EUROPEAN CURRICULUM VITAE FORMAT

Informazioni personali

Nome / Cognome	**Alessio Lachi**
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Email Professionale	alessio.lachi@unicamillus.org
Sito web	alessio.lachi
Nazionalità	Italian
Data di nascita	11/14/1996
Sesso	Male

Current role

Junior Assistant Professor - RTD A (scientific disciplinary area MEDS-24/A) in the Saint Camillus International University of Health and Medical Sciences (UniCamillus) in Rome (Italy)

Teaching in Ph.d

2023/2024 — **Compartmental models for the analysis of contagion dynamics: inference and GSA - 12 hours / 2 CFU** (scientific disciplinary area MEDS-24/A) for the Ph.D. program in Mathematics, Computer Science, Statistics of the University of Florence (UNIFI) in Florence (Italy)

Teaching in MD

2024/2025 — **Medical Statistics - 20 hours / 2 CFU** (scientific disciplinary area MEDS-24/A) for the master degree program in Medicine and Surgery of the Saint Camillus International University of Health and Medical Sciences (UniCamillus) in Cefalù (Italy)

2024/2025 — **Medical Statistics - 20 hours / 2 CFU** (scientific disciplinary area MEDS-24/A) for the master degree program in Dentistry and Dental Prosthetics of the Saint Camillus International University of Health and Medical Sciences (UniCamillus) in Rome (Italy)

2024/2025 — **Medical Statistics - 16 hours / 2 CFU** (scientific disciplinary area MEDS-24/A) for the master degree program in Diagnostic Technical Health Professions Sciences of the University of Florence (UNIFI) in Florence (Italy)

Teaching in BD

2024/2025 — **Medical Statistics - 10 hours** / **1 CFU** (scientific disciplinary area MEDS-24/A) for the bachelor degree program in Radiology, Diagnostic Imaging and Radiotherapy Techniques of the Saint Camillus International University of Health and Medical Sciences (UniCamillus) in Rome (Italy)

Teaching experiences

06/26/2023 — **Lesson of statistical inference** (scientific disciplinary area MEDS-24/A) for the master degree program in Chronicity and Soothing Therapy in the School of Human Health Sciences of the University of Florence (UNIFI) in Florence (Italy)

12/6/2022; 12/13/2022 — **Lesson of a base of statistics in R** (scientific disciplinary area MEDS-24/A) for the bachelor degree program in Pharmacy in the School of Human Health Sciences of the University of Florence (UNIFI) in Florence (Italy)

05/16/2022 — **Lesson of programming in R** (scientific disciplinary area MEDS-24/A) for the postgraduate school program in Medical Physics in the School of Human Health Sciences of the University of Florence (UNIFI) in Florence (Italy)

11/01/2019 - 10/31/2020 — **Teaching tutor of Statistics** (scientific disciplinary area STAT-01/A) for the Department of Statistics, Computer Science, Applications Giuseppe Parenti (DiSIA) of the University of Florence (UNIFI)in Florence (Italy)

Working experiences

10/01/2024 - present — **Junior Assistant Professor - RTD A** (scientific disciplinary area MEDS-24/A) in the Saint Camillus International University of Health and Medical Sciences (UniCamillus) in Rome (Italy)

12/01/2023 - 09/30/2024 — **Fixed Term Researcher - level III** in the Epidemiology and Health Research Lab in the Institute of Clinical Physiology (IFC) of the National Research Council of Italy (CNR) in Pisa (Italy), carrying out epidemiological statistical analysis inside the EPID projects (https://www.epid.ifc.cnr.it)

11/01/2023 - 11/30/2023 — **Post-doctoral research fellowship** (scientific disciplinary area STAT-01/A) in the Department of Statistics, Computer Science, Applications Giuseppe Parenti (DiSIA) of the University of Florence (UNIFI) in Florence (Italy), carrying out forensic medicine statistical analysis

04/01/2018 - 10/31/2019 — **Statistician** at the Oncologic Network, Prevention and Research Institute (ISPRO) in Florence (Italy), carrying out epidemiological statistical analysis inside the project TackSHS (http://tackshs.eu/)

