Maaya, Leonard
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1st September 2023

Roche
Penzberg, Bavaria, Germany

Dear Hiring Manager,

Ref: Application for the position Biostatistician in Personalized Healthcare

I am writing to express my interest in Biostatistician in Personalized healthcare position available in your highly revered company. I have an MSc. in Biostatistics (UHasselt, 2017) and a PhD in Statistics (KU Leuven, 2021). I