Olatunji Olugoke Johnson

Curriculum Vitae

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EDUCATION AND QUALIFICATIONS

2017–2020 **Lancaster University, United Kingdom**,
PhD in Statistics and Epidemiology.

2015–2016 **African Institute for Mathematical Sciences (AIMS), Tanzania**,
M.Sc in Mathematical Sciences,
Distinction.

2009–2014 **Federal University of Technology Akure (FUTA), Nigeria**,
B.Tech in Statistics,
First Class Honours.

EMPLOYMENT HISTORY

○ **Lecturer in Statistics** (08/2021 till date) in the department of Mathematics, Manchester University, UK. My current role involve teaching statistics courses to undergraduate and postgraduate students; and research in spatial statistics with application to global public health and environmental epidemiology.

○ **Senior Research Associate** (10/2019 - 07/2021) in geospatial statistical methods in Lancaster Medical School, Lancaster University, UK. My role involved working on the following:
  - development of geospatial statistical models for the design and analysis of prevalence surveys of neglected tropical diseases (NTD) in poor resource countries;
  - help national control programs to evaluate progress made towards elimination of the NTDs; and
  - development of computationally and statistically efficient methods for real-time health surveillance.
  - Also, tutored courses in Environmental Epidemiology (CHIC 565).

○ **Teaching Assistant** (10/2017 - 07/2019) for undergraduate and postgraduate courses in Mathematics and Statistics Department, Lancaster University, UK.
  Courses tutored include:
  - Statistical Inference (CFAS406);
  - Generalised Linear Models (MATH552);
  - Time Series (MATH334);
  - Computational Mathematics (MATH245).
  - Scientific and Statistical Methods (CHIC 401)
  - Probability (MATH 103)

○ **Teaching Assistant** (10/2017 - 07/2019) for undergraduate courses in Biomedical and Life Sciences Department, Lancaster University, UK.
  Tutored: Experimental Design and Data Analysis (BIOL 132).

○ **Mathematics Tutor** (05/2015 - 08/2015) for final year high school students in Government Unity Secondary School, Ringim, Jigawa State, Nigeria.

○ **Data Analyst** (04/2013 - 10/2013) Power Holding Company of Nigeria.

PUBLICATIONS

○ **Johnson, O.**, Fronterre, C., Diggle, P.J, Amoah, B., Giorgi, E. (2021). MBGapp: A Shiny application for teaching model-basedgeostatistics to population health scientists *PLoS One* (submitted).

○ **Johnson, O.**, Fronterre, C., Amoah, B., Montresor, A., Giorgi, E., Midzi, N., Mutsaka-Makuvaza, MJ., Kargbo-Labor, I., Hodges, MH., Zhang, Y., Okoyo, C., Mwandawiro, C., Minnery, M., 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, Volume 72, Issue Supplement_3, 15 June 2021, Pages S172–S179*.

○ Amoah, B., Fronterre, C., **Johnson, O.**, Dejene, M., Seife, F., Negussu, N., Bakhtiari, A., Harding-Esche,

○ E., Giorgi, E., Solomon, A., Diggle, P (2021). Geostatistical analysis yields more precise estimates of neglected tropical diseases in elimination settings: the example of trachoma in Ethiopia. *International journal of epidemiology*, (accepted)

○ 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, Volume 115, Issue 3, March 2021, Pages 208–210.*

○ 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.*

○ **Johnson, O.**, Gatheral, T., Knight, J., and Giorgi, E. (2021). A modelling framework for developing early warning systems of COPD emergency admissions: Spatial and Spatio-temporal Epidemiology, 36, 100392.

○ **Johnson, O.** (2020). Geostatistical methods for modelling spatially aggregated data (Doctoral dissertation, Lancaster University).

○ **Johnson, O.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.*

○ **Johnson, O.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.*

○ **Johnson, O.O.** and Giorgi, E. (2016). Model-based Geostatistical Mapping of River Blindness Prevalence in Cameroon. M.Sc thesis, African Institute for Mathematical Sciences, Tanzania.

○ Adebola, F.B. and **Johnson, O.O.** (2015). An Improved Warner's Randomized Response Model. *International Journal of statistics and applications, Vol. 5(6), 263-267.*

○ Adebola, F.B., **Johnson, O.O.** and Adegoke, N.A. (2014). A Modified Stratified Randomized Response Technique. *Mathematical Theory and Modeling, Vol. 4(13), 29-42.*

SOFTWARE

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.

