

Maaya Leonard Wafula

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PROFESSIONAL SUMMARY

A statistician interested in contributing to solutions to health-related problems across the world. History of continuous knowledge seeking to advance the theoretical knowledge and practical application of statistics in medical research and pharmaceutical sectors.

MOTIVATION FOR HTA STATISTICAL PROGRAMMER POSITION

MSD is a company whose work I admire a lot and that resonates with my objective of giving hope to patient futures. I am passionate about using my programming skills while at MSD to help advance the company's research and development needs.

WORK EXPERIENCE

Statistician

July 2023 -

ORSTAT, KU Leuven, Belgium

- Wrote R programs for individualized data processing, statistical analyses and generation of feedbacks for students taking online courses.
- Provided statistical support to quantitative and non-quantitative clients
- Supported teaching of courses online by preparing material, coordinating and monitoring their availability
- Conducted research in support of requests from ORSTAT clients
- Participated in seminars, workshops and doctoral defenses for discrete choice models
- Part of the organizing team for the workshop on discrete choice models

Statistician

June 2021 - May 2023

Janssen Pharmaceutica, Beerse, Belgium

- Wrote projects-specific programs in SAS, JMP, R and working knowledge for CDISC
- Performed simulation studies and sample size calculation
- Performed statistical analyses for process, method & equipment development
- Performed Bayesian analyses for process performance qualification
- Supported the compounding & dilution techniques for vaccines
- Provided statistical and programming expertise in equivalence studies
- Reviewed statistical methods
 - Design of experiments (Extended Youden Design)
 - Bayesian & double-bootstrap approaches for tolerance intervals
 - Probability-based equivalence tests
 - Bayesian & bootstrap approaches for the F2 statistic for analyzing dissolution profile similarity
- Conducted analyses to determine the shelf-life and stability of vaccines
- Performed Bayesian-based analyses for estimation and PoS determination
- Worked with and coordinated the work of CROs
- Contributed to the development of an internal R library for statistical analysis
- Wrote (and peer-reviewed) statistical reports (from colleagues)

Statistician

January 2013 - October 2015

Kenya Medical Research Institute - Wellcome Trust Program, Kilifi, Kenya

- Wrote STATA, SQL, R scripts for data processing, statistical analyses & visualization

- Contributed to scientific publications through statistical analyses
- Performed clinical, lab & epidemiological data management for five studies
- Wrote analysis plans (SAPs) & reviewed Standard Operating Procedures (SOPs)

EDUCATION

PhD in Business Economics: Operations Research and Statistics May 2021

Katholieke Universiteit Leuven, Belgium

Topic: Modeling the Impact of Labels, the Dynamics in Attribute Non-Attendance and the Dropout in Discrete Choice Experiments

Master of Science in Statistics

August 2017

Universiteit Hasselt, Belgium

Distinction

Bachelor of Science in Statistics

August 2012

University of Nairobi, Kenya

First Class Honors

SEMINARS, WORKSHOPS AND CONFERENCE PRESENTATIONS

Scientific Research Network on Choice modelling, KU Leuven

September 2023

Non Clinical Statistics Conference, Louvain-la-Neuve, Belgium

October 2022

Simulating the drug substance to drug product conversion process in vaccine manufacturing

Second Doctoral Seminar

September 2020

Joint Analysis of Preferences and Dropout Data in Online Choice Experiments

XIV. International Research Conference, Vancouver, Canada

August 2020

E-Consumers' Attribute Non-Attendance Switching Behavior: Effect of Providing Information on Attributes

First Doctoral Seminar

October 2019

Consumers' Attribute non-attendance switching behavior in Discrete Choice Experiments

Royal Statistical Society of Belgium

October 2019

E-consumers' dynamic attribute non-attendance behavior: The effect of providing extra information on attributes

WOG Workshop on Choice Modeling, Brussels

June 2019

E-consumers' dynamic attribute non-attendance behavior: The effect of providing extra information on attributes

12th Belgian Environmental Economics Day 2019, University of Antwerp

February 2019

Effect of environmental and altruistic attitudes on willingness-to-pay for organic and fair trade coffee in Flanders