03/01/2016 - 06/30/2016 — **Statistician** at the High School of Business and Management Duca D'Aosta in Florence (Italy), carrying out surveys analysis

05/01/2014 - 06/30/2014 — **Accountant** at the Studio Bigazzi, Santi e Associati in Florence (Italy), carrying out private accounting activities

11/01/2013 - 04/30/2014	**Accountant** at the Tuscany Regional Council in Florence (Italy), carrying out public accounting activities

Education

11/01/2020 - 05/23/2024	**Ph.D. in Mathematics, Computer Science, Statistics** at the University of Florence (UNIFI) in Florence (Italy), with a dissertation titled **Compartmental Models and Uncertainty Quantification in Epidemiology** (https://hdl.handle.net/2158/1361075) supervised by Professor Michela Baccini and Doctor Cecilia Viscardi (scientific disciplinary area MEDS-24/A)
09/01/2018 - 10/12/2020	**Master's Degree in Statistics (LM82)** at the University of Florence (UNIFI) in Florence (Italy) with a grade of 110/110 cum laude, with a dissertation titled **Sexual behaviors of university students across Italian regions: the role of parental socio-economic status** (https://sol.unifi.it/tesi/consultazione) supervised by Doctor Raffaele Guetto and Professor Daniele Vignoli (scientific disciplinary area STAT-03/A)
09/01/2015 - 07/19/2018	**Bachelor's Degree in Statistics (L41)** at the University of Florence (UNIFI) in Florence (Italy) with a grade of 104/110, with a dissertation titled **Mortality analysis in a cohort of Tuscany workers of glass** supervised by Professor Emanuela Dreassi and Doctor Giuseppe Gorini (scientific disciplinary area STAT-01/A)
09/01/2010 - 07/02/2015	**High school graduation in Business information systems expert** at the School of Business and Management Duca D'Aosta in Florence (Italy) with a grade of 92/100

Visiting research fellow

02/01/2023 - 05/31/2023	At the **UPF Barcelona School of Management (UPF-BSM)** of the University Pompeu Fabra (UPF) of Barcelona in Barcelona (Spain) with **Professor Andrea Saltelli**

Summer/Winter schools

06/24/2024 - 06/28/2024	**Sensitivity Analysis of Model Output** at the University of Parma (UNIPR) in Parma (Italy)
06/12/2023 - 06/16/2023	**Applied Bayesian Statistics** at the University of Florence (UNIFI) in Florence (Italy)
09/26/2022 - 09/30/2022	**Bio-statistics and epidemiological methods** at the University of Padoa (UNIPD) in Padoa (Italy)

Other titles

Cultore della materia in the scientific disciplinary area MEDS-24/A for the University of Florence (UNIFI) in Florence (Italy)

24 CFUs course required for teaching

Research areas

Biostatistics, Population study, Frequentist inference, Bayesian inference, Compartmental model, Likelihood free inference, Uncertainty quantification, Sensitivity analysis, Health policies impact, Causal inference, Systematic review, Meta analysis, Multiple imputation, Statistical learning

Language skills

Madrelingua   **Italian**

Other language(s)

Autovalutazione
Livello europeo[(*)]

Comprensione		Parlato		Scritto
Ascolto	Lettura	Interazione	Produzione orale	
B1	B1	B1	B1	B1
A1	A1	A1	A1	A1

English
French

[(*)]*Quadro comune europeo di riferimento per le lingue* (ERL)

Computer skills

Expert user of R, Julia, and Python and knowledge of Visual Basic and Fortran
Expert user of STATA and knowledge of SAS and SPSS
Knowledge of database management through the use of Access and MySQL
Knowledge of geographic-database management through QGIS
Expert user of latex and knowledge of HTML
Expert user of Windows, macOS, and Linux operating systems
Expert user of Windows Office productivity package and similar

Research projects

2024   **EPID projects: ESPAD, IPSAD, GAPS, P.I.N.K. (https://www.epid.ifc.cnr.it/)**, Epidemiology of Social Phenomena

