Curriculum Vitae

Kayode Isaac Oshinubi

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Current Position: Postdoctoral Researcher

US Residency Status: Permanent Residence

**Education**

**PhD** in Mathematical and Statistical Modeling of Epidemic Data  
Université Grenoble Alpes, France (2022)

**MSc** (Distinction, Top 5%) in Applied Mathematics  
University of Ilorin, Nigeria (2015)

**BSc** (Second Class Upper, Top 2%) in Mathematics  
Ekiti State University, Nigeria (2013)

**Appointments**

* Postdoctoral Researcher, Northern Arizona University, USA (Jan 2023—Present)
* Guest Scientist, Biostatistics Division, HZI Germany (Dec 2023—Feb 2024)
* Visiting Researcher, Bielefeld University, Germany (Nov 2022—Jan 2023)
* Visiting Researcher, University of Oxford, UK (Jun 2022—Aug 2022)
* Doctoral Researcher, Université Grenoble Alpes, France (Oct 2019—Oct 2022)
* Lecturer, Lagos State University, Nigeria (Sep 2016—Oct 2019)
* Associate Lecturer, Caleb University & Caleb Business School, Nigeria (2016—2018)
* Teaching Assistant, Bells University of Technology, Nigeria (Jul 2013—Jun 2014)

**Research Interests**

* Disease Ecology & Infectious Disease Modeling
* Computational & Applied Epidemiology
* Mathematical & Statistical Modeling
* Data Science, Machine Learning & Visualization
* Biostatistics & Biomathematics

**Programming and Software Skills**

* Scientific Visualization (e.g., Matplotlib, Seaborn, ggplot2)
* R (e.g., dplyr, RMarkdown, caret, lubricate)
* LaTeX Document Preparation
* Tools & Technologies: Git/GitHub/Docker/PyCharm/VS Code/Jupyter Notebooks
* High-Performance Computing
* Python (e.g., NumPy, PyTorch, SciPy, scikit-learn, JAX)

**Selected Publications & Preprints**

Below are some selected publications. See full list: [Google Scholar](https://scholar.google.com/citations?user=AdCl7PMAAAAJ&hl=en), [ORCID](https://orcid.org/0000-0003-4598-8510)

**Peer-Reviewed Journal Articles**

* J. Demongeot, P. Magal and **K. Oshinubi**, Forecasting the changes between endemic and epidemic phases of a contagious disease, with the example of COVID-19, *Mathematical Medicine and Biology: A Journal of the IMA*, 42, 98-112, (2025).
* J.R. Mihaljevic, C. Chief, M. Malik, **K. Oshinubi**, E. Doerry, E. Gel, C. Hepp, T. Lant, S. Mehrotra and S. Sabo, An inaugural forum on epidemiological modeling for public health stakeholders in Arizona, *Front. Public Health*, 12, 1357908, (2024).
* C. A. Malmborg, A. M. Willson, L. M. Bradley, M. A. Beatty, D. H. Klinges, G. Koren, A. S. L. Lewis, **K. Oshinubi** and W. M. Woelmer, Defining model complexity: An ecological perspective, *Meteorological Applications*, 31, e2202, (2024).
* **K. Oshinubi**, P. Magal, O. Longe and J. Demongeot, Editorial: Mathematical and statistical modeling of infection and transmission dynamics of viral diseases, *Front. Public Health*, 11, 1295976, (2023).
* **K. Oshinubi**, O.J. Peter, E. Addai, E. Mwizerwa, O. Babasola, I.V. Nwabufo, I. Sane, U.M. Adam, A. Adeniji, and J.O. Agbaje, Mathematical Modelling of Tuberculosis Outbreak in an East African Country Incorporating Vaccination and Treatment, *Computation*, 11, 143, (2023).
* B. Kammegne, **K. Oshinubi**, O. Babasola, O.J. Peter, O.B. Longe, R.B. Ogunrinde, E.O. Titiloye, R.T. Abah and J. Demongeot, Mathematical Modelling of the Spatial Distribution of a COVID-19 Outbreak with Vaccination Using Diffusion Equation, *Pathogens*, 12, 88, (2023).
* **K. Oshinubi**, I. Firas, M. Rachdi and J. Demongeot, Functional data analysis: transition from daily observation of COVID-19 prevalence in France to functional curves, *AIMS Mathematics*, 7, 5347-85, (2022).
* J. Waku, **K. Oshinubi** and J. Demongeot, Maximal reproduction number estimation and identification of transmission rate from the first inflection point of new infectious cases waves: COVID-19 outbreak example, *Mathematics and Computers in Simulation*, 198, 47-64, (2022).
* J. Demongeot and **K. Oshinubi**, Surveillance of elderlies at home: sensors, portable medical imaging devices, medical data management on smart phone[J], *AIMS Bioengineering*, 9, 362-363, (2022).
* M. Jelassi, **K. Oshinubi**, M. Rachdi and J. Demongeot, Epidemic dynamics on social interaction networks, *AIMS Bioengineering*, 9, 348-361, (2022).
* **K. Oshinubi**, A. Amakor, O.J. Peter, M. Rachdi and J. Demongeot, Approach to COVID-19 Time Series Data Using Deep Learning and Spectral Analysis Methods, *AIMS Bioengineering*, 8, 9-21, (2022).
* **K. Oshinubi**, F. Al-Awadhi, M. Rachdi and J. Demongeot, Data Analysis and Forecasting of COVID-19 Pandemic in Kuwait Based on Daily Observation and Basic Reproduction Number Dynamics, *Kuwait J. Sci*., Special Issue, 1-30, (2021).

