Dr. Emanuele Giorgi

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RESEARCH STATEMENT

I am a **statistical scientist** working at the interface of statistical methodological development and applications to **global health** challenges. My primary research interests focus on developing novel geostatistical methods for **disease mapping**, with particular emphasis on infectious diseases and health conditions affecting low- and middle-income countries (LMICs). A core aspect of my work is implementing these methods in **R open-source software**, striving to make advanced statistical methodology more transparent and accessible to researchers and practitioners globally.

Since 2021, I have served as the **Head of the WHO Collaborating Centre** on Geostatistical Methods for Neglected Tropical Disease (NTD) Research. In this role, I have led to numerous high-impact projects, collaborating closely with Ministries of Health and other key stakeholders to support evidence-based decision-making. Alongside research, I am deeply committed to **capacity building** in LMICs, designing and leading training programs, workshops, and mentoring initiatives in partnership with international organizations and academic institutions.

At the heart of my work is a strong commitment to improving the **well-being of people worldwide**. I am driven by the belief that statisticians have a vital role in bridging the gap between advanced methods and practical decision-making, ensuring the development of evidence-based health policies and the efficient use of limited resources.

EDUCATION

- **Ph.D. in Statistics and Epidemiology**, Lancaster University, UK (September 2015)
- **MSc in Statistics**, Università degli Studi di Padova, Italy (July 2012)
  Achieved 110/110 cum laude
- **BSc in Statistics**, Università degli Studi di Padova, Italy (April 2010)
  Achieved 110/110 cum laude
- Award in Leadership and Management (Level 5), Lancaster University, UK (August 2019)
- Postgraduate Certificate in Academic Practice, Lancaster University, UK (November 2018)

LANGUAGES

- English: proficient (C2)
- Italian: native
- Japanese: After self-teaching Japanese for 4 years, I have taken and successfully passed the Japanese Language Proficiency Test N3 exam (B1/B2, intermediate), administered by the School of Oriental and African Studies (University of London) in July 2022.

EMPLOYMENT HISTORY

- Associate Professor in Biostatistics, Lancaster University, UK (1 August 2020 - Present)
- Assistant Professor in Biostatistics, Lancaster University, UK (1 July 2018 - 31 July 2020)
- Medical Research Council Fellow in Biostatistics, Lancaster University UK (1 July 2015 - 30 June 2018).

AWARDS AND FELLOWSHIPS

- **Dean's Award 2024** (Student nomination award) from the Faculty of Health and Medicine. Award given "in recognition of strong commitment to training individuals from underrepresented backgrounds and passion to train the next generation of statisticians and epidemiologists from countries where there is a need for such expertise."
- Winning proposal for the **Mardia Interdisciplinary Workshop Prize 2024** awarded by the Royal Statistical Society. The funds received from this prize has supported the delivery of workshops focused on the application of geostatistical methods to inform policy decisions on the control and elimination of neglected tropical diseases.
- **Lancaster University Research Impact Awards Highly Commended.** Award given in recognition of the impact generated by the impact case study selected by the Faculty of Health Medicine at Lancaster University for the Research Excellence Framework 2021 (www.ref.ac.uk).
- **Invitational fellowship awarded by the Japanese Society for the Promotion of Science** for a research visit of 1 month (June 2022) at the School of Tropical Medicine in Nagasaki University to start a new collaboration with Prof Minakawa Noboru and his team.
- **Royal Statistical Society Research Prize** (September 2018): Award given for outstanding published contribution at the interface of statistics and epidemiology, spanning the development of spatial statistical methods, their application to a range of substantive problems in global population health research and their implementation in open-source software.
- **N8 New Pioneers** (www.n8research.org.uk/n8-new-pioneers): winning nomination across the N8 Research Partnership Universities for "significant contributions to the development of statistical methodology and its applications to public health problems in developing countries".
- **IPUMS International Research Award** (March 2019): Award given in recognition of outstanding work, published in the paper by Macharia, Giorgi, Thuranira et al. (2019), using Integrated Public Use Microdata Series data.
- **Strategic Skills Development Fellowship in Biostatistics**, Medical Research Council, (June 2015 - July 2018).
- **Young Investigator Award, First-tier mention** (November 2014): Award given for the work presented at American Society of Tropical Medicine and Hygiene 2014 Conference in New Orleans, USA.
- **Young Statistician's Showcase Prize** (July 2014): Best postgraduate student paper among European applicants, selected from more than 30 entries submitted for the International Biometric Conference held in Florence, Italy, in July 2014.
- Economic and Social Research Council, Quantitative Methods Pathway PhD Studentship (October 2012)

LEADERSHIP AND ENGAGEMENT

- **Head of the World Health Organization Collaborating Centre** on Geostatistical Methods for Neglected Tropical Diseases (August 2022 – present). In this role, I oversee the development and application of innovative geostatistical methods to support the control and elimination of neglected tropical diseases (NTDs). I work closely with Ministries of Health to inform policy decisions through evidence-based analyses and provide technical assistance for the design of cross-sectional surveys using geostatistical methods. I have collaborated with countries including Ethiopia, Nigeria, Malawi, Tanzania, Chad, Brazil, French Guiana, and Burkina Faso.
- **Head of the Centre for Health Informatics, Computing and Statistics** (July 2021 – present). I lead a multidisciplinary group of approximately nine academics, providing strategic leadership in both research and teaching to advance health data science. My role involves steering the group's efforts in key domains, including the development of geospatial methods for public health, infectious disease modeling, and the analysis of routinely collected health data.
- **Member of the UK Research Innovation Talent Panel College** (January 2023 – present): Acted as a panel decision member for funding calls, including International Collaboration Grants (May 2023, EPSRC-funded).
- Completed the **Bonnington Leadership Programme** at Lancaster University, designed for senior staff (Grade 8 or above) with significant management and leadership responsibilities.
- Served as a **grant reviewer** for various funding bodies, including:
  - Medical Research Council Methodology funding scheme
  - UKRI Future Leaders Fellowships
  - Discovery Grants, Natural Sciences and Engineering Research Council of Canada
- External reviewer for a promotion case to "Principal Enterprise Fellow" (Level 5), Faculty of Environmental and Life Sciences, University of Southampton (November 2021).
- Consulted by:
  - **The Academy of Medical Sciences** (via Dr Clare McVicker) to contribute to their 2022-2032 Strategy, shaping initiatives to promote global health through evidence-based research.
  - **The Bill & Melinda Gates Foundation** to advise on the integration of geospatial methods into their research strategy for Neglected Tropical Diseases (NTDs), influencing current funding frameworks.
- **Director of Studies** for:
  - Master of Research in Quantitative and Translational Skills in Global Health" (2020–2022).
  - Master of Science in Health Data Science" (2021–present).

  I spearheaded the development of the MSc in Health Data Science, designing its structure, convening modules, and fostering interdisciplinary collaboration across Mathematics, Statistics, Health Research, and Computing Science. As Director of Studies, I secured scholarships to increase accessibility, including 30 funded by the Office for Students (2023–25) and 5 by AstraZeneca (2024–25). I also established partnerships with external agencies, enhancing the program's reputation, and creating internship and placement opportunities for students. My efforts earned recognition from AstraZeneca, resulting in sponsored scholarships and further opportunities for student engagement.
- **Academic Adviser for the Commonwealth Scholarship Commission** (December 2019 – present): Expert reviewer for Master and PhD scholarship applications from Commonwealth countries.
- **Advisory Committee Member for the Wellcome Trust Open Research Fund** (September 2019 – present): Provide expertise in geospatial statistics, assessing grant applications at panel meetings.

