Curriculum Vitae - Dr Olatunji Johnson

Employment

2021-Present Lecturer (Grade 7) in Statistics, University of Manchester, UK
2019-2021 Senior Research Associate, Lancaster University, UK

Academic qualifications

2020 PhD (Statistics and Epidemiology), Lancaster University, UK
2016 MSc (Mathematical Sciences), African Institute for Mathematical Sciences, Tanzania
2014 BTech (Statistics), Federal University of Technology, Akure, Nigeria

Grants and Awards

- **PI on Wellcome Trust grant** to work on "Droughts and Despair: An Innovative Tool for Policy-Makers to Assess Climate Change's Economic Impact on "Diseases of Despair" in Farming Communities" (£80,000). March 2024 - February 2025.
- **Co-PI on University of Manchester Research Institute (UMRI) Pump Priming grant** to build an interdisciplinary action research programme on land use, land management and zoonotic disease burden (£50,000). September 2023 - June 2024.
- **PI on London Mathematical Society grant** to support international research visit (£2,200). August 2023 – February 2024.
- **Fully-funded PhD scholarship**: awarded by the Connected Health Cities to study for a PhD in statistics and epidemiology. PI- £80,000 (2017 – 2020).
- **Fully-funded MSc Scholarship:** awarded by the African Institute for Mathematical Sciences to study for a MSc in Mathematical Sciences. PI - $25,000 (2015-2016).
- **Best graduating student**: given by the Department of Statistics, Federal University of Technology Akure, Nigeria in recognition of an outstanding performance in Bachelor's degree. PI - £500, (2014).

Teaching and Learning

Course Leader: MATH4/68011 Longitudinal and Spatial Data Analysis (2025 till date).
Course Leader: MATH4/68011 Longitudinal Data Analysis (2023 - 2025).
Course Leader: MATH4/68011 Linear Models and Nonparametric Regression (2021 - 2023).
Course Leader: MATH4/68181 Extreme values and Financial risks (2022/23).

Leadership positions

- *Post Graduate Research Director for Probability and Statistics group (07/2023 - 07/2025):* Department of Mathematics, University of Manchester, UK.
- Member of the Departmental Promotions Committee (07/2022 till date): Department of Mathematics, University of Manchester, UK.
- Statistics seminar organizer (09/2021 till date): Probability and statistics group, Department of Mathematics, University of Manchester, UK.
- Postgraduate student representative (03/2017 – 02/2020): Lancaster medical school research committee, Lancaster University, UK
- Health session chair (07/2019): Spatial Statistics Conference, Sitges, Spain.

Selected invited talks at international conferences and workshops

1. Delivered an invited talk at the University of Manchester's workshop on causality in healthcare, titled "Challenges and Opportunities in Causal Mediation Analysis for Spatio-Temporal Data" (12/2024).

2. Invited to give a talk at the Statistics and Data Science Seminars (12/2024) organized by the School of Mathematical Sciences at Queen Mary University of London, on a geostatistical method for analysing multiple outcomes data.
3. Gave a talk at the GEOMED conference 2024 on Geostatistical methods for efficient safety assessment of Ivermectin in Loa loa endemic areas.
4. Gave a talk at Black Heroes of Statistics Workshop (11/2023) on “Bridging the Gap: Connecting Academia and Real-world Statistics”.
5. Invited to give a workshop at the department of Earth and Environmental Sciences, Manchester University (02/2023) on Spatial Statistics in Ecology.
6. Invited to give a talk at the RSS Merseyside Local Group meeting (02/2023) on the Geostatistical methods for efficient safety assessment of Ivermectin in Loa loa endemic areas.
7. Invited to give a talk at the Applied Spatial Modelling seminar (05/2022) organized by the School of Geography & Environmental Science, University of Southampton, on a geostatistical method for analyzing multiple outcomes data.
8. Invited to give a talk at the statistical science seminar (03/2022) organized by the Department of statistical science, University College London, on a geostatistical method for analyzing data from multiple *Loa loa* diagnostic tools.
9. Delivered a workshop on statistical modelling approaches to disease mapping held at University of Cape Town, South Africa (2020) which includes a tutorial session analysing geospatial data in R.
10. Invited to give a talk at the Royal Statistical Society (RSS) Conference in Belfast, UK (09/2019) on the use of electronic health records to model spatial variation in disease risk.
11. Attended spatial statistics conference in Sitges, Spain (2019) and presented my paper on “A Spatially Discrete Approximation to Log-Gaussian Cox Processes for Modelling Aggregated Disease Count Data” and introduced my R package, SDALGCP.
12. Invited to a Workshop on Data Analytics held at University of Manchester, UK (2019), organised by Manchester Evidence Synthesis Research Network, in association with the National Institute for Health and Care Excellence (NICE) to present my work on “Geostatistical mapping of the risk of COPD emergency admission in South Cumbria and North Lancashire”.
13. Delivered a Workshop on Model-based Geostatistics for Spatially Aggregated Disease Data held at Federal University of Technology, Akure, Nigeria (2019) which includes a tutorial session on the use of my R package, SDALGCP.
14. Attended the International Biometric Conference (IBC) in Barcelona, Spain (2018) and presented my paper on “A Spatially Discrete Approximation to Log-Gaussian Cox Processes for Modelling Aggregated Disease Count Data”.
15. Invited to a Workshop on Geospatial Methods for Closing the Global Mortality Data Divide at University of Toronto, Canada (2018) to present my paper on “A Spatially Discrete Approximation to Log-Gaussian Cox Processes for Modelling Aggregated Disease Count Data”
16. Invited to a Workshop on Statistical Approaches to Spatial Misalignment Problems held at Lancaster University, UK (2018) to present my research on “using model-based geostatistical approach to deal with spatial misalignment problem”.

