Hammed Olawale Fatoyinbo

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Education

- **Massey University, Manawatū, New Zealand** — March 2021
  Ph.D. *Mathematics*
- **African Institute for Mathematical Sciences, Ghana** — June 2014
  M.Sc. *Mathematical Sciences*
- **Federal University of Technology, Akure, Nigeria** — November 2012
  B.Tech. *Industrial Mathematics*
- **The Federal Polytechnic,Ede, Nigeria** — January 2008
  Diploma *Statistics*

Employment

- **Postdoctoral Fellow** — June 2021 – present
  School of Mathematical and Computational Sciences, Massey University
- **Academic Assistant** — August 2019 – January 2021
  School of Fundamental Sciences, Massey University
- **Graduate Assistant in Mathematics** — January 2017 – January 2020
  School of Fundamental Sciences, Massey University
- **Instructor: Mathematics and Physics** — December 2015 – November 2016
  Al-Hikmat Science College, Nigeria
- **Industrial Training** — April 2011 – October, 2011
  Ministry of Education, Lagos State Secretariat, Nigeria
- **Instructor** — September 2008 – February 2010
  D Professional Academia, Lagos, Nigeria

Awards, Grants & Honours

- **SIAM Travel Award** — April 2021 and July 2021
  SIAM DS21 and AN21
  - Awarded SIAM student travel awards to attend the SIAM conference on Applications of Dynamical Systems and present a contributed talk at the SIAM Annual Meeting.
- **Travel Grant** — February 2020
  School of Fundamental Sciences, Massey University
  - Awarded SFS postgraduate student travel grant to attend and present a contributed talk at the ANZIAM Conference, Hunter Valley, Australia.
- **ANZIAM Poster Prize** — December 2019
  2019 NZMS Colloquium

– My research poster was awarded the second prize.

- **PhD Tuition Scholarship** January 2017 – December 2020
  School of Fundamental Sciences, Massey University
- **MSc Scholarship** August 2013 – June 2014
  African Institute of Mathematical Sciences, Ghana
- **Best Graduating Student** November 2012
  Department of Mathematical Sciences, Federal University of Technology, Akure
- **Silver and Bronze Medals** June 2011 and June 2012
  National Mathematics Competition for University Students (NAMCUS)
  – NAMCUS is a national mathematics organised annually by the National Mathematical Centre for university students. I represented my university in the 2011 and 2012 editions, I won bronze and silver medals, respectively.
- **Branding FUTA Award** November 2011 and November 2012
  Federal University of Technology, Akure
  – Given to students and staffs in recognition of their academic excellence and research. The school management recognised my success at the national mathematics competition in the year 2011 and 2012.
- **Best Graduating Student** January 2008
  Department of Mathematics and Statistics, Federal Polytechnic, Ede
- **Polytechnic Scholar Award** September 2006
  Federal Polytechnic, Ede
  – Given to students in recognition of their academic excellence.

Research Publications

1. **H.O. Fatoyinbo**, S.S. Muni & A. Abidemi *Influence of Sodium Inward Current on Dynamical Behaviour of Modified Morris-Lecar Model.* Eur. Phys. J. B 95, 4 (2022)(link)(cover)
2. A. Abidemi, **H.O Fatoyinbo**, *Mathematical Analysis of Optimal Cost-effective Control of COVID-19: A Case Study*, 2021 International Conference on Decision Aid Sciences and Application (DASA), Sakheer, Bahrain, 2021, pp. 95-102; (link)
3. A. Abidemi, **H.O. Fatoyinbo**, & J.K.K. Asamoah, *Analysis of Dengue Fever Transmission Dynamics with Multiple Controls: A Mathematical Approach*, 2020 International Conference on Decision Aid Sciences and Application (DASA), Sakheer, Bahrain, 2020, pp. 971-978; (link)
4. **H.O. Fatoyinbo**, R.G. Brown, D.J.W Simpson, & B. van Brunt, *Numerical Bifurcation Analysis of Pacemaker Dynamics in a Model of Smooth Muscle Cells.* Bull. Math. Biol., **82**, 95, (2020); (link)
5. **H.O. Fatoyinbo**, R.G. Brown, D.J.W Simpson, & B. van Brunt, *Pattern Formation in a Spatially-Extended Model of Pacemaker Dynamics in Smooth Muscle Cells.* (Submitted); (arxiv)
6. **H.O. Fatoyinbo**, S.S. Muni, I. Ghosh, I.O. Sarumi, & A. Abidemi, *Numerical Bifurcation Analysis of Improved Denatured Morris-Lecar Neuron Model.* (To appear); (arxiv)
7. A. Abidemi, **H.O. Fatoyinbo**, J.K.K. Asamoah, & S.S. Muni, *Evaluation of the Efficacy of Wolbachia Intervention on Dengue Burden in a Population: A Mathematical Insight.* (To appear)
8. S. S. Muni, **H.O. Fatoyinbo**, & I. Ghosh, *Dynamical effects of electromagnetic flux on Chialvo neuron map: nodal and network behaviors* (Submitted); (arxiv)

Book of Abstract

1. **H.O. Fatoyinbo**, *Pattern Formation in Electrically Coupled Pacemaker Cells*, Aust. Math. Soc., (2022); (link)
2. **H.O. Fatoyinbo**, R.G. Brown, D.J.W Simpson, & B. van Brunt, *Effects of Conductance of Ion Channels on Spontaneous Electrical Activity in Smooth Muscles.* 13th Conference on Dynamical Systems Applied to Biology and Natural Sciences, (2022); (link)