- **Royal Statistical Society Coordinator for the AIMS Partnership** (January 2018 – January 2022): Led the collaboration with the African Institute for Mathematical Sciences (AIMS) in Limbe (Cameroon) to recruit lecturers, tutors, and design the statistics curriculum for the Master of Applied Mathematics.
- **Member of the College of Experts, African Research Excellence Fund (AREF)** (June 2016 – present): Panel member and reviewer for fellowship applications supporting African researchers.
- **Committee Member of the British and Irish Region, International Biometric Society** (March 2017 – December 2019): Organized scientific events promoting collaboration between statisticians and scientists in various disciplines.

PUBLICATIONS

Overall summary statistics: 2 books; 89 published peer-reviewed articles; 3 invited book chapters; 10 articles under review. Total number of citations by year: 333 (2020); 473 (2021); 482 (2022); 612 (2023). H-index: 26

- **Books**

1. Diggle, P.J, **Giorgi, E.**, (2024). *Time-series analysis: a biostatistical introduction.* Oxford Press University.
2. Diggle, P.J, **Giorgi, E.**, (2019). *Model-based Geostatistics for Global Public Health: Methods and Applications.* Chapman & Hall/CRC.

- **Original peer-reviewed research articles**

Statistical Methodology

1. Kyomuhangi, I., **Giorgi, E.** (2022). *A threshold-free approach with age-dependency for estimating malaria seroprevalence.* Malaria Journal. https://doi.org/10.1371/journal.pone.0262145
2. Macharia, P., Ray, N., Gitonga, C. W., Snow, R. W., **Giorgi, E.** (2022). *Combining school-catchment area models with geostatistical models for analysing school survey data from low-resource settings: inferential benefits and limitations.* Spatial statistics. https://doi.org/10.1016/j.spasta.2022.100679
3. **Giorgi, E.**, Fronterrè, C., Macharia, P., Alegana, V., Snow, R., Diggle, P. (2021) *Model building and assessment of the impact of covariates for disease prevalence mapping in low-resource settings: to explain and to predict.* Journal of the Royal Society Interface. 18:20210104. http://doi.org/10.1098/rsif.2021.0104
4. Kyomuhangi, I., **Giorgi, E.** (2021) *A unified and flexible modelling framework for the analysis of malaria serology data.* Epidemiology & Infection. doi:10.1017/S0950268821000753
5. Diggle, P. J., **Giorgi, E.**, Atsame, J., Ella, S. N., Ogoussan, K., Gass, K. (2020). *A tale of two parasites: statistical modelling to support disease control programmes in Africa.* Statistical Science. 35:42-50, doi:10.1214/19-STS738
6. Johnson, O. O., Getherall, T., Knight, J., **Giorgi, E.** (2020) *A modelling framework for developing early warning systems of COPD emergency admissions.* Spatial and spatio-temporal epidemiology. doi: 10.1016/j.sste.2020.100392
7. Eyre, M. T., Carvalho-Pereira, T. S., Souza, F. N., Khalil, H., Hacker, K. P., Serrano, S., Taylor, J. P., Reis, M. G., Ko, A. J., Begon, M., Diggle, P. J., Costa, F., **Giorgi, E.** (2020) *A multivariate geostatistical framework for combining multiple indices of abundance for disease vectors and reservoirs: A case study of rattiness in a low-income urban Brazilian community.* Journal of the Royal Society Interface. doi:10.1098/rsif.2020.0398
8. Johnson, O. O., Diggle, P. J., **Giorgi, E.**, (2020). *Dealing with spatial misalignment to model the relationship between deprivation and life expectancy: A model-based geostatistical approach.* International Journal of Health Geographics. DOI: 10.1186/s12942-020-00200-w

9. Kyomuhangi, I., Abeku, T. A., Kirby, M. J., Tesfaye, G.,**Giorgi, E.** (2020). *Understanding the effects of dichotomization of continuous outcomes on geostatistical inference.* Spatial Statistics. 00424, https://doi.org/10.1016/j.spasta.2020.100424.
10. Ejigu, B. A., Wencheko, E., Moraga, P., **Giorgi, E.**, (2020). *Geostatistical methods for modelling non-stationary patterns in disease risk.* Spatial Statistics. doi:10.1016/j.spasta.2019.100397
11. Fronterre, C., Amoah, B., **Giorgi, E.**, Stanton, M., Diggle, P.J., *Design and analysis of elimination surveys for neglected tropical diseases.* (2020). Journal of Infectious Diseases. jiz554, https://doi.org/10.1093/infdis/jiz554
12. Milton, P., **Giorgi, E.**, Bhatt, S. (2019). *Spatial Analysis Made Easy with Linear Regression and Kernels.* Epidemics. DOI:10.1016/j.epidem.2019.100362
13. Amoah, B., Diggle, P. J., **Giorgi, E.** (2019). *A geostatistical framework for combining data from multiple diagnostic tests.* Biometrics. doi:10.1111/biom.13142
14. Johnson, O. O., Diggle, P. J., **Giorgi, E.** (2019). *A spatially discrete approximation to log-Gaussian Cox processes for modelling aggregated disease count data.* Statistics in Medicine. doi:10.1002/sim.8339
15. Fronterrè, C., **Giorgi, E.**, Diggle, P. J. (2018). *Geostatistical inference in the presence of geomasking: a composite-likelihood approach.* Spatial Statistics. DOI: 10.1016/j.spasta.2018.06.004
16. **Giorgi, E.**, Diggle, P. J., Snow, R. W., Noor, A. M. (2018). *Geostatistical methods for disease mapping and visualization using data from spatio-temporally referenced prevalence surveys.* International Statistical Review. https://doi.org/10.1111/insr.12268
17. **Giorgi, E.**, (2018). *On the goodness-of-fit of generalized linear geostistical models.* Spatial statistics. https://doi.org/10.1016/j.spasta.2018.01.002
18. **Giorgi, E.**, Schlüter, D. K., Diggle, P. J. (2017). *Bivariate geostatistical modelling of the relationship between Loa loa prevalence and intensity of infection.* Environmetrics. doi:10.1002/env.2447
19. **Giorgi, E.**, Diggle, P. J. (2017). *PrevMap: an R package for prevalence mapping.* Journal of Statistical Software. 78:1-29, doi: 10.18637/jss.v078.i08
20. Diggle, P. J., **Giorgi, E.** (2016). *Model-based geostatistics for prevalence mapping in low-resource settings (with discussion).* Journal of the American Statistical Association. 111:1096-1120
21. **Giorgi, E.**, Diggle, P. J. (2014). *On the inverse geostatistical problem of inference on missing locations.* Spatial statistics. 11:35-44 arXiv:1409.3408
22. **Giorgi, E.**, Sesay, S. S., Terlouw, D. J., Diggle, P. J. (2015). *Combining data from multiple spatially referenced prevalence surveys using generalized linear geostatistical models.* Journal of the Royal Statistical Society, Series A. 178:445-464 arXiv:1308.2790
23. **Giorgi, E.**, McNeil, A. J. (2014). *On the computation of multivariate scenario sets for the skew-t and generalized hyperbolic families.* Computational Statistics and Data Analysis. 100:205-220 arXiv:1402.0686

Applications in Public Health

1. Puranik, A., Diggle, P. J., Odiere, M. R., Gass, K., Kepha, S., Okoyo, C., Mwandawiro, C., Wakesho, F., Omondi, W., Sultani, H. M., **Giorgi, E.** (2024). *Understanding the impact of covariates on the classification of implementation units for soil-transmitted helminths control: A case study from Kenya.* BMC Medical Research Methodology, 24, 294 (2024). https://doi.org/10.1186/s12874-024-02420-1
2. Khaki, J., Macharia, P., **Giorgi, E.**, Benova, L. (2024). *Prevalence and determinants of double and triple burden of malnutrition among mother-child pairs in Malawi: a mapping and multilevel modelling study.* Pubblic Health Nutrition. Public Health Nutrition. 2024;27(1):e241. doi:10.1017/S1368980024002064

3. Soni, N., Eyre, M. T., Souza, F. N., Diggle, P. J., Ko, A. I., Begon, M., Pickup, R., Childs, J. E., Khalil, H., Carvalho-Pereira, T. S. A., Pertile, A. C., Carvalho, M., de Oliveira, D., Junior, N. N., **Giorgi, E.***, Costa, F.* (2024). *Disentangling the influence of reservoir abundance and pathogen shedding on zoonotic spillover of the Leptospira agent in urban informal settlements.* Frontiers in Public Health. 12:1447592. doi: 10.3389/fpubh.2024.1447592
*These authors contributed equally.