2020 - 2023   **ACAB (https://www.acab-toscana.it)**, Attributable Cancer Burden in Tuscany: smoking, environmental and occupational risk factors and evaluation of prevention strategies, a project funded by the Tuscany Region

2018 - 2019   **TackSHS (http://tackshs.eu)**, European Tackling Secondhand Tobacco Smoke and E-cigarette Emissions project, a project funded by the European Union's

Invited talks

05/28/2023   A compartmental model for smoking habits in Tuscany, University Pompeu Fabra School of Management (UPF-BSM) in Barcelona (Spain)

12/18/2022   ABC in a compartmental model for smoking habit dynamics, XV International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics) in London (United Kingdom)

10/23/2019   Fractions attributable to lifestyles in Italian regions, XLIII National Conference of Italian Epidemiology Association (AIE) in Catania (Italy)

Contributed talks

04/17/2024   Smoking dynamics in Tuscany (Italy) under alternative tobacco control policies: Robustifying inference and forecasting via uncertainty propagation and Global Sensitivity Analysis, XLVIII National Conference of Italian Epidemiology Association (AIE) in Riccione (Italy)

12/16/2022   ABC in a compartmental model for smoking habit dynamics, I International Conference on Statistics and Data Science (ICSDS) in Florence (Italy)

10/27/2022	A compartmental model for smoking habits in Tuscany, XXVIII International Conference of Annual Population Postgraduate Conference (PopFest) in Florence (Italy)
06/23/2022	Compartmental models in epidemiology: Application on Smoking Habits in Tuscany, LI National Conference of Italian Statistical Society (SIS) in Caserta (Italy)
10/25/2019	The impact of exposure to secondhand smoke in children in Italy in 2017, XLIII National Conference of Italian Epidemiology Association (AIE) in Catania (Italy)
10/24/2019	Deaths attributable to smoking in Italian regions in 2018, XLIII National Conference of Italian Epidemiology Association (AIE) in Catania (Italy)
10/23/2019	Impact of the European Directive on smoking and e-cigarettes among Italian adolescents, XLIII National Conference of Italian Epidemiology Association (AIE) in Catania (Italy)

Poster presentations

05/30/2024	Smoking dynamics in Tuscany (Italy) under alternative tobacco control policies: Robustifying inference and forecasting via uncertainty propagation and Global Sensitivity Analysis, X conference of StaTalk (SIS) in Florence (Italy)
04/18/2023	Approximate Bayesian inference for smoking habit dynamics in Tuscany, XLVII conference of Italian Epidemiology Association (AIE) in Pisa (Italy)
06/29/2022	Compartmental model in epidemiology: An application on smoking habits, XVII International Conference of Society for Bayesian Analysis (ISBA) in Montreal (Canada)
01/31/2020	Social origins and the sexual debut of the Italian youth, IV National Conference of Italian Society of Economic Sociology (SISEC) in Torino (Italy)

Grant awards

06/29/2022	**Travel grant** in the XVII International Conference of Society for Bayesian Analysis (ISBA) in Montreal (Canada)
11/01/2020	**Scholarship** for the position of Ph.D student in Mathematics, Computer Science, Statistics at the University of Florence (UNIFI) in Florence (Italy)
01/31/2020	**Best poster** in the IV National Conference of Italian Society of Economic Sociology (SISEC) in Torino (Italy)

Scientific society

	Member of the **Italian Epidemiology Association** (AIE) and member of the **young board**

Conferences services

<table>
<tr><td>10/16/2024 - 10/17/2024</td><td>Young organizer at the V Younger Conference of Italian Epidemiology Association (AIE) in Rome (Italy)</td></tr>
<tr><td>12/13/2022 - 12/16/2022</td><td>Volunteer at the I International Conference on Statistics and Data Science in Florence (Italy)</td></tr>
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Conference moderator

10/17/2024	**Lenonardo Ventura** award at the V Younger Conference of Italian Epidemiology Association (AIE) in Rome (Italy)

Peer review activity

BMC Pregnancy and Childbirth, BMC Public Health, Scientific Reports, Preventive Medicine Reports, Annals of Medicine (Elevate), The Lancet Regional Health - Americas, International Journal of Hygiene and Environmental Health

Articles

Alessio Lachi, et al. A compartmental model for smoking dynamics in Italy: A pipeline for inference, validation, and forecasting under hypothetical scenarios. BMC Medical Research Methodology, 2024. DOI: https://doi.org/10.1186/s12874-024-02271-w.

