30h, total number of credits 8 (course divided in 2 modules). SSD: SECS-S/01. Language: italian. Reponsible for module 2, course holder Professor Rossella Miglio.

Academic year **2016/17**:
‘Biometria e statistica 2’. Modulo 2. Second cycle degree programme (LM) in Sciences and Management of Nature. 30h, total number of credits 6 (course divided in 2 modules). SSD: SECS-S/01. Language: italian. Course holder Dott Fabrizio Alboni.

Academic years **2014/15; 2015/16:**
‘Biometria Statistica 2’. Modulo 2. Second cycle degree programme (LM) in Sciences and Management of Nature. 30h, total number of credits 6 (course divided in 2 modules). SSD: SECS-S/01. Language: italian. Course holder Dott Fabrizio Alboni.

Academic year **2013/14** ‘Biometria Statistica 2’. Modulo 2. Second cycle degree programme (LM) in Sciences and Management of Nature. 30h, total number of credits 6 (course divided in 2 modules). SSD: SECS-S/01. Language: italian. Course holder Professor Francesca Bruno

February 2025:
I taught part of a PhD course at the Doctorate School “PhD in Biological Sciences and Applied Biotechnologies”, University of Turin, title: Introduction to Bayesian Statistics (4h).

June 2018 and June 2017:
I taught part of the PhD course on Bayesian Inference within the PhD programme in Statistics, Department of Statistical Sciences, University of Bologna (6 hours).

Supplementary teaching activities

February 2010 and February 2011:
Tutor for the course “2X (Probability II)” at the School of Mathematics and Statistics, University of Glasgow. Holder of the course: Professor Tereza Neocleous.

September 2010:
Tutor for the course “2R (Probability)”, School of Mathematics and Statistics, University of Glasgow. Holder of the course: Professor Ludger Evers.

Supervision of 2 PhD students in Statistics, Department of Statistical Sciences, University of Bologna:

- Luisa Ferrari, 37 cycle (finished in March 2025). Thesis title: Variance Partitioning priors for latent Gaussian Models.
- Marika D’Agostini, 39 cycle (currently at third year). Thesis title: Bayesian Hierarchical Models for Urban Vulnerability Evaluation. Scolarship funded by Arpa E-R.

Supervision of undergraduate level students (not including co-supervision):

- First cycle degree (11 students)

- Second cycle degree (1 students)
- Others (1 student doing “tirocinio curriculare”)

Language skills

Italian (native language),
English (CEFR Level C1; Cambridge C1 Advanced exam, overall score 196; year 2021)
Spanish (very good at understanding, fair at speaking)