○ **Johnson, O.** - **MBGapp:** an R package that runs the web application for model-based geostatistical analysis.

○ **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).

Web applications with shiny

○ **Johnson, O.** - A web application for teaching geospatial analysis to non-statistician. Available at `https://olatunjijohnson.shinyapps.io/mbgapp/`

○ **Johnson, O.** - A web application for mapping neglected tropical diseases (NTD) data from WHO expanded special project for elimination of NTD portal. Available at `https://olatunjijohnson.shinyapps.io/espenshiny/`

○ **Johnson, O.** - Spatially continuous prediction of life expectancy at birth in Liverpool, UK. Available at `http://fhm-chicas-apps.lancs.ac.uk/shiny/users/johnsono/LEBLiverpool/`

○ **Johnson, O.** - Geostatistical modelling of COPD emergency admission in North Lancashire and South Cumbria, UK. Available at `http://fhm-chicas-apps.lancs.ac.uk/shiny/users/johnsono/SDALGCPApp/`

CONFERENCES/WORKSHOPS

○ 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.

○ 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.

○ 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`.

- 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"*.
- 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`.
- 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"*.
- 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"*
- 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"*.

SKILLS

- **Script writing:** FORTRAN, C++, Python and **R**.
- **Mapping tool:** Geographic Information System (GIS)

SCHOLARSHIPS, HONOURS AND AWARDS

- **Funded PhD Studentship, 2017**, Connected Health Cities United Kingdom.
- **Most Outstanding Student Award, 2016,** African Institute for Mathematical sciences, Tanzania.
- **Excellent Essay Project Prize, (2016)** for the best MSc thesis, African Institute for Mathematical sciences, Tanzania.
- **MSc Full Scholarship, 2015,** African Institute for Mathematical sciences, Tanzania.
- **Best Graduating Student Award, 2014,** Department of Statistics, Federal University of Technology, Akure, Nigeria.
- **Most Influential Student Award, 2014,** Association of Statistics Students of Nigeria (ASSON), Nigeria.
- **Most Active Student Award, 2013,** National Association of Science Students (NASS), Nigeria.

LEADERSHIP POSITIONS

- **Health session chair (07/2019)**
  Spatial Statistics Conference, Sitges, Spain.
  I was responsible for timekeeping and ensure each speaker keeps to their allotted time. I facilitate an engaging and relevant discussion at the end of the presentation.
- **Medical school research committee postgraduate student representative (03/2017 - 02/2020).**
  Lancaster University, UK
  Postgraduate research representation on the departmental research committee. Worked together with committee members in the development of strategies to strengthen and promote research in the department. I ensure that the research supports that are available for the staffs are extended to the postgraduate students. One of my achievements is free paper review for the postgraduate research students.
- **Coordinator of statistics session (06/2016)**
  Mathematics Camp, Tanzania
  Lead the statistics session for the Maths camp held in Tanzania, organised by African Maths Initiative. Prepared the material and delivered a lecture on disease mapping in Africa.
- **Chairman electoral committee (12/2014)**
  Association of Statistics Student of Nigeria (ASSON), FUTA, Nigeria
  Conduct an election for the executive members. Ensure proper handing-over of the outgoing executive.
- **Secretary auditing committee (2012–2013)**

National Association of Mathematical Sciences Student (NAMSS), FUTA, Nigeria
Audit the financial transaction of the society. Produce an audit report for the society members.

- **Course representative for Statistics degree program (2009–2014)**
  Federal University of Technology, Akure, (FUTA), Nigeria.
  Accurate and timely dissemination of relevant information to my classmates. Engage in diplomatic liaisons with the teaching staffs.

PROFESSIONAL MEMBERSHIP

- Fellow of the Royal Statistical Society (**139350**).
- Student fellow of the International Biometric Society (**1308821**).

REFEREES

- Prof. Peter John Diggle
  Distinguished University Professor,
  Lancaster Medical School,
  Lancaster University,
  United Kingdom.
  Email: p.diggle@lancaster.ac.uk
  Phone no: +44(0)7963829999

- Dr Emanuele Giorgi
  Senior Lecturer,
  Lancaster University,
  Lancaster LA1 4YG,
  United Kingdom.
  Email: e.giorgi@lancaster.ac.uk
  Phone no: +44(0)7453286122

- Prof. Femi Barnabas Adebola
  University Professor,
  Department of Statistics,
  Federal University of Technology,
  Akure, Nigeria.
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  Phone no: +234(0)8038380448