4. Khaki, J.J, Meiring, J.E., Thindwa, D., Henrion, M.Y., Jere, T.M., Msuku, H., The STRATAA Consortium, Heyderman, R.S., Gordon, M. A., **Giorgi, E.** (2024). *Modelling Salmonella Typhi in Blantyre, Malawi, using point pattern methods.* Scientific Reports. 14, 17164. https://doi.org/10.1038/s41598-024-66436-9

5. Barrett, C. L., Chiphwanya, J., Mkwanda, D., Matipula, D. E., Ndhlovu, P., Chaponda, L., Turner, J. D., **Giorgi, E.**, Betts, H., Martindale, S., Taylor, M. J., Read, J. M., Kelly-Hope, L. A. (2024).*The national distribution of lymphatic filariasis cases in Malawi using patient mapping and geostatistical modelling.* PLoS Neglected Tropical Diseases. https://doi.org/10.1371/journal.pntd.0012056

6. Mountain, R., Knight, J., Heys, K., **Giorgi, E.***, and Gatheral*, T. (2024). *Spatio-temporal modelling of referrals to outpatient respiratory clinics in the integrated care system of the Morecambe Bay area.* BMC Health Services Research. DOI: 10.1186/s12913-024-10716-7
*These authors contributed equally.

7. Carvalho-Pereira, T., Eyre, M., Zeppelini, C., Espirito Santo, V., Santiago, D., Santana, R., Palma, F., Reis, M., Lustosa, R., Khalil, H., Diggle, P., **Giorgi, E.**, Costa, F., Begon, M. (2023). *Basic urban services fail to neutralise environmental determinants of 'rattiness', a composite metric of rat abundance.* Urban Ecosystems. https://doi.org/10.1007/s11252-023-01481-2

8. Sasanami, M., Amoah, B., Amza, A., Souley, A. S. Y, Diori, A. N., Bakhtiari, A., Kadri, B., Szwarcwald, C. L., Gomez, D. V. F., Almou, I., Lopes, M. F. C., Masika, M. P., Beidou, N., Boyd, S., Harding-Esch, E. M., Solomon, A. W, **Giorgi, E.** (2023). *Using model-based geostatistics for assessing the elimination of trachoma.* PLoS Neglected Tropical Diseases, 17(7): e0011476. https://doi.org/10.1371/journal.pntd.0011476

9. Dermauw, V., De Vijver, E. V., Dorny, P., **Giorgi, E.**, Ganaba, R., Millogo, A., Tarnagda, Z., Cisse, A. K., Carabin, A., *Geostatistical analysis of active human cysticercosis: Results of a large-scale study in 60 villages in Burkina Faso'.* PLoS Neglected Tropical Diseases. https://doi.org/10.1371/journal.pntd.0011437

10. Borlase, A., Rutte, E. A., Castano, S., Blok, D. J., Toor, J., Giardina, F., Davis, E. L., NTD Consortium* (2022) *Evaluating and mitigating the potential indirect effect of COVID-19 on control programmes for seven neglected tropical diseases: a modelling study.* Lancet Global Health. DOI:10.1016/S2214-109X(22)00360-6
* I have co-authored this paper as member of the NTD consortium.

11. Cremonese, C., Souza, F. N.,Palma, F. A. G., Sodre, J. F. A., Ribeiro, P. de S., Santana, J. O., Coelho, R. H., Ticona, J. P. A., Nazare, R., de Oliveira, D., Eyre, M., Knee, J., Ristow, P., Stauber, C., Lopez, Y. A., **Giorgi, E.**, Diggle, P. J., Cumming, O., dos Reis, M. G., Ko, A., Costa, F. (2023). *Simplified sewerage to prevent urban leptospirosis transmission: a cluster non-randomized controlled trial protocol in disadvantaged urban communities of Salvador, Brazil.* BMJ Open. 13:e065009. doi: 10.1136/bmjopen-2022-065009

12. Kitawa, Y. S., Johnson, O., **Giorgi, E.**, Zeytu Gashaw Asfaw (2023). Understanding the importance of spatial correlation in identifying spatio-temporal variation of disease risk, in the case of malaria risk mapping in southern Ethiopia. Scientific African. doi: 10.1016/j.sciaf.2023.e01926

13. Greenland-Bews, C., Byrne, R. L., Owen, S. O., Watkins, R. L., Bengey, D., Buist, K., Clerkin, K., Escadafal, C., Finch, L. S., Gould, S., **Giorgi, E.**, Hodgkinson, A., Mashenko, L., Powell, D., Savage, H. R,. Thompson, C. R., Turtle, L. T., Wardale, J., Wooding, D., Edwards, T., Atienzar, A. C. (2023). *Evaluation of Eight Lateral Flow Tests for the detection of anti-SARS-CoV-2 antibodies in a vaccinated population Corresponding Author: Dr Emily R Adams.* BMC Infectious Diseases. https://doi.org/10.1186/s12879-023-08033-1

14. Echodu, D., Yeka, D., Eganyu, T., Odude, W., Bukenya, F., Amoah, B., Wanzira, H., Colborn, K., Elliott, R. C., Powell, S. E., Kilama, M., Mulebeke, R., Nankabirwa, J., **Giorgi, E.**, Roskosky, M., Omoding, O., Gonahasa, S., Opigo, J. (2023). *Impact of population based indoor residual spraying with and without mass drug administration with dihydroartemisinin-piperaquine on malaria prevalence in a high transmission setting: a controlled trial in northeastern Uganda.* BMC Infectious Diseases. https://doi.org/10.1186/s12879-023-07991-w

15. Macharia, P. M., Moturi, A., Mumo, E., **Giorgi, E.**, Okiro, E. A., Snow, R. W., N. R. (2022). *Modelling geographic access and catchment areas for public primary schools in Kenya.* Children's Geographies. https://doi.org/10.1080/14733285.2022.2137388

16. Eyre, M. T., Souza, F. N., Carvalho-Pereira, T. S. A., Nery, N., de Oliveira, D., Cruz, J. S., Sacramento, G. A., Khalil, H., Wunder, E. A., Hacker, K. P., Childs, J. E., Reis, M., Begon, M., Diggle, P. J., Ko, A. I., **Giorgi, E.***, Costa, F.* (2022). *Linking rattiness, geography and environmental degradation to spillover Leptospira infections in marginalised urban settings.* ELife. https://doi.org/10.7554/eLife.73120
*These authors contributed equally.