**Conference Proceedings & Posters**

* **K. Oshinubi**, C. Hepp, E. Doerry, Y. Chen, J. Mihaljevic, Accounting for spatial variation in climatic factors predicts spatial variations in mosquito abundance in the desert southwest, Ecology and Evolution of Infectious Diseases (EEID), USA (2024).
* S. Lamm, A. Nez, T. Coles, **K. Oshinubi**, E. Doerry, Y. Chen, J. Mihaljevic, Deciphering Infectious Disease Disparities: A Statistical Clustering Method for Socio-Demographic and Movement Data, Arizona Women's Symposium in Mathematics (AWSiM), USA (2023).
* J. Mihaljevic, T. Coles, **K. Oshinubi**, E. Doerry, Y. Chen, C. Hepp, S. Sabo, E. Gel, S. Mehrotra, epymorph: A standardized framework for constructing, simulating, and fitting spatial models, Epidemics, Italy (2023).
* **K. Oshinubi**, J. Demongeot and B. Kammegne, Mathematical modeling of the spatial distribution of a COVID-19 epidemic, ICIAM 2023, Japan (2023).
* **K. Oshinubi**, M. Wittmann, The effects of nonlinear averaging of temperature on population growth varies across diverse species, ESA 2023, USA (2023).
* **K. Oshinubi**, M. Rachdi and J. Demongeot, Age-dependent modeling and its application to the COVID-19 outbreak, BAMC, UK (2022).
* J. Demongeot, **K. Oshinubi**, M. Rachdi and H. Seligmann, Geoclimatic, Demographic, and Socio-economic Determinants of the COVID-19 Prevalence, EGU General Assembly Conference Abstracts, EGU21-7976 (2021).

**Preprints Under Review**

* **K. Oshinubi**, Y. Chen,E. Doerry, E. Gel, C. Hepp, T. Lant, S. Mehrotra, S. Sabo and J.R. Mihaljevic, A Systematic Review of Spatial Epidemiological Modeling Approaches Applied During the COVID-19 Pandemic, *BMC Public Health* (Submitted).
* **K. Oshinubi**, C. Hepp,Y. Chen,E. DoerryandJ.R. Mihaljevic, Accounting for spatial variation in climatic factors predicts spatial variations in mosquito abundance in the desert southwest, *Parasites & Vectors* (in preparation).
* A. Nez, **K. Oshinubi**, T. Coles, E. Doerry, Y. Chen and J.R. Mihaljevic, Measles Meta-population Model Dynamics: Developing Realistic Movement Models to Assess Measles Spatial Spread Potential (in preparation).

