

Jummy F. David

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Vancouver
BC, Canada

Aug. 2020
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Education

The University of British Columbia <i>Ph.D. in Interdisciplinary Studies (Applied Mathematics)</i>	Vancouver, Canada Feb. 2020
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- ❖ 2015 - 2017 Fellowship recipient – UBC Faculty of Science
- ❖ 2015-2017 International Student Tuition Award
- ❖ 2018 UBC Award for Academic Achievement

The University of British Columbia <i>M.Sc. in Applied Mathematics</i>	Vancouver, Canada Aug. 2015
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- ❖ 2013-2015 International Student Tuition Award

Stellenbosch University African Institute for Mathematical Sciences (AIMS) <i>M.Sc. in Mathematical Sciences</i>	Cape Town, South Africa Jun. 2013
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- ❖ 2012 Scholarship for master's studies

Ladoke Akintola University of Technology <i>B.Tech. in Applied Mathematics</i>	Ogbomoso, Nigeria Dec. 2011
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- ❖ Best Graduating Student, Department of Mathematics
- ❖ 2011 Representative, National Mathematics Competition Abuja, Nigeria (NMC)

Technical Skills

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- ❖ **Basic:** Maple
 - ❖ **Intermediate:** Matlab, Python, R, Data analysis, Data wrangling and visualization with R and Python, Databases, SQL, Jupyter Notebook, Sage Notebook, HTML Programming, Microsoft Offices Tools
 - ❖ **Advanced:** LaTeX, Linux OS, iOS, Rmarkdown, Version Control with Git, GitHub (<https://github.com/funkedavid82>)

Certifications

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| ❖ Databases and SQL for Data Science
IBM, Data Science Professional Certificate | Dec. 2019 |
| ❖ Python for Data Science
IBM, Cognitive Class | Dec. 2018 |
| ❖ Machine Learning and Deep Learning with Python
IBM, Cognitive Class | Ongoing |

Research and Leadership Experience

York University Postdoctoral Fellow	Toronto, Ontario, Canada Jul. 2020 – Ongoing
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- ❖ Modelling of infectious diseases in general
- ❖ Temporal-spatial modelling studies of COVID-19, considering human mobility and diffusion and impact of age groups
- ❖ Modelling studies of mosquito-borne diseases (West Nile virus, dengue, malaria) considering climate change.

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- ❖ Conducting data analysis via R, SQL and Python
- ❖ Processing and analyzing human and time series data to assess the impact of interventions, and forecasting future trends of diseases
- ❖ Conducting model fitting, model calibration, statistical analysis, sensitivity and uncertainty analyses to using Python
- ❖ Preparing different scientific papers for publication

The University of British Columbia

Vancouver, Canada

Ph.D. Researcher

Sept. 2015 – April 2020

- ❖ Developed several mathematical models for population dynamics, infectious diseases, biological systems, and used analytical and computational tools for model analyses
- ❖ Conducted extensive data analysis via R, SQL and Python
- ❖ Processed and analyzed human and time series data to assess the impact of interventions and forecasting
- ❖ Conducted rigorous sensitivity and uncertainty analyses to evaluate the impact of assumptions on model outcomes
- ❖ Performed rigorous model fitting, model calibration, statistical analysis and predictions using Python
- ❖ Prepared different scientific papers for publication
- ❖ Mentored undergraduate students

British Columbia Centre for Excellence in HIV/AIDS

Vancouver, Canada

Research Assistant in Mathematical Modeling

Sept. 2018 – Feb. 2020

- ❖ Developed mathematical models for HIV and syphilis co-interaction among gay, bisexual, and other men who have sex with men in British Columbia
- ❖ Conducted extensive model analysis using Python
- ❖ Estimated parameters through model calibration, and predicted best intervention strategies
- ❖ Assessed the impact of Pre-exposure prophylaxis (PrEP) on syphilis epidemic, and evaluated possible intervention strategies
- ❖ Performed all sensitivity and uncertainty analyses in python

UBC Department of Mathematics Learning Centre

Vancouver, Canada

Course Tutor

Sept. 2013 - April 2020

Undergraduate courses assisted:

Differential Calculus (Math 100/110), Linear systems (Math 152), Elementary & Ordinary Differential Equations (Math 215/255), Multivariable Calculus (Math 253), Partial Differential Equations (Math 257), Elementary Differential Equations (Math 316)

- ❖ Tutored over 50 undergraduate students the above courses
- ❖ Co-ordinated, supervised and graded midterm and final exams

The University of British Columbia

Vancouver, Canada

Teaching Assistant

Sept. 2013 - April 2020

Courses: Ordinary Differential Equations, Partial Differential Equations, Elementary Differential Equations, Introduction to Mathematical Biology, Linear Algebra, Multivariable Calculus, Numerical Methods for Differential Equations