Stefano Tarantola, Federico Ferretti, Samuele Lo Piano, Mariia Kozlova, **Alessio Lachi**, et al. An Annotated Timeline of Sensitivity Analysis. Environmental Modelling and Software, 2024. DOI: https://doi.org/10.1016/j.envsoft.2024.105977.

Michele Marra, Michela Baccini, Giulia Cereda, Martina Culasso, Manuela De Sario, Ilenia Eboli, **Alessio Lachi**, et al. School-based screening strategies to prevent the spread of COVID-19 in school: a systematic review of the literature. Epidemiologia e Prevenzione, 2023. DOI: https://doi.org/10.19191/EP23.3.A576.054.

Fabio Vaiano, Lapo Scuffi, **Alessio Lachi**, et al. THC and THC-COOH hair concentrations: influence of age, gender, consumption habits, cosmetics treatment, and hair features. Journal of Pharmaceutical and Biomedical Analysis, 2023. DOI: https://doi.org/10.1016/j.jpba.2023.115237.

Maria Chiara Malevolti, Alessandra Lugo, Marco Scala, Silvano Gallus, Giuseppe Gorini, **Alessio Lachi**, et al. Dose-risk relationships between cigarette smoking and cervical cancer: a systematic review and meta-analysis. European Journal of Cancer Prevention, 2023. DOI: https://doi.org/10.1097/CEJ.0000000000000773.

Raffaele Guetto, Daniele Vignoli, **Alessio Lachi**. Higher parental socioeconomic status accelerates sexual debut: Evidence from university students in Italy. Advances in Life Course Research, 2022. DOI: https://doi.org/10.1016/j.alcr.2022.100461.

Elisabetta Bertol, Francesco Mari, **Alessio Lachi**, et al. Determination of endogenous GHB levels in the chest and pubic hair. Forensic Science International, 2021. DOI: https://doi.org/10.1016/j.forsciint.2021.110857.

Giulia Carreras, **Alessio Lachi**, et al. Burden of disease from exposure to secondhand smoke in children in Europe. Pediatric Research, 2021. DOI: https://doi.org/10.1038/s41390-020-01223-6.

Giulia Carreras, **Alessio Lachi**, et al. Burden of disease from second-hand tobacco smoke exposure at home among adults from European Union countries in 2017: an analysis using a review of recent meta-analyses. Preventive medicine, 2021. DOI: https://doi.org/10.1016/j.ypmed.2020.106412.

Giuseppe Gorini, Silvano Gallus, Giulia Carreras, Barbara De Mei, Maria Masocco, Fabrizio Faggiano, Lorena Charrier, Franco Cavallo, Lorenzo Spizzichino, Daniela Galeone, Valentina Minardi, Susanna Lana, **Alessio Lachi**, et al. Prevalence of tobacco smoking and electronic cigarette use among adolescents in Italy: Global Youth Tobacco Surveys (GYTS), 2010, 2014, 2018. Preventive Medicine, 2020. DOI: https://doi.org/10.1016/j.ypmed.2019.105903.

Giulia Carreras, **Alessio Lachi**, et al. Burden of disease from breast cancer attributable to smoking and second-hand smoke exposure in Europe. International Journal of Cancer, 2020. DOI: https://doi.org/10.1002/ijc.33021.

Giulia Carreras, Francesca Battisti, Leonardo Borzoni, Barbara Cortini, **Alessio Lachi**, et al. Deaths from non-communicable diseases attributable to behavioural risk factors in Italy and Italian regions, 2016. Epidemiologia e Prevenzione, 2019. DOI: https://doi.org/10.19191/EP19.5-6.P338.103.