**Workshops, Conferences, and Summer Schools**

Presented at over 40 international conferences, including

* 2024 Ecology and Evolution of Infectious Diseases (EEID), USA (2024)
* ESA Annual Meeting (2023, 2024)
* ICIAM 2023, Tokyo
* IDM Annual Symposium, USA (2023)
* EFI Unconference, USA (2023)
* CIME Summer School, Italy (2022)
* Cambridge ELLIS Machine Learning Summer School, UK (2022)
* ICM 2022 Down Under, Australia (2022)
* 63rd British Applied Mathematics Colloquium, UK (2022)
* Study group mathematics with industry, online (2022)
* EGU General Assembly Conference, online (2021)
* SEME—Math Study Week with Fundamentals of Computing, France (2019)
* 7th Heidelberg Laureate Forum, Germany (2019)

**Grants & Funding (Total: $304,345)**

* NIH/SHERC PPP Grant ($50,000, 2025—2026)
* NAU/NASA Space Grant ($4,900, 2023—2024)
* Alexander von Humboldt grant ($4,000, 2024)
* Helmholtz Research Grant ($14,551, 2023—2024)
* IDEX Research Grant ($1,958, 2022)
* InChangE Research Grant ($5,167, 2022)
* PTDF PhD Fellowship ($74,829, 2019—2022)
* RTF-DCS Research Grant ($4,161, 2020)
* Multiple conference travel grants from ESA, SIAM, NSF, BMGF, and others

**Professional Memberships**

* Ecological Society of America (ESA)
* Institute of Mathematics and its Applications (IMA)
* Society for Industrial and Applied Mathematics (SIAM)
* IEEE & IEEE Engineering in Medicine and Biology Society
* Royal Society of Tropical Medicine & Hygiene (RSTMH)
* Models of Infectious Disease Agent Study (MIDAS) USA
* Sociéte Mathématique de France (SMF)
* Fellow of the Royal Statistical Society (RSS)
* American Society of Tropical Medicine and Hygiene (ASTMH)
* Ecological Forecasting Initiative (EFI)
* Black in Mathematics Association (BMA)

**Leadership & Service**

* Chair, Early Career Mathematicians & Member of Council, Institute of Mathematics and its Applications (2025—Present)
* Co-founder & Research Lead, Black in Mathematics Association (2022—Present)
* Member of the Governing Council Board, West Midlands Open University, Nigeria (2024—Present)
* Session Chair, SIAM 2024 Conference on Applied Mathematics, USA (2024)
* Chair & Board Member, Student Section, ESA (2022—2023)
* Co-chair & Steering Committee Member, Ecological Forecasting Initiative (2023—2025)
* Member, Academic Board, Lagos State University Foundation Program (2016—2019)
* General Coordinator—Caleb Business School, Lagos Undergraduate Programs (2017—2018)
* Member, Curriculum Review of the Department of Physical Sciences, Bells University of Technology, Otta, Nigeria (2014)

**Editorial & Peer Review Activities**

* Guest Editor, *Fractal and Fractional*, *Microorganisms*, *Computation*, *AIMS Bioengineering*, *AIMS Medical Science, BMC Infectious Diseases*
* Review Editor, *Frontiers in Public Health*
* Peer reviewer for over 50 international journals (e.g., *BMC Infectious Diseases*, *PLOS ONE*, *Scientific Reports*)
* Reviewer for conference abstracts, book chapter reviews, & grant proposals

**Teaching Experience & Student Mentoring**

Courses taught at undergraduate & graduate levels in mathematics, statistics, and computer science at

* Bells University of Technology, Nigeria (General Mathematics I & II, Mathematics for Pre-Degree, Engineering Mathematics I & II, Mathematics for Management Sciences I & II, and Further Calculus)
* Caleb University & Caleb Business School, Nigeria (Numerical Analysis II, Vector and Tensor Analysis, Abstract Algebra, Probability I, Statistics for Non-Majors, Real Analysis I & II, Vector, Basic Computer Applications, Statistics, General Mathematics I, Ring Theory, ICT Management, Student Mentoring, and Research Supervision)
* Lagos State University, Nigeria (Calculus and Mechanics)
* Université Grenoble Alpes, France (Functional Data Analysis, Modeling Infectious Disease, Student Mentoring, and Research Supervision)
* Northern Arizona University, USA (Student Mentoring and Research Supervision)

**International Affiliations**

* Fellow, African Scientific Institute, USA
* Heidelberg Laureate Forum Alumnus, Germany
* RTF-DCS Fellow, India