Selected peer-reviewed publications

1. Afuleni, M. K., Cahuantzi, R., Lythgoe, K. A., Mulaga, A. N., Hall, I., **Johnson, O.**, & House, T. (2025). Epidemiological and phylogenetic analyses of public SARS-CoV-2 data from Malawi. To appear in *PLoS Global Public Health*.

2. Houénafa, S. E., Ronoh, E. K., **Johnson, O.**, & Moore, S. E. (2025). Lévy-induced stochastic differential equation models in rainfall–runoff systems for assessing extreme hydrological event risks. *Stochastic Environmental Research and Risk Assessment*, 1-18.
3. Houénafa, S. E., **Johnson, O.,** Ronoh, E. K., & Moore, S. E. (2025). Hybridization of Stochastic Hydrological Models and Machine Learning Methods for Improving Rainfall-Runoff Modelling. *Results in Engineering*, 104079.
4. Sambo, M., Hampson, K., Johnson, P. C., & **Johnson, O.** (2024). Understanding and overcoming geographical barriers for scaling up dog vaccinations against rabies. *Scientific Reports*, *14*(1), 30975.
5. Minnery, M., Okoyo, C., Morgan, G., Wang, A., **Johnson, O.,** Fronterre, C., ... & Diggle, P. (2024). Cost-effectiveness of comparative survey designs for helminth control programs: post-hoc cost analysis and modelling of the Kenyan national school-based deworming program. *PLOS Neglected Tropical Diseases*, *18*(12), e0011583.
6. Okello, G., Nantanda, R., Tatah, L., Sserunjogi, R., **Johnson, O.**, Awokola, B., ... & Oni, T. (2024). Association between ambient air pollution and respiratory health in Kampala, Uganda: Implications for policy and practice. *Urban Climate*, *58*, 102128.
7. Awokola, B., Lawin, H., **Johnson, O**., Humphrey, A., Nzogo, D., Zubar, L., ... & Mbatchou-Ngahane, B. H. (2024). Non-communicable airway disease and air pollution in three African Countries: Benin, Cameroon and The Gambia. *IJTLD OPEN*, *1*(4), 174-180.
8. Eyre, M. T., Bulstra, C. A., **Johnson, O**., de Vlas, S. J., Diggle, P. J., Fronterrè, C., & Coffeng, L. E. (2024). A Comparison of Markov and Mechanistic Models for Soil-Transmitted Helminth Prevalence Projections in the Context of Survey Design. *Clinical Infectious Diseases*, *78*(Supplement_2), S146-S152.
9. Kitawa, Y., **Johnson, O.**, Giorgi, E., & Asfaw, Z. G. (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, e01926.
10. Awokola, B., Okello, G., **Johnson, O.**, Dobson, R., Ouédraogo, A. R., Dibba, B., ... & Semple, S. (2022). Longitudinal Ambient PM2. 5 Measurement at Fifteen Locations in Eight Sub-Saharan African Countries Using Low-Cost Sensors. *Atmosphere*, *13*(10), 1593.
11. Afolabi, M. O., Adebiyi, A., Cano, J., Sartorius, B., Greenwood, B., **Johnson, O.**, & Wariri, O. (2022). Prevalence and distribution pattern of malaria and soil-transmitted helminth co-endemicity in sub-Saharan Africa, 2000–2018: A geospatial analysis. *PLoS neglected tropical diseases*, *16*(9), e0010321.
12. Fofana, M. O., Nery Jr, N., Aguilar Ticona, J. P., de Andrade Belitardo, E. M., Victoriano, R., Anjos, R. O., **Johnson, O**, ... & Ko, A. I. (2022). Structural factors associated with SARS-CoV-2 infection risk in an urban slum setting in Salvador, Brazil: A cross-sectional survey. *PLoS medicine*, *19*(9), e1004093.
13. **Johnson, O.,** Giorgi, E., Fronterrè, C., Amoah, B., Atsame, J., Ella, S. N., ... & Diggle, P. J. (2022). Geostatistical modelling enables efficient safety assessment for mass drug administration with ivermectin in Loa loa endemic areas through a combined antibody and LoaScope testing strategy for elimination of onchocerciasis. *PLoS neglected tropical diseases*, *16*(2), e0010189.
14. Mogaji, H. O., **Johnson, O. O.**, Adigun, A. B., Adekunle, O. N., Bankole, S., Dedeke, G. A., ... & Ekpo, U. F. (2022). Estimating the population at risk with soil transmitted helminthiasis and annual drug requirements for preventive chemotherapy in Ogun State, Nigeria. *Scientific reports*, *12*(1), 1-12.
15. Ella, S. N., Ogoussan, K., Gass, K., Hundley, L., Diggle, P. J., **Johnson, O**., ... & Atsame, J (2021). An Integrated District Mapping Strategy for Loiasis to Enable