17. Ringwald, B., Tolhurst, R., Taegtmeyer, M., Digolo, L., Gichuna, G., Gaitho, M. M., Phillips-Howard, P. A., Otiso, L., **Giorgi, E.** (2022). *Intra-urban variation of intimate partner violence against women and men in Kenya: a secondary data analysis.* Journal of Interpersonal Violence. https://doi.org/10.1177/08862605221120893

18. Grau-Pujol, B., Cano, J., Marti-Soler, H., Casellas, A., **Giorgi, E.**, Nhacolo, A., Saute, F., Gine, R, Quinto, L., Sacoor, C., Munoz, J. (2022). *Neighbors' use of water and sanitation facilities can affect children's health: a cohort study in Mozambique using a spatial approach.* BMC Public Health 22, 983 (2022). https://doi.org/10.1186/s12889-022-13373-9

19. Kay, G. A., Owen, S. I., **Giorgi, E.**, Williams1, C. T., Menzies, S., Clark, D. J., Cuevas, L. C., Davies, B. M. O., Eckersley, N. M., Hughes, G. L., Kirwan, D. E., Krishna, S., Patterson, E. I., Planche, T., Staines, H. M., Adams, E. R. (2022). *Immunoglobulin-G enzyme-linked immunosorbent assay predicts neutralising antibody response in convalescent SARS-CoV-2 patients.* Scientific Reports. 3351 https://doi.org/10.1038/s41598-022-07263-8

20. Johnson, O., **Giorgi, E.**, Fronterre, C., Amoah, B., Atsame, J., Ella, S. N., Biamonte, M. Ogoussan, K., Hundley, L., Gass, K., Diggle, P. J. (2022). *Geostatistical modelling enables efficient safety assessment for ivermectin use in Loa loa endemic areas through a combined antibody and LoaScope testing strategy.* PLoS Neglected Tropical Diseases. 16, 2, p. e0010189

21. **Giorgi, E.**, Macharia, P. M., Woodmansey, J., Snow, R. W., Rowlingson, B. (2021). *Maplaria: a user friendly web-application for spatio-temporal malaria prevalence mapping.* Malaria Journal. 20, 471 https://doi.org/10.1186/s12936-021-04011-7

22. Amoah, B., McCann, R. S., Kabaghe, A. N., Mburu, M., Chipeta, M G., Moraga, P., Gowelo, S., Tizifa, T., van den Berg, H., Mzilahowa, T., Takken, W., van Vugt, M., Phiri, K.S., Diggle, P. J., Terlouw, D. J., **Giorgi, E.** (2021). *Identifying fine-scale spatiotemporal patterns in Plasmodium falciparum transmission by monitoring parasite prevalence and entomological inoculation rate.* ELife. 10:e65682 doi:10.7554/eLife.65682

23. Grau-Pujol, B., Martì-Soler, H., Escola, V., Demontis, V., Jamine, J. C., Gandasegui, J., Muchisse, O., Cambra-Pellejá, M., Cossa, A., Martinez-Valladares, M., Sacoor, C., Van Lieshout, L., Cano, J., **Giorgi, E.**, Munoz, J. (2021). *Towards soil-transmitted helminths transmission interruption: the impact of diagnostic tools on infection prediction in a low intensity setting in Southern Mozambique.* PLoS Neglected Tropical Diseases.
https://doi.org/10.1371/journal.pntd.0009803

24. Aguilar Ticona, J. P., Nery, N., Victoriano, R., Fofana, M. O., Ribeiro, G. S.,**Giorgi, E.**, Reis, M. G., Ko, A. I., Costa, F. (2021). *Willingness to get the COVID-19 vaccine among residents of slum settlements.* Vaccines. 2021, 9(9), 951; https://doi.org/10.3390/vaccines9090951

25. Dissanayake, R., **Giorgi, E.**, Stevenson, M., Allavena, R., Henning, J. (2021). *Estimating koala density from incidental koala sightings in South-East Queensland, Australia (1997–2013), using a self-exciting spatio-temporal point process model* Ecology and Evolution. DOI: 10.1002/ece3.8082

26. Amoah, B., Fronterre, C., Johnson, O., Dejene, M., Seife, F., Negussu, N., Bakhtiari, A., Harding-Esch, E., **Giorgi, E.**, Solomon, A. W., Diggle, P. J. (2021). *Geostatistical analysis can yield more precise neglected tropical disease prevalence estimates than traditional analysis methods: mapping trachoma prevalence in Ethiopia.* International Journal of Epidemiology. dyab227, https://doi.org/10.1093/ije/dyab227

27. Macharia, P. M., Ray, N., **Giorgi, E.**, Okiro, E. A., Snow, R. W. (2021). *Defining service catchment areas in low resource settings.* BMJ Global Health. http://dx.doi.org/10.1136/bmjgh-2021-006381

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39. Neyens, T., Diggle, P. D., Faes, C., Beenaerts, N., Artois, T., **Giorgi, E.** (2020). *Mapping species richness using opportunistic samples: a case study on ground-floor bryophyte species richness in the Belgian province of Limburg.* Scientific Reports 9, 19122, doi:10.1038/s41598-019-55593-x
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Publications on teaching of statistics

1. Johnson, O., Fronterre, C., Diggle, P. J., Amoah, A., **Giorgi, E.** (2021). *MBGapp: A Shiny application for teaching model-based geostatistics to population health scientists.* PLoS ONE. https://doi.org/10.1371/journal.pone.0262145
2. **Giorgi, E.** (2018). *Using a problem-driven approach for teaching statistics at the African Institute of Mathematical Sciences (invited paper).* Proceedings of the 10th International Conference on Teaching Statistics, Kyoto, Japan. Available at iase-web.org/icots/10/proceedings/pdfs/ICOTS10_3H3.pdf

- **Book chapters**

1. Macharia, P.M., Odhiambo, J.N., Mumo, E., Maina, A., **Giorgi, E.**, Okiro, E.A. (2023). *Approaches to Defining Health Facility Catchment Areas in Sub-Saharan Africa.* Approaches to Defining Health Facility Catchment Areas in Sub-Saharan Africa. In: Adewoyin, Y. (eds) Health and Medical Geography in Africa. Global Perspectives on Health Geography. Springer, Cham. https://doi.org/10.1007/978-3-031-41268-4-21
2. Diggle, P. J., **Giorgi, E.**, Chipeta, M. G., MacFarlane, S. (2017). *Keeping track of health outcomes in space and time: an introduction to spatial and spatio-temporal methods.* In: The Palgrave Handbook on Global Health Data for Policy. Palgrave Macmillan.
3. Diggle, P. J., **Giorgi, E.** (2017). *Preferential sampling of exposure levels. In: Hanbook of Environmental and Ecological Statisics.* Chapman & Hall/CRC Handbooks of Modern Statistical Methods.