Inproceedings

Cecilia Viscardi, **Alessio Lachi**, Michela Baccini. Bayesian inference for compartmental models with intractable likelihood function. Book of short paper SIS (Pearson), , 2024. ISBN: . URL: .

Alessio Lachi, et al. Approximate Bayesian inference for smoking habit dynamics in Tuscany. International Conference on Bayesian Statistics in Action: Bayesian Statistics, New Generations New Approaches (Springer), 2023. DOI: https://dx.doi.org/10.1007/978-3-031-42413-7_6.

Alessio Lachi, et al. Compartmental models in epidemiology: Application on Smoking Habits in Tuscany. Book of short paper SIS (Pearson), 1437-1442, 2022. ISBN: 9788891932310. URL: https://it.pearson.com/content/dam/region-core/italy/pearson-italy/pdf/Docenti/Università/Sis-2022-4c-low.pdf.

Giuseppe Gorini, Silvano Gallus, Maria Sofia Cattaruzza, **Alessio Lachi**, et al. Trend in electronic cigarettes and smokeless tobacco in Italian adolescents, Global Youth Tobacco Smoke (GYTS), 2014, 2018. Tobacco Prevention and Cessation, 2019. DOI: https://doi.org/10.18332/tpc/105303.

Giulia Carreras, **Alessio Lachi**, and Giuseppe Gorini. Smoking, second-hand smoke exposure, and breast cancer in Italy. Tabaccologia, 16-19, 2019. URL: http://www.tabaccologia.it/PDF/TABACCOLOGIA_4_2019_SITAB.pdf.

Others

Xavier Continente, et **TackSHS Project Investigators**. Exposure to secondhand and thirdhand smoke in private vehicles: Measurements in air and dust samples. Environmental Research, 2023. DOI: https://doi.org/10.1016/j.envres.2023.116681.

Silvano Gallus, et **TackSHS Project Investigators**. Electronic Cigarette Use in 12 European Countries: Results From the TackSHS Survey. Journal of Epidemiology, 2023. DOI: https://doi.org/10.2188/jea.JE20210329.

Elisabet Henderson, et **TackSHS Project Investigators**. Measurement of airborne nicotine, as a marker of secondhand smoke exposure, in homes with residents who smoke in 9 European countries. Environmental Research, 2023. DOI: https://doi.org/10.1016/j.envres.2022.115118.

Beladenta Amalia, et **TackSHS Project Investigators**. Exposure to secondhand aerosol from electronic cigarettes at homes: A real-life study in four European countries. Science of The Total Environment, 2023. DOI: https://doi.org/10.1016/j.scitotenv.2022.158668.

Silvano Gallus, et **TackSHS Project Investigators**. Use and Awareness of Heated Tobacco Products in Europe. Journal of Epidemiology, 2022. DOI: https://doi.org/10.2188/jea.JE20200248.

Sarah O. Nogueira, et **TackSHS Project Investigators**. Non-smokers and smokers support for smoke-free legislation in 14 indoor and outdoor settings across 12 European countries. Environmental Research, 2022. DOI: https://doi.org/10.1016/j.envres.2021.112224.

Chiara Stival, et **TackSHS Project Investigators**. Prevalence and Correlates of Overweight and Obesity in 12 European Countries in 2017-2018. Obesity Facts, 2022. DOI: https://doi.org/10.1159/000525792.

Elisabet Henderson, et **TackSHS Project Investigators**. Secondhand smoke exposure assessment in outdoor hospitality venues across 11 European countries. Environmental Research, 2021. DOI: https://doi.org/10.1016/j.envres.2021.111355.

Sheila Keogan, et **TackSHS Project Investigators**. Lung function changes in patients with chronic obstructive pulmonary disease (COPD) and asthma exposed to secondhand smoke in outdoor areas. Journal of Asthma, 2021. DOI: https://doi.org/10.1080/02770903.2020.1766062.