Safe Mass Treatment for Onchocerciasis in Gabon. *The American journal of tropical medicine and hygiene*, tpmd210799.

16. **Johnson, O.**, Fronterre, C., Diggle, P. J., Amoah, B., & Giorgi, E. (2021). MBGapp: A Shiny application for teaching model-based geostatistics to population health scientists. *PloS one*, *16*(12), e0262145.
17. **Johnson, O.**, Fronterre, C., Amoah, B., Montresor, A., Giorgi, E., Midzi, N., ... & Diggle, P. J. (2021). Model-based geostatistical methods enable efficient design and analysis of prevalence surveys for soil-transmitted helminth infection and other neglected tropical diseases. *Clinical Infectious Diseases*, *72*(Supplement_3), S172-S179.
18. Amoah, B., Fronterre, C., **Johnson, O**., Dejene, M., Seife, F., Negussu, N., ... & Diggle, P. J. (2021). Model-based geostatistics enables more precise estimates of neglected tropical-disease prevalence in elimination settings: mapping trachoma prevalence in Ethiopia. *International journal of epidemiology*.
19. Diggle, P.J., Amoah, B., Fronterre, C., Giorgi, E. and **Johnson, O.** (2021). Rethinking NTD prevalence survey design and analysis: a geospatial paradigm. Transactions of the Royal Society of Tropical Medicine and Hygiene
20. N. Midzi, A. Montresor, MJ. Mutsaka-Makuvaza, C Fronterre, P. Manangazira, I. Phiri, **O. Johnson**, G. Mhlanga, PJ. Diggle (2020). Elimination of STH morbidity in Zimbabwe results of 6 years of deworming intervention for school-age children: PLoS Neglected Tropical Diseases, 14(10), e0008739.
21. **Johnson, O.**, Gatheral, T., Knight, J., and Giorgi, E. (2020). A modelling framework for developing early warning systems of COPD emergency admissions: Spatial and Spatio-temporal Epidemiology, 36, 100392.
22. **Johnson, O.**, Diggle, P.J. and Giorgi, E. (2020). Dealing with spatial misalignment to model the relationship between deprivation and life expectancy in Liverpool: A model-based geostatistical approach. International Journal of Health Geographics, 19(1), 1-13.
23. **Johnson, O.**, Diggle, P.J. and Giorgi, E. (2019). A Spatially Discrete Approximation to Log-Gaussian Cox Processes for Modelling Aggregated Disease Count Data. Statistics in Medicine, 38(24), 4871-4887.
24. **Johnson, O.** and Giorgi, E. (2016). Model-based Geostatistical Mapping of River Blindness Prevalence in Cameroon. M.Sc thesis, African Institute for Mathematical Sciences, Tanzania.
25. Adebola, F.B. and **Johnson, O.** (2015). An Improved Warner's Randomized Response Model. International Journal of statistics and applications, Vol. 5(6), 263-267.
26. Adebola, F.B., **Johnson, O.** and Adegoke, N.A. (2014). A Modified Stratified Randomized Response Technique. Mathematical Theory and Modeling, Vol. 4(13), 29- 42

R statistical software packages

- **Johnson, O.,** Diggle, P.J. and Giorgi, E. - SDALGCP: an R package for the analysis of spatially and spatio-temporally aggregated disease data. https://cran.r-project.org/web/packages/SDALGCP/index.html
- **Johnson, O.** - MBGapp: an R package that runs the web application for model-based geostatistical analysis. https://rdrr.io/github/olatunjijohnson/MBGapp/
- **Johnson, O.**, Fronterre, C.- ESPENApp: an R package for searching and downloading neglected tropical diseases (NTD) data from WHO expanded special project for elimination of NTD Application Programming Interface (API). https://olatunjijohnson.shinyapps.io/espenshiny/
- **Johnson, O.** - A web application for teaching geospatial analysis to non-statistician. Available at https://olatunjijohnson.shinyapps.io/mbgapp/