- **Other non peer-reviewed publications**

Outreach and public engagement publications

1. Purkiss, J., Clark, F., **Giorgi, E.** (2024). *Using geostatistics to fight neglected tropical diseases.* Significance, Volume 21, Issue 4, September 2024, Pages 14–18, https://doi.org/10.1093/jrssig/qmae057
2. **Giorgi, E.** (2018). *Career Highlights: Emanuele Giorgi on teaching in Africa.* Significance, 15: 41. doi:10.1111/j.1740-9713.2018.01111.x
3. **Giorgi, E.**, Bisanzio, D. (2017). *Why malaria is unlikely to return to Italy – despite a recent death from the disease.* The Conversation UK.[1]

Invited comments to publications

1. Stockdale, A. J., Kreuels, B., Henrion, M., **Giorgi, E.**, Kyomuhangi, I., Geretti, A. M. (2018). *Hepatitis D prevalence: problems with extrapolation to global population estimates.* Gut. DOI:10.1136/gutjnl-2018-317874
2. Diggle, P. J., **Giorgi, E.** (2014). *Geostatistical mapping of helminth infection rates.* The Lancet Infectious Diseases. 15:9-11

Book reviews

1. **Giorgi, E.** (2017). *Review of "Spatial Point Patterns: Methodology and Applications with R".* American Statistician. doi: 10.1080/00031305.2017.1322880

[1] Available at `https://theconversation.com/why-malaria-is-unlikely-to-return-to-italy-despite-a-recent-death-from-the-disease-83663`

- **Original research articles under review**

1. Harte, A., Sasanami, M., Burgert-Brucker, C. R., Bakhtiari, A., Bisanzio, D., Jimenez, C., Solomon, A. W., Kabona, G. E., Masika, M. P., Ngondi, J., Ante-Testard, P. A., Arnold, B. F., Baayenda, G., Ruiz Cuenca, P., Diggle, P. J., Edirweera, D., Emerson, P. M., Fronterre, C., Gass, K., Hadley, L., Hooper, P. J., Kamau, E., Kebede, F., Kyomuhangi, I., Lietman, T. M., McCracken, K., Minnery, M., Nash, S. D., Nicholls, T., Olobio, N., Palmer, S. L., Saeedzai, S. A., Somerville, S., Stern, C., Stukel, D., Landmann Szwarcwald, C., Talero, S. L., Yevstigneyeva, V., Kello, A. B., Harding-Esch, E., **Giorgi, E.**, *Using model-based geostatistics to refine population-based estimates of trachoma prevalence: update from a technical consultation.* PLoS Neglected Tropical Diseases.
2. Ruiz Cuenca, P., Souza, F. N., Nascimento, R. C. do, da Silva, A. G., Eyre, M. T., Cerqueira, J., dos Santos, D. O., Ribeiro de Souza, E. V., Read, J., Cremonese, C., Costa, F., **Giorgi, E.**, *Disentangling the effects of fine-scale human mobility on leptospiral infection using GPS telemetry data.* Journal of the Royal Society Interface.
3. Sasanami, M., Almou, I., Diori, A. N., Bakhtiari, A., Beidou, N., Bisanzio, D., Boyd, S., Burgert-Brucker, C. R., Amza, A., Gass, K., Kadri, B., Kebede, F., Masika, M. P., Olobio, N. P., Seife, F., Souley, A. S. Y., Tefera, A., Kello, A. B., Solomon, A. W., Harding-Esch, E. **Giorgi, E.**, *On the use of covariates for trachoma prevalence estimation using geostatistical methods: benefits and limitations.* BMC Public Health.
4. Ecke, F., Semenza, J.C., Buzan, E., Costa, F., **Giorgi, E.**, Guo, J., Kirkpatrick, L., Knauf, S., Meheretu, Y., Singh, N., Sjödin, H., Timperley, M., Treskova, M., Ulrich, R.G., Zeppelini, C.G., Rocklöv, J., Mitigating Zoonotic Risks Through Ecosystem Restoration, One Earth.
5. Purkiss. J., Pepe, P., Poplawski, N. A. K., Maurelli, M. P., Gualdieri, L., Rinaldi, L., **Giorgi, E.**. *Combining country indicators and individual variables to predict soil-transmitted helminth infections among migrant populations: a case study from southern Italy.* PLoS Neglected Tropical Diseases.
6. Mategula, D., Gichuki, J., Barnes, K. I., **Giorgi, E.**, Terlouw, D. J., *Advancing Early Warning Systems for Malaria: Progress, Challenges, and Future Directions - A Scoping Review.* PLoS Global Public Health.
7. Bun, K., Mode, B., Bjerum, C., Payne1, M., Tisch, D., Salo, J., Kovach, J., Susapu, M., Sekihara, M., **Giorgi, E.**, Diggle, P. J., Weil, G., Robinson, L., Laman, M., King, C. L., *Alternative Approaches for Monitoring and Evaluation of Lymphatic Filariasis Following Mass Drug Treatment with Ivermectin, Diethylcarbamazine and Albendazole in East New Britain Province, Papua New Guinea.* PLoS Neglected Tropical Diseases.
8. Khaki, J., Minnery, M., **Giorgi, E.**, *Using ESPEN Data for Evidence-Based Control of Neglected Tropical Diseases in sub-Saharan Africa: a Comprehensive Model-based Geostatistical Analysis on Soil-Transmitted Helminths.* PLoS Neglected Tropical Diseases.
9. Stoppa, G., Catelan, D., Michela, Z., Fin, G., Naike, S., Facciolo, F., Biggeri, A., **Giorgi, E.**, *Geostatistical analysis of geomasked PFAS food contamination data in Veneto Region.* Environmental Research.
10. Clark, F. N., da Silva Solca, M., Fraga, D. B. M., Brodskyn, C. I, **Giorgi, E.**, *Understanding the relationship between the presence of vegetation and the spread of canine visceral leishmaniasis in Camaçari, Bahia State, Northeastern Brazil.* Spatial and sptio-temporal epidemiology.
11. Fronterre, C., Johnson, O., **Giorgi, E.**, Montresor, A., Diggle, P. J., *Survey Design and Geospatial Analysis using Data on Baseline Prevalence, Environmental Risk-Factors and Treatment History Drastically Reduces the Cost of STH Impact Surveys.* PLoS Neglected Tropical Diseases.

EDITORIAL ACTIVITY

- Associate Editor for the **Journal of the Royal Statistical Society, Series A** (Jan 2025 - Dec 2029).

- I am an Academic Editor (AE) for **PLoS ONE** (IF: 3.240) (journals.plos.org/plosone/) and a member of the Editorial Board for **Spatial Statistics** (IF: 2.06) (www.journals.elsevier.com/spatial-statistics) and **PeerJ** (https://peerj.com/) (IF: 2.98). As part of these roles, oversee the peer review process for the journals on research article submissions in the field of spatial epidemiology. I also evaluate the quality of submissions, select reviewers, assess their comments and make editorial decisions. I handle about 1 or 2 research article submissions per month.

- I am member of the **Statistical Reviewers (SR) group of the Journal of the America Medical Association Open Network** (IF 5.032) an international, peer-reviewed, open access journal that publishes research on general medical science. The SR is a group of internationally selected statisticians who are committed to review at least 1 paper per month for the journal and who focus their review on the statistical aspects of submitted manuscripts.

- I have been a guest editor for the special issue "Current Research on Serological Analyses of Infectious Diseases"[2] for the journal Frontiers in Medicine (IF 3.9).

- Frequently invited to carry out **peer-review** of manuscripts submitted to high-impact journals, including *Nature*, *Proceedings of the National Academy of Sciences*, *eLife*, *The Lancet*, *Journal of the Royal Statistical Society*, and *Biometrics*.

CONFERENCES AND SEMINARS

- **Member of scientific committees** for the following conferences: Spatial Statistics 2017 (Lancaster University, September 2017, UK); 7th Channel Network Conference (Rothamsted Research, July 2019, UK); 29th International Environmetrics Society (TIES) Conference (Imperial College London, September 2020, UK); GEOMED2024 (Hasselt University, Belgium, September 2024).

- **Invited sessions at international conferences**

    1. "Spatial statistics for global health", Royal Statistical Society Annual Conference, September 2024, Brighton, UK.
    2. "Spatial statistics for global health", GEOMED2024, September 2024, Hasselt, Belgium.
    3. "Statistical methods for the analysis of electronic health records", Computational and Methodological Statistics, King's College London, December 2020
    4. "Using electronic health records for understanding spatial variation in disease risk", Royal Statistical Society 2019 International Conference, September 2019, Belfast, UK.
    5. "Geostatistical methods for global health", GEOMED 2019, August 2019, Glasgow University, Glasgow, UK.
    6. "Geo-spatial methods for global health applications", Royal Statistical Society 2018 International Conference, September 2018, Cardiff University, Cardiff UK.