SHORT COURSES

Pharmalex

June 2021

Assay validation in JMP

KU Leuven
Optimal and Orthogonal Design of Experiments

June 2018

University of Leeds
Choice Modelling and Stated Preference Design summer course

June 2018

University of Leeds
Choice Modelling and Stated Preference Design winter course

November 2017

KEMRI-Wellcome Trust Research Program
Good Clinical Practises - GCP2013

November 2013

COMPUTER SKILLS

- **Statistics**
 - R, Python, SAS, JMP, CDISC, STATA
 - WINBUGS/JAGS/STAN
 - HPC
- **Data Management**
 - SQL
- **Text processing & automation**
 - FileMaker 11
 - MS Word, MS PowerPoint
 - LATEX, R Sweave
 - R Markdown & R Shiny
- **Version control**
 - GIT

SKILLS FOR THE HTA STATISTICAL PROGRAMMER POSITION

- Programming experience in multiple statistical and data management softwares: SAS, JMP, R, SQL, Stan, CDISC SDTM and ADaM
- Experience of contributing to the development of internal R libraries
- Experience in effective visualization of data to non-statisticians
- Experience as a statistician in a pharmaceutical and medical setting
- Experience in Design of Experiments for process, method & equipment development
- Experience working in highly regulated environments: GxP, FDA, EMEA
- Experience working in ICH (for vaccines), ASTM (for small molecules) and SOP frameworks
- Experience with Bayesian statistical methods, mixed models, multivariate methods
- Knowledge of variance component & multivariate analyses for process control
- Long term passion to practice statistics within the pharmaceutical industry
- Liaising with other statistical programmers and statisticians on studies
- Understanding of Quality by Design thinking and Design Space methodology
- Generating web-based reports using the R-Shiny application
- Experience of working in multidisciplinary team settings
- Experience in designing and managing studies
- Experience working with and coordinating the work of CROs
- Excellent communication skills to quantitative & non-quantitative colleagues
- Strong academic performance and scientific publishing
- Willingness and ability to learn and apply newer statistical methodology

LANGUAGES

- English: Fluent
- French: Beginner
- Dutch: Beginner
- Swahili: Mother tongue

RESEARCH INTERESTS

- Biostatistics
- Health Technology Assessment (HTA)
- Discrete choice modelling for Health economics and HTA

PUBLICATIONS IN INTERNATIONAL JOURNALS

1. Maaya, Leonard, Meulders, Michel, and Vandebroek, Martina. Joint analysis of preferences and drop out data in discrete choice experiments. *Journal of Choice Modelling* 41.C (2021): 100308.
2. Maaya, Leonard, Meulders, Michel, and Vandebroek, Martina. Online Consumers' Attribute Non-Attendance Behavior: Effects of Information Provision. *International Journal of Electronic Commerce* 24.3 (2020): 338-65.
3. Kagia, Ngure, Kosgei, Patrick, Ooko, Michael, Wafula, Leonard, Mturi, Neema, Anampiu, Kirimi, Mwarumba, Salim, Njuguna, Patricia, Seale, Anna C, Berkley, James A, Bottomley, Christian, Scott, J Anthony G, and Morpeth, Susan C. Carriage and Acquisition of Extended-spectrum β -Lactamase-producing Enterobacterales Among Neonates Admitted to Hospital in Kilifi, Kenya. *Clinical Infectious Diseases* 69.5 (2019): 751-59.
4. Maaya, Leonard, Meulders, Michel, Surmont, Nick, and Vandebroek, Martina. Effect of Environmental and Altruistic Attitudes on Willingness-to-Pay for Organic and Fair Trade Coffee in Flanders. *Sustainability (Basel, Switzerland)* 10.12 (2018): 4496.

SCHOLARSHIPS

VLIR-UOS for the MSc. in Statistics studies (2015-2017)

PROFESSIONAL MEMBERSHIP

- Royal Statistical Society (RSS)
- Belgian Royal Statistics Society
- Epidemiology and Biostatistics Society of Kenya

REFEREES

Dr. Hans Coppenolle
Director Manufacturing Statistics
Janssen Pharmaceutical Companies
Beerse (Belgium)

Prof. Dr. Martina Vandebroek
Senior lecturer and PhD supervisor
Katholieke Universiteit
Leuven (Belgium)