Other Publications

1. **H.O. Fatoyinbo**, *Pattern Formation in Electrically Coupled Pacemaker Cells.* PhD Thesis, Massey University, Manawatū, New Zealand, 2021. (link)
2. **H.O. Fatoyinbo**, *Solitons.* Master's Thesis, African Institute of Mathematical Sciences, Ghana, 2014. (link)

Teaching Experience

- Teaching Assistant (Massey University)
  - Linear Algebra, 160.102 — Semester 1, 2022
  - Calculus, 160.101 — Semester 2, 2021
  - Introductory Mathematics for Science, 160.104 — Semester 2, 2020
  - Agri-Statistics, 161.140 — Semester 1, 2020
  - Foundation Mathematics 1 — Semester 1, 2019
  - Calculus, 160.101 — Semester 2, 2018
- Instructor (Al-Hikmat Science College)
  - Mathematics and Physics (Year 9–12) — Term 1&2, 2016
  - Mathematics and Computer Lab (Year 6–8) — Term 1&2, 2016
- Instructor (D'Professional Academia)
  - Mathematics and Physics (Year 9–12)

Selected Contributed Talks

- **ANZIAM Conference** — February 2022
  Virtual
  - Border-collision bifurcations in non-invertible, two-dimensional, piecewise-smooth maps.
- **DSABNS2022** — February 2022
  Virtual

  - Effects of ion channels conductance on spontaneous electrical activity in smooth muscles.

- **SIAM AN21** July 2021
  Virtual
  - Formation and Propagation of Excitation Waves in a Model of Electrically Coupled Pacemaker Cells.

- **SMB Annual Meeting** June 2021
  Virtual
  - Stability of Travelling Waves in Electrically Coupled Smooth Muscle Cell. (abstract)

- **ANZIAM** February 2021
  Virtual
  - Stability of Travelling Waves in a Model of Pacemaker Cells.

- **UNCG Regional Mathematics and Statistics Conference** November 2020
  Virtual
  - Influence of sodium inward current on dynamical behaviour of modified Morris–Lecar model. (abstract)

- **eSMB** August 2020
  Virtual
  - Spatiotemporal Dynamics in Spontaneous Excitable Cells. (abstract)

- **ANZIAM** February 2020
  Hunter Valley, NSW, Australia
  - Spatiotemporal Pattern Formation in a Model of Electrically Coupled Smooth Muscle Cells.

- **NZMS** December 2019
  Massey University, Palmerston North, New Zealand
  - Spatiotemporal Pattern Formation in a Model of Electrically Coupled Smooth Muscle Cells.

- **3MT Competition** July 2019
  Massey University, Palmerston North, New Zealand
  - Is there CHAOS in the brain?

- **NZMS** December 2018
  University of Otago, Dunedin, New Zealand
  - Emergence of Spatiotemporal Patterns in Pacemaker Coupled Excitable Cells.

- **NZMASP** November 2018
  Waikanae, New Zealand
  - Pattern Formation in Pacemaker Dynamics of Coupled Excitable Cells.

- **SFS Postgraduate Seminar** October 2017
  Massey University, Palmerston North, New Zealand
  - Pattern Formation in a Reaction-Diffusion Systems.

- **Student Seminar** November 2013
  African Institute of Mathematical Sciences, Ghana
  - Solitons

Poster Presentations

- **Dynamics Days Europe (2020)**, *Spatiotemporal Chaos: Complex Dynamics in a Model of Coupled Smooth Muscle Cells.*; (poster)
- **Mathematical Models in Biology: from Information Theory to Thermodynamics (2020)**, *Pattern Formation in Gap-junction Coupled Smooth Muscle Cells.* (poster)
- **NZMS Colloquium (2019)**, *Spatiotemporal Pattern Formation in a Model of Electrically Coupled Smooth Muscle Cells.* (poster)

Academic Activities

- Refereed research articles for Nonlinear Dynamics and Biophysical Reviews and Letters
- Co-organiser LaTeXworkshop for SFS postgraduate students, Massey University, October 2020
- Jugde for SIMIODE SCUDEM Competition, 2020 and 2021
- Marker and Reviewer for the Massey University Mathematics and Statistics (M3S) Quiz for Year 12 students, 2018 and 2019
- Co-organiser New Zealand Mathematics and Statistics Postgraduate Conference held at Waikanae, November 2018
- Member of NZMS, ANZIAM, SIAM & SMB
- Student Volunteer, Professional & Continuing Education (PaCE), Massey University, March 2017
- School Outreach, Biriwa Village, Ghana

Other Services

- **Community and Volunteer Services**
  - NZ Rural Games, Kelly Sport Palmerston North, 2018 and 2019
  - NZ Racketlon Championship held in Palmerston North, 2018
  - National Secondary School Volleyball Championships held in Palmerston North, 2017
  - Te Apiti Whanau Challenge, Sport Manawatu, 2017
  - Member, Drug Free Club, National Youth Service Corps Kogi State, 2016
- **Leadership**
  - President, Massey Muslim Society, Massey University, 2018
  - President, Muslim Corpers Association of Nigeria, Kogi State, Nigeria, 2016
  - Financial Secretary, Mathematics Students Association, FUTAkure, 2011
  - Chief Clerk, Mathematics and Statistics Students Association, FedPolyEde, 2006

Computer Language Capabilities

- Matlab, Python, LaTeX, XppAut, AUTO, MATCONT(m), Maple

Referees

Dr. David J. W. Simpson
School of Mathematical and Computational Sciences
Massey University, New Zealand
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Dr. Richard G. Brown
School of Mathematical and Computational Sciences
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Assoc. Prof. Bruce van Brunt
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