

# Maaya Leonard Wafula

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## PROFESSIONAL SUMMARY

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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 APPLYING FOR STATISTICIAN

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My skills as a Biostatistician (MSc.) and as a statistician (PhD) is motivated by my desire to work in the health and pharmaceutical areas to help reduce the disease burden around the world. Joining the Veramed team not only gives me a rare opportunity to work with world leading researchers and statisticians that I admire. It also gives me an opportunity to work with a company which shares my long term objective of playing a part in providing solutions to the many health problems prevalent globally.

## WORK EXPERIENCE

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### Statistician

July 2023 - November 2023

*ORSTAT, KU Leuven, Belgium*

- Provided statistical support to quantitative and non-quantitative clients
- Supported teaching of courses online by setting up 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
- Coded R programs for individualized data processing, statistical analyses and generation of feedbacks for students taking online courses

### Statistician

June 2021 - May 2023

*Janssen Pharmaceutica, Beerse, Belgium*

- 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
- Wrote (and peer-reviewed) statistical reports (from colleagues)

**Statistician**

January 2013 - October 2015

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

- Conducted statistical analyses for epidemiological studies in the department
- Contributed to scientific publications through statistical analyses
- Performed clinical, lab & epidemiological data management for five studies
- Coded R and STATA programs for data management, analyses and monitoring of epidemiological studies

**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

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<b>Pharmalex</b> Assay validation in JMP	June 2021
<b>KU Leuven</b> Optimal and Orthogonal Design of Experiments	June 2018
<b>University of Leeds</b> Choice Modelling and Stated Preference Design summer course	June 2018
<b>University of Leeds</b> Choice Modelling and Stated Preference Design winter course	November 2017
<b>KEMRI-Wellcome Trust Research Program</b> Good Clinical Practises - GCP2013	November 2013

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**COMPUTER SKILLS**

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| <ul style="list-style-type: none"><li>• <b>Statistics</b><ul style="list-style-type: none"><li>○ R, Python, SAS, JMP, STATA</li><li>○ WINBUGS/JAGS/STAN</li><li>○ HPC</li></ul></li><li>• <b>Data Management</b><ul style="list-style-type: none"><li>○ SQL</li></ul></li></ul> | <ul style="list-style-type: none"><li>○ FileMaker 11</li><li>• <b>Text processing &amp; automation</b><ul style="list-style-type: none"><li>○ MS Word, MS PowerPoint</li><li>○ LATEX, R Sweave</li><li>○ R Markdown &amp; R Shiny</li></ul></li><li>• <b>Version control</b><ul style="list-style-type: none"><li>○ GIT</li></ul></li></ul> |
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## SKILLS FOR THE STATISTICIAN POSITION

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- Experience as a statistician in a pharmaceutical setting
- Experience with Bayesian statistical methods
- Practical understanding of statistical modelling (including time-to-event models & meta-analysis) and application to real world problems
- Theoretical understanding and experience in discrete choice experiments which can be used in health economics and health technology assessment (HTA)
- Proficiency in statistical software (R, OpenBUGS, JAGS, STAN, Git)
- Generating web-based reports using the R-Shiny application
- Experience in Design of Experiments for process, method & equipment development
- Liaising with programmers and other statisticians on clinical & non-clinical studies
- Experience in effective visualization of data to non-statisticians
- Understanding of Quality by Design thinking and Design Space methodology
- Experience working in ICH (for vaccines) & ASTM (for small molecules) framework
- Experience of working in multidisciplinary team settings
- Experience in designing and managing studies
- Experience on Good Clinical Practices from a top medical research organization
- Experience working with and coordinating the work of CROs
- Excellent communication skills to quantitative & non-quantitative colleagues
- Strong academic performance and scientific publishing
- Knowledge of variance component & multivariate analyses for machine learning
- Willingness and ability to learn and apply newer statistical methodology

## LANGUAGES

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

## RESEARCH INTERESTS

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- Biostatistics
- Clinical trials
- Health Technology Assessment
- Bayesian statistics
- Discrete choice modelling in Health economics

## PUBLICATIONS IN INTERNATIONAL JOURNALS

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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  $\beta$ -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

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

## PROFESSIONAL MEMBERSHIP

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

## REFEREES

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

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