Alessandro Borgini, et **TackSHS Project Investigators**. Particulate matter in aerosols produced by two last generation electronic cigarettes: a comparison in a real-world environment. Pulmonology, 2021. DOI: https://doi.org/10.1016/j.pulmoe.2021.03.005.

Elisabet Henderson, et **TackSHS Project Investigators**. Secondhand smoke presence in outdoor areas in 12 European countries. Environment International, 2021. DOI: https://doi.org/10.1016/j.envres.2021.110806.

Elisabet Henderson, et **TackSHS Project Investigators**. Secondhand smoke exposure in outdoor children's playgrounds in 11 European countries. Environment International, 2021. DOI: https://doi.org/10.1016/j.envint.2020.105775.

Silvano Gallus, et **TackSHS Project Investigators**. Who Smokes in Europe? Data From 12 European Countries in the TackSHS Survey (2017–2018). Journal of Epidemiology, 2021. DOI: https://doi.org/10.2188/jea.JE20190344.

Beladenta Amalia, et **TackSHS Project Investigators**. How widespread is electronic cigarette use in outdoor settings? A field check from the TackSHS project in 11 European countries. Environmental Research, 2021. DOI: https://doi.org/10.1016/j.envres.2020.110571.

Elisabet Henderson, et **TackSHS Project Investigators**. Secondhand smoke exposure and other signs of tobacco consumption at outdoor entrances of primary schools in 11 European countries. Science of The Total Environment, 2020. DOI: https://doi.org/10.1016/j.scitotenv.2020.140743.

Esteve Fernández, et **TackSHS Project Investigators**. Tackling second-hand exposure to tobacco smoke and aerosols of electronic cigarettes: the TackSHS project protocol. Gaceta Sanitaria, 2020. DOI: https://www.gacetasanitaria.org/en-tackling-second-hand-exposure-tobacco-smoke-articulo-S0213911119301670.

In-review

Alessio Lachi, et al. What is the best tobacco control policy? An assessment using Monte Carlo uncertainty propagation and Global Sensitivity Analysis. Submitted to ..., 2024.

Sonia Cerrai, **Alessio Lachi**, et al. Alcohol consumption and breast lesions: identifying actionable targets for high-risk women in Italy. Submitted to Breast Cancer, 2024.

Niccolò Fonti, Francesca Parisi, **Alessio Lachi**, et al. Age at Tumor Diagnosis in 14,636 Canine Cases from the Pa-thology-based UNIPI Animal Cancer Registry, Italy: One Size Doesn't Fit All. Submitted to Veterinary Sciences, 2024.

Andrea Saltelli, **Alessio Lachi**, et al. Global sensitivity analysis unveils the hidden universe of uncertainty in multiverse studies. Submitted to Nature Human Behaviour, 2024.

Michela Baccini, Federico Pirona, Laura Grisotto, Giulia Cereda, **Alessio Lachi**, et al. Lung cancer mortality and air pollution exposure in Tuscany, Italy: Bayesian Health Impact Assessment and Global Sensitivity Analysis on a sub-regional scale. Submitted to Environmental Pollution, 2024.

Elisa Benedetti, **Alessio Lachi**, et al. From policy to practice: assessing the impact of electronic gambling machines regulations on problem gambling behavior. Submitted to Journal of Epidemiology and Community Health, 2024.

Cecilia Viscardi, **Alessio Lachi**, Michela Baccini. Compartmental models with partially observed data: a comparison among frequentist and Bayesian approaches for addressing likelihood intractability. Submitted to ..., 2024.

Arnald Puy, Ethan Bacon, Alba Carmona, Samuel Flinders, David Gefen, Mohammad Khanjani, Kai R. Larsen, **Alessio Lachi**, et al. Certainty and doubt in the Hierarchy of Sciences. Submitted to Nature Human Behaviour, 2024.

Alessio Lachi, et al. Robustification of Structural Equation Modelling via Global Sensitivity Analysis. Submitted to Statistical Methods and Application, 2024.

Florence, 22 settembre 2024