- **Keynote plenary talks at international conferences**

    1. "11th International Conference on Spatio-Temporal Modelling - METMA", Lancaster University, Lancaster, UK
    2. "Conference on Health and Environmental Change: Modelling the association of environmental changes and health indicators", Leuven, Belgium, September 2023.
    3. "Geostatistical modelling of spatially structured zero-inflation with applications to tropical disease mapping", Spatial Statistics 2019, Sitges, Spain, 10-13 July 2019

- **Invited talks at international conferences and workshops**

[2] Link: `www.frontiersin.org/research-topics/29838/current-research-on-serological-analyses-of-infectious-diseases`

1. "Assessing the impact of spatial covariates in the use of model-based geostatistical models for trachoma prevalence surveys", WHO Trachoma Scientific Meeting, Hammamet, Tunisia, May 14, 2024
2. "Using model-based geostatistics to inform trachoma elimination", The Twnety-Fifth Annual Trachoma Control Program Review, The Carter Center, Atlanta, USA, April 2024
3. "International Workshop of Statistical Modelling", Durham University, Durham, UK, July 2024.
4. Carter Center Annual Meeting 2024, Emoroy University, Atlanta, April 2024.
5. "64th World Statistics Congress", Ottawa, Canada, July 2023.
6. GRASPA-TIES European 2021 Workshop, Rome, Italy 7-9 June 2021.
7. Climate Change and Infectious Diseases Spatio-Temporal Statistical Modelling and Implementation Research, School of Public Health and Community Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden, 14-16 April 2021
8. Annual Meeting of the Coalition for Operational Research on Neglected Tropical Diseases, November 12-14 2020. (Virtual conference originally scheduled to take place in Toronto, Canada)
9. 12th International Conference on Methodological and Computational Statistics, Senate House, University of London, 14-16 December 2019.
10. 3rd International EcoStat Conference, June 2019, National Ching Hsing University, Taiwan.
11. Royal Statistical Society, 2018 International Conference, September 2018, Cardiff University, Cardiff, UK.
12. 10^{th} International Conference on Teaching Statistics, Kyoto, Japan. July 2018.
13. "Geospatial Chil Health and Epidemiology Workshop", Sheffield Hallam University, Sheffield, UK, June 2018.
14. International Workshop on "Geospatial methods for closing the global mortality data divide", Centre for Global Health Research, Toronto, Canada. June 2018.
15. Workshop on "Model-based geostatistics: methods and applications in low-resource settings", Kenya Medical Research Institute, Nairobi. February 2018.
16. Spatial Statistics Conference. July 2017, Lancaster University, Lancaster, UK.
17. Royal Statistical Society, 2017 International Conference. September 2017, Strathclyde University, Glasgow, UK.
18. Royal Statistical Society 2016 International Conference , September 2016, University of Manchester, Manchester, UK.
19. International Workshop on Spatio-Temporal Statistics, April 2016, Imperial College London, London, UK.
20. International Biometric Conference. July 2014, Florence, Italy.
21. Workshop on Non-Gaussian Multivariate Statistical Models and their Applications, May 2013, Banff International Research Station, Banff, Canada.
22. 7th CSDA International Conference on Computational and Financial Econometrics, December 2013, Senate House, University of London, London, UK.

- **Invited talks at external seminars**

1. Seminar on "Combining school-catchment area models with geostatistical models for analysing school survey data from low-resource settings: inferential benefits and limitations" at Department of Geography and Environmental Science, University of Southampton, April 2022.
2. Seminar on "Combining school-catchment area models with geostatistical models for analysing school survey data from low-resource settings: inferential benefits and limitations" at Department of Statistics, Toronto University, April 2022.
3. Seminar on "Geostatistical analysis of school malaria data with missing locations", Waterloo University, Canada, 25 November 2021.

4. Seminar on "Introduction to spatial statistics and modelling ideas on historical data on causes of death in Amsterdam", Roudboud University, The Netherlands, 12 June 2020.
5. Seminar on "Geostatistical methods for combining multiple indices of animal abundance", University of Sussex, December 2019.
6. Seminar on "A geostatisical framework for combining spatially rerference disease prevalence data from multiple diagnostics". 7 December 2018, Padua, Italy.
7. Seminar on "A geostatisical framework for combining spatially rerference disease prevalence data from multiple diagnostics". 27 November 2018, Turin, Italy.
8. Seminar on "Disease mapping and visualization using spatio-temporally referenced prevalence data". May 2017, Stathclyde University, Glasgow, UK.
9. Seminar on "Geostatistical methods for prevalence mapping", Colorado University, Denver, USA. February 2017.
10. Seminar on "Malaria, river-blindness and plague: three case-studies in spatial modelling of tropical diseases". April 2015, London School of Hygiene and Tropical Medicine, London, UK.

11 – 13. Seminars on "Combining data from multiple spatially referenced surveys using generalized linear geostatistical models", at: Heriot-Watt University, Edinburgh, UK (October 2013); University of Leeds, Leeds, UK (November 2013); Warwick University, Coventry, UK (June 2014).

- **Contributed talks at international conferences**

1. American Society of Tropical Medicine and Hygiene, November 2014, New Orleans, USA.
2. GEOMED2013, September 2013, The University of Sheffield, Sheffield, UK.

FUNDING

In total, I have been awarded approximately £**2,346,207** through grants and consultancy projects. This includes:

- **Grants as Principal Investigator (PI):** £1,302,360
- **Grants as Co-Investigator (CI):** £926,479
- **Consultancies:** £117,368

Below I provide more details for each of the above.

- **Successful grant applications**

1. **PI:** Approximating optimal survey designs in low prevalence environments (Project extension), 2024-2025, EvidenceAction, £68,461
2. **PI:** Geostatistical methods for neglected tropical diseases, TaskForce for Global Health, October 2024 - September 2025, £83,071
3. **PI:** Assessing the impacts of declining vaccination rates on the occurrence of measles in the UK using epidemic models, NHIR, 2024-2026 £103,670.50
4. **PI:** Model-based geostatistics for persistent and recrudescent trachoma, 2023-2024, USAID, £149,187
5. **PI:** Approximating optimal survey designs in low prevalence environments, 2023-2024, EvidenceAction, £90,071
6. **PI:** Spatio-temporal geostatistical methods for malaria mapping in North-East Uganda, 2023-2024, Pilgrim Africa, £15,274 (II Phase)

7. **PI:** "Spatio-temporal modelling of soil transmitted helminths infections", National Institute of Health Research, £98,217, October 2022 - September 2024.
8. **CI:** "Identification of best practices for biodiversity recovery and public health interventions to prevent future epidemics and pandemics", European Commission HORIZON2020, £371,233, September 2022 - December 2026.
9. **PI:** "Model-based geostatistics for global public health", £4,015, Butterfly Awards, Sasakawa Foundation, September 2022.
10. **CI:** "Predicting STH prevalence with minimal re-mapping",Task-Force For Global Health, £126,395, October 2021 - March 2023.
11. **CI:** "Diagnostic algorithms for tubercolosis", Medical Research Council, £31,543, October 2021 - March 2023.
12. **PI:** "Spatio-temporal modelling of leptosiprosis infections in slums settlements in Salvador, Brazil", National Institute of Health Research, £97,304, October 2021 - September 2023.
13. **PI:** "Optimizing NTD diagnostics and sampling strategies for low-prevalence settings", TaskForce for Global Health, September 2021 - August 2022, £109,326
14. **PI:** "Geostatistical analysis and design of STH and trachoma prevalence surveys", World Health Organization, April 2021 - December 2022. £55,000
15. **CI:** "Geostatistical inference using spatially misaligned and aggregated data: a novel framework for disease mapping in low-resource settings", Royal Society Interface Newton International Fellowship, March 2021 - March 2024, £103,106
16. **PI:** Spatio-temporal geostatistical methods for malaria mapping in North-East Uganda, 2020-2022, PilgrimAfrica, $66,678
17. **CI:** Mosquito-Borne Disease Prevention in Africa- Network (MosquitoNET), 2019, EPSRC, £3,390
18. **PI:** "A capacity-building platform for advancing biostatistics in Ethiopia, Kenya and Malawi", April 2020-April 2021, Engineering and Physical Science Research Council, £147,885.
19. **CI:** "Predictive Personalized Public Health (P3H): A Novel Paradigm to Treat Infectious Disease", National Institutes of Health, $96,099 (£71,344), September 2019 - September 2021
20. **PI:** "Spatio-temporal variation of malaria transmission in Africa: modelling, capacity-building and translating research into practice", Academy of Medical Sciences, £57,826 , 2019-2021
21. **CI:** "Loa loa geospatial and post-validation surveillance modelling", 2019, The Taskforce for Global Health, $142,871.3, 2019-2023
22. **CI:** "NTD Modelling Consortium: moving towards elimination", Bill and Melinda Gates Foundation, $447,364, 2017-2021
23. **PI:**"Geostatistical methods for disease risk mapping", Medical Research Council Strategic Skills Fellowship in Biostatistics, £256,631 (MR/M015297/1), 2015-2018.

- **Consultancy**

1. "Geostatistical modelling of lymphatic filariasis in Beitung, Indonesia", Whashington University (United States),$10,000
2. "Geostatistical analysis and survey design for LF control in Papua New Guinea", Case Reserve University (United States),$10,000
3. "Geo-statistical support and training in the analysis of trachoma data", Sight Savers, £12,942, March - July 2022
4. "Development and implementation of early warning system for malaria in Mozambique". November 2019 - April 2021, Clinton Health Access Initiative, $15,000
5. "Geostatistical design of soil-transmitted-helminths surveys using", Evidence in Action, 2020, £7,425
6. "Development of an early warning system for dengue in South-East Asia", HR Wallingford, 2019-2021. (Private consultancy for mentoring and training of research staff)

7. "Development of mathematical algorithms and software models for the KoalaBASE dataset", 2018, University of Queensland, £4,500
8. "Technical support to provide malaria risk maps (continuous and by administrative areas) for Tanzania and Mali ", 2018, Department for International Development UK, £10,000
9. "Case-control study on household air pollution and pneumonia in Malawian adults", 2017, Liverpool School of Tropical Medicine, £2,000

TEACHING

- **Summer school on infectious disease epidemiology**: As Head of the WHO Collaborating Centre (WHO-CC) in Lancaster, I established formal partnerships with WHO-CCs in Zanzibar (Tanzania) and Naples (Italy) to create a summer school on the epidemiology of infectious diseases. Delivered as a taught MSc module (15 credits) in July 2024 on Pemba Island, the program has been successfully integrated into the MSc and PhD in Health Data Science curricula in Lancaster University.
- **MSc courses**
  1. **Model-based Geostatistics for Global Health** at Oxford University. Appointed as an external lecturer to develop and deliver the course *"Model-based Geostatistics for Global Health"* for the MSc in Modeling for Global Health.
     - Approx. 20 students, 15 hours of teaching contact.
     - Delivered in March 2023 and March 2024.
  2. **Model-based Geostatistics for Global Health** at Cambridge University. Appointed as an external lecturer to develop and deliver the course *"Model-based Geostatistics for Global Health"* for the MPhil in Population Health.
     - Approx. 15 students, 25 hours of teaching contact.
     - Delivered in April 2022 (2021-22 academic year), March 2023 (2022-23 academic year), and April 2024 (2023-24 academic year).
     - Planned delivery for April 2025 (2024-25 academic year).
  3. **Geostatistical Modelling** at Lancaster University. I have designed and delivered a two-week course (20 hours, including lectures and lab sessions) for the Master of Research in Global Health.
     - Approx. 10 students.
     - 20 hours teaching (15 credits).
     - Delivered annually from 2017-18 through 2024-25.
  4. **Model-based Geostatistics for Public Health** at Lancaster University. I have designed and delivered a two-week course (20 hours, including lectures and lab sessions) for the MSc in Health Data Science.
     - Delivered in the 2021-22 academic year.
  5. **Time-Series Analysis in Epidemiology** at Lancaster University. I have designed and delivered a two-week course (20 hours, including lectures and lab sessions) for the MSc in Health Data Science.
     - Approx. 10 students.
     - 20 hours teaching (15 credits).
     - Delivered annually in the acedemic years 2021-22, 2022-23, 2023-24 and 2024-25.
- **Medicine and Surgery (MBChB)** programme at the Lancaster Medical School.

  I have designed and supervised Special Study Modules (SSMs) in Health Data Science for medical students. These modules aim to develop analytical skills and foster interest in the application of statistical methods in the medical profession.

  - I directly supervised a total of six students.

  - I facilitated the involvement of other group members from CHICAS in supervising additional students.

- **Continuing Professional Development courses**

  1. **Introduction to Model-based Geostatistics for Global Public Health,** Online Workshop, 20-21 April 2021. Teaching material and description of the event available at `mbgworkshop2021.netlify.app/`
  2. **Workshop on Geostatistical Methods for Disease Mapping**, Lancaster University, 3-5 June 2019. I have designed, organized and delivered a three-day training workshop which brought together 28 early career researchers working on disease mapping.

- **Invited lectures and courses**

  1. **Invited course on "Geospatial methods for public health and veterinary scientists"** attended by 15 researchers across Austrialia and Honk Kong, Toowoomba, University of Queensland, 22-25 November 2019.
  2. **Introduction to model-based geostatistics for public health applications:** an invited lecture for research staff based at Servizio Sanitario Italiano and the Environmental Protection Agency of the Piedmont Region at the Unit of Cancer Epidemiology in Turin, Italy on 27 November 2018.
  3. **Lectures on Monte Carlo maximum likelihood:** a two-day workshop for MSc and PhD students in the Department of Statistics at the University of Hasselt, Belgium, on 25-26 October 2018.
  4. **Geospatial methods for public health**: invited courses for the European Programme in Epidemiological Education (`www.eepe.org/courses`) delivered in Florence, Italy, in the following years: 11-12 June 2018; 8-11 July 2019; 4-7 July 2022.
  5. **Invited lecture on geostatistics** for the Doctoral Programme in Statisics, University of Florence Italy, March 2018.
  6. **Geostatistical methods for public health scientists**: Invited short course for the duration of one week in October 2015 at the Malawi-Liverpool Wellcome Trust in Blantyre, Malawi.
  7. **Workshop on geostatistical methods for population health scientists**: Invited course at the International Society for Veterinary Epidemiology and Economics 2014 conference held in November 2015 in Merida, Mexico.
  8. **Geospatial methods for public health applications**: I have co-taught this course with Prof. Peter Diggle at the African Institute for Mathematical Sciences in Tanzania for the academic years 2015-16 and 2016-17.
  9. **Introduction to Statistical Modelling**: Course delivered at the African Institute for Mathematical Sciences in Ghana for the academic year 2016-17.