- ❖ Prepared laboratory materials including, homework, and practice problems.
- ❖ Coordinated weekly laboratory, problem-solving and discussion sections for groups of 25-50 students
- ❖ Supervised students in weekly homework

Teaching Accreditations

- ❖ Instructional Skills Workshop, UBC, Center for Teaching, Learning and Technology *Aug. 2017*

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- ❖ Math 599: Mathematics Teaching Techniques Course, UBC 2014

Other Experience

Guaranty Trust Bank Osogbo, Nigeria
Intern Oct. 2010 – Mar. 2011

- ❖ Trained in various department, such as Customer Service, Operations, & IT Department
- ❖ Supported operations team to ensure outstanding customer service experience
- ❖ Developed new customers-friendly strategies for ATM cards collection
- ❖ Resolved customers' ATM related issues such as retracted ATM cards, cash dispense errors, and short payments

Volunteer Experience

- ❖ Annual Retreat Committee – Institute of Applied Mathematics, UBC 2015-2017
- ❖ Choir – Redeemed Christian Church of God, Grace Chapel, BC. 2014-2016

Workshop, Training & Conferences

Borders in Public Health and Mathematical Epidemiology

Fields Institute, University of Toronto, Canada Oct. 2019
 ❖ Received Travel Award

Scientific Computing meets Machine Learning and Life Sciences

Texas Tech University in Lubbock, TX, USA Oct. 2019
 ❖ Received Travel Award

Borders in Public Health and Mathematical Epidemiology

Fields Institute, University of Toronto, Canada Oct. 2019
 ❖ Received Travel Award

PIMS: Deep Learning for Computational Mathematics

Big Data Hub, Simon Fraser University, Burnaby, Canada Jul. 2019

Foundations of Project Management I

Mitacs, University of British Columbia, Vancouver Jun. 2019

Conference on Multiscale Modeling in Biology

University of Minnesota, Minneapolis, USA May 2019
 ❖ Received Travel Award

10th Annual Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID)

Department of Biostatistics, University of Washington, USA Jul. 2018
 ❖ Received Travel Award

Workshop for Women in Mathematical Biology

Institute for Mathematics and its Applications (IMA), University of Minnesota, USA May 2018
 ❖ Received Travel Award

BC Data Science Workshop

University of British Columbia, Vancouver Aug. 2017

Math Modelling in industry Workshop

Pacific Institute for the Mathematical Sciences, University of Manitoba, Canada Jun. 2017

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- ❖ Received Travel Award

US-Canadian Institutes Epidemiology Summer School

Mathematical Biosciences Institute, The Ohio State University, USA

Jun. 2016

- ❖ Received Travel Award

Seminaire de Mathematiques Superieures: Dynamics of Biological Systems

University of Alberta, Canada

May 2016

- ❖ Received Travel Award

Mathematical Biology International Graduate Training Summit (IGTC)

Pacific Institute for the Mathematical Sciences, Alberta, Canada

Oct. 2013

- ❖ Received Travel Award

Research & Publications

Selected Publications

- ❖ Jummy F. David, Sarafa Iyaniwura, Michael J. Ward, and Fred Brauer, A novel approach to modelling the spatial spread of airborne diseases: an epidemic model with indirect transmission, *Mathematical Biosciences and Engineering* (2020) *April 2020*
- ❖ Jummy Funke David, Viviane Dias Lima, Jielin Zhu, Fred Brauer, A co-interaction model of HIV and syphilis infection among gay, bisexual and other men who have sex with men, *Infectious Disease Modelling* (*under review*) *Dec. 2019*
- ❖ Jielin Zhu, Ignacio Rozada, Jummy David, David M. Moore, Silvia A. Guillemi, Rolando Barrios, Julio SG Montaner, and Viviane D. Lima. The potential impact of initiating antiretroviral therapy with integrase inhibitors on HIV transmission risk in British Columbia, Canada. *EClinicalMedicine* (2019) *Jul. 2019*
- ❖ David, Jummy Funke. Epidemic models with heterogeneous mixing and indirect transmission. *Journal of biological dynamics* 12, no. 1 (2018):375-399 *May 2018*

Theses

- ❖ The study of epidemic and endemic diseases using mathematical models (Ph.D.) *Feb. 2020*
- ❖ Mathematical modeling of the co-infection of HIV/AIDS and Tuberculosis (MSc.) *Aug. 2015*
- ❖ A model for analysis of drug abuse and HIV infection (MSc.) *Jun. 2012*
- ❖ Mathematical modelling of HIV/AIDS (BTech.) *Dec. 2011*

Languages

- ❖ *ENGLISH*: Fluent
- ❖ *YORUBA*: Native

Professional Affiliations

- ❖ *American Mathematical Society (AMS)*
- ❖ *Association for Women in Mathematics (AWM)*
- ❖ *Institute of Applied Mathematics (IAM)*