

Education

2018–Present **PhD. Quantitative Life Sciences**, *McGill University*, Canada.

Title Privacy-preserving analysis of biomedical data

Advisors Dr Paramita Saha-Chaudhuri, Prof Yi Yang, and Dr Ana Velly

2016–2018 **MSc. Biostatistics**, *McGill University*, Canada.

Title Virtual Pooling as a Privacy-preserving Analysis Tool

Supervisors Dr Paramita Saha-Chaudhuri and Dr Alexandra M Schmidt

2015–2016 **MSc. Mathematics**, *African Institute for Mathematical Sciences, Stellenbosch University*, South Africa.

Title Reverse-engineering T-cell proliferation dynamics

Supervisor Dr Wilfred Ndifon

2011–2015 **BSc. Mathematics (Hons)**, *Kwame Nkrumah University of Science and Tech.*, Ghana.

Title Representation Theory of Finite Groups

Supervisor Dr Richard Kena Boadi

Work Experience

01/2019– **Statistician**, iMD Research Inc.

present ○ Statistical modelling of biomedical data

09/2017– **Research Assistant**, Jewish General Hospital.

01/2019 ○ Statistical Computing | data analysis | data privacy

Summer 2017 **Visiting Research Scholar**, South African Centre for Epidemiological Modelling and Analysis.

○ Developed web based applications for HIV incidence estimation (UNAIDS project)

2007–2008 **Medical Laboratory Technician**, Medical Research Council, The Gambia.

○ Genomic DNA isolation, PCR protocols (e.g. multiplex PCR.) and sequencing

Miscellaneous

01/2020– **Math 324**, McGill University.

Present Graduate student assistant

2013–2015 **Mathematics Tutor**, KNUST - GHANA.

International Students Association (ISA) Mathematics Tutor. KNUST

Awards and Scholarships

2018–2021 Mitacs Accelerate Fellowship (\$60,000)

2016–2018 MasterCard Foundation Scholarship, McGill University (\$100,000)

2016 The Martin Rees Scholarship, AIMS South Africa (Certificate for academic excellence)

2015–2016 African Institute for Mathematical Sciences (AIMS) Postgraduate Scholarship (\$10,000)

June, 2015 Best graduating student, Department of Mathematics, KNUST Ghana (Highest CWA, class size - 140)

Computer skills

Advanced R, Python, MatLab, L^AT_EX, Linux, and Office suites
Intermediate HTML, Visual Basics, SPSS, SAS

Selected articles

1. Saha-Chaudhuri P, Juwara L (2020). Survival Analysis under the Cox Proportional Hazards model with Pooled Covariates. *Statistics in Medicine*. [link]
2. Cressatti M, Galindez JL, Juwara L, ... Schipper HM (2020). Characterization and heme oxygenase-1 content of extracellular vesicles in human biofluids. *Journal of Neurochemistry*. [link]
3. Juwara L, ..., Saha-Chaudhuri P, Velly A (2020). Predicting neuropathic pain after breast cancer surgery using machine learning. *International Journal of Medical Informatics*. [link]
4. Cressatti M, Juwara L, Galindez JL, ... Schipper HM (2019). Salivary miR-153 and miR-223 levels as diagnostic biomarkers of idiopathic Parkinson disease. *Movement disorders*. [link]
5. Grebe E, McIntosh A.; Juwara L, ..., Welte A (2019). Incidence estimation tools (inctools). *UNAIDS tools*. [link]
6. Juwara L, Boateng J (2019). Assessing the effects of exposure to sulfuric acid aerosol on respiratory function in adults. Preprint arXiv: 1906.04296 [link]
7. Eaton J, Grebe E, Welte A, Juwara L, Ongarello S (2018). Prevalence and Incidence Calculator: Calculates HIV incidence from prevalence survey data that include biomarkers of recent infection. *UNAIDS tools* [link]

Peer reviewed abstracts

1. Galindez J, Juwara L, ..., Velly AM. Evaluation of salivary Heme Oxygenase-1 as a potential biomarker of Parkinson's disease and neurodegenerative conditions. *AD/PD 2021*.
2. Cressatti M, Song W, Juwara L, ..., Schipper HM. Beyond the brain: Peripheral microRNA expression and Parkinson's disease. *AD/PD 2021*.
3. Juwara L. Privacy-Preserving Outcome Prediction. *ENAR 2020*.
4. Saha-Chaudhuri P and Juwara L. Survival Analysis under the Cox Proportional Hazards Model with Pooled Covariates. *ENAR 2020*.
5. Juwara L and Saha-Chaudhuri P. Predictive modeling under data privacy restrictions. *SSC Conference, 2020. Travel Award*
6. Juwara L, Schmidt A and Saha-Chaudhuri P. Virtual Pooling as a Privacy-preserving Analysis Tool to Estimate Covariate Hazard Ratio (HR) of Cox Proportional Hazard Model. *Statistical Society of Canada Annual Meeting, 2018*.
7. Juwara L and Saha-Chaudhuri P. Microaggregation as a Privacy-Preserving Analytical Tool for Analysis of Confidential Distributed Data. *International Society of Pharmacoepidemiology mid-year meeting, 2018. Travel award*
8. Juwara L, Schmidt A, and Saha-Chaudhuri P. Virtual Pooling as a Privacy-preserving Analysis Tool to Estimate Covariate Hazard Ratio (HR) of Cox Proportional Hazard Model. *14th Annual Student Research Day of the Department of Epidemiology, Biostatistics and Occupational Health, 2018. Best poster award*

Oral & Poster Presentations

03/2020 Poster Presentation on Privacy-Preserving Outcome Prediction at ENAR 2020 Spring Meeting [link]
09/2019 Poster Presentation at QLS annual research meeting in Montreal
06/2018 Poster Presentation at the Statistical Society of Canada annual meeting in Montreal
03/2018 Poster Presentation at the annual EBOSS Research Day [link]
01/2018 Poster Presentation at the ISPE mid-year meeting in Toronto
10/2017 Oral Presentation at the Biostatistics seminar series, McGill. [link]

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William Dawson Scholar and Professor of Biostatistics

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Dr. Wilfred Ndifon

AIMS Network Research Director & Professor of Theoretical Biology.

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Higher Specialist Clinical Geneticist.

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