LINE MANAGEMENT, SUPERVISION AND EXMINER ROLES

- **Line management of academic staff**

  1. Dr Gemma Chaters, Lecturer (Assistant Professor), April 2024 -Present.
  2. Dr Jonathan Read, Senior Lecturer (Associate Professor), August 2021 -Present.
  3. Dr Claudio Fronterre, Lecturer (Assistant Professor), August 2021 -Present.
  4. Barry Rowlingson, Senior Research Assistant, August 2021 -Present.
  5. Dr Sam Moore, Lecturer (Assistant professor), April 2023 -Present.
  6. Dr Rihannon Edge, Lecturer (Assistant professor), August 2021 - April 2023.

- **Primary supervision and line management of Research Associates**

  1. Freya Clarke, October 2021 -Present.

2. Jana Ranchovsky, October 2022 - September 2024.
3. Dr Dileepa Ediriweera, September 2022 - November 2024
4. Tom Nicholls, April 2023 - February 2025
5. Dr Matthew Timperly, April 2023 -Present
6. Misaki Sasanami, August 2022 - November 2024
7. Dr Amita Puranik, March 2022 - June 2023
8. Dr Lucinda Hadley, February 2022 - February 2025
9. Dr Max Eyre, May 2022 - December 2022.
10. Jack Woodmansey, January 2020 - June 2020
11. Dr Benjamin Amoah, October 2018 - August 2021
12. Dr Claudio Fronterré, March 2019 - June 2021
13. Dr Olatunji Johnson, October 2019 - August 2021

- **Lancaster Medical School PhD students**

1. Richard Kamwezi, Main Supervisor, 2022-Present.
2. Nirali Soni, Main supervisor, 2022-Present
3. Pablo Ruiz Cueva, Main supervisor, 2022-Present
4. Rachel Mountain, Secondary supervisor, 2020-2024
5. Jessie Khaki, Main supervisor, 2020 -Present.
6. Max Eyre, Main supervisor, 2018-2021
7. Benjamin Amoah, Main supervisor, 2015-2018.
8. Olatunji Johnson, Main supervisor, 2017-2019.
9. Irene Kyomuhangi, Main supervisor, 2017-2021.
10. Beate Ringwald, Secondary supervisor, 2018-2022.
11. Maddy French, Secondary supervisor, 2018-2021

- **Supervision of Lancaster Medical School Visiting PhD students**

  The students below have applied to registered as Visiting PhD Research students at Lancaster University to work under my supervsion.

1. Victoria Dedavid Ferreira,Federal University of Bahia, Brazil, November 2024 - April 2025
2. Patrick K. Kalonde, Liverpool School of Tropical Medicine, April-May, 2024
3. Rachele Vada, University of Turin, April-May, 2024
4. Giorgia Stoppa, University of Padua, April-May, 2023
5. Alejandro Poza, Hasselt University: April-June, 2023; May-June 2024
6. Giovenale Moirano, University of Turin, March-April, 2019
7. Mohammad Moinudding, University of Padua, May-July, 2019
8. Berta Pujol, The Barcelona Institute for Global Health (ISGlobal), April-June, 2019

- **Supervision Lancaster Medical School Visiting Master students**

1. Agnes Nguku, Hasselt University, May-June 2019 (ERASMUS Programme)

- **Supervision External PhD students**

1. Bedilu Alamirie, Addis Ababa University (Ethiopia), Secondary supervisor, 2018-2021.
2. Yonas Shuke Kitawa, Hawassa University (Ethiopia), Secondary supervisor, 2018-2022.

3. Rebecca Nightingale, Liverpool School of Tropical Medicine, Co-supervisor, 2016-2020.

- **Supervision Lancaster University Master students**
  - Master of Research in Global Health: 2019/20 Anna Trett; 2017/18 Max Eyre, Joshua Longbottom, Remy Hoek Spaans, Melodie Samarro, Wanjiku Kagima.
  - MSc in Data Science: Luis Bardon-Barnett (2019/20)
  - MSc in Statistics: Freya Clarke (2021-22)
  - MSc in Health Data Science: Mahi Chowdhury (2021-22), Catherine Ojo (2021-22), Jana Ranchovski (2022-23), Prika Huang (2022-23).
- **External Master students**
  1. Guy Tsafack (African Institute for Mathematical Sciences - Cemeroon), 2019.
  2. Grace Ndukukyule (African Institute for Mathematical Sciences - Ghana), 2016.
  3. Susan Nabusamba (African Institute for Mathematical Sciences - Ghana), 2016.
  4. Mawazo Mtafya (African Institute for Mathematical Sciences - Tanzania), 2016.
  5. Olatunji Johnson (African Institute for Mathematical Sciences - Tanzania), 2015.
  6. Edwin Moyo (African Institute for Mathematical Sciences - Tanzania), 2015.
- I have acted as an **External PhD examiner** for the following theses:
  1. "Efficient Spatial and Temporal Learning with Sparse Spectral Gaussian Processes," Jeremy Sellier, University College London (February 2024).
  2. "Statistical Modelling with Additive Gaussian Process Priors," Sahoko Ishida, London School of Economics, London, UK (November 2023).
  3. "A Statistical Framework to Adapt Traditional Spatial and Temporal Methods to Non-standard Specialized Large Databases," Oana Petrof, Hasselt University, Belgium (November 2022).
  4. "Statistical Computing with Graphics Processing Units," Ruoyong Xu, University of Toronto, Canada (December 2022).
  5. "Modelling the Spatio-temporal Heterogeneity of Malaria in Sub-Saharan Africa," Polycarp Kambona Mogeni, The Open University, UK (September 2017).
- **Internal examiner:** Poppy Miller (PhD in Statistics and Epidemiology), Lisa Koeppel (PhD in Statistics and Epidemiology), Alison Hale (MSc in Statistics), Jude Kum (MSc in Data Science), Thomas Ian Lidgard (MSc in Statistics).

OTHER ENGAGEMENT AND OUTREACH ACTIVITIES

- **Organizer of the WHO Collaborating Centre Technical Meeting on Geostatistical Methods for Trachoma Elimination** (Lancaster University, 5–6 March 2024): Organized a technical meeting that convened 38 participants, including statisticians, epidemiologists, stakeholders, and policymakers from low- and middle-income countries, to discuss the application of geostatistical methods to inform trachoma elimination strategies.
- **Organizer of the International Workshop on Disease Mapping in Low-resource Settings** (Lancaster University, 14–15 September 2017): Hosted a two-day workshop bringing together internationally leading experts in spatial epidemiology and statistics to address public health challenges in Sub-Saharan Africa.
- **Engagement with the Lancaster Medical School assessment team**: Initiated two impactful projects to enhance the assessment and selection processes at the medical school:

  - Developed a user-friendly application to standardize scores from the Multiple Mini Interviews (MMIs) for the MBChB programme. This innovation, implemented in 2023–24, improved fairness and efficiency in the selection process. The project was presented at the European Board of Medical Assessors Annual Conference (April 2024) and is under review for publication in *BMC Medical Education*.
  - Supervised the development of a Microsoft Access database to monitor the participation and training completion of Observed Structured Clinical Examination (OSCE) examiners, enhancing data management and reporting capabilities.

- Actively engaged in **public outreach and diversity initiatives**, including:
  - Hosting two Black interns as part of the Health Data Research UK Black Internship Programme (2024), focusing on disease mapping and vector distribution modeling.
  - Supervising an A-level student through the In2Stem initiative (October 2024), introducing them to health data science and neglected tropical diseases (NTDs), culminating in a poster presentation.

- Supported the establishment of cross-faculty initiatives, including the **Africa Research Hub** and the **Data Science Institute Geospatial Research Group**, by organizing inaugural events and integrating perspectives from the Faculty of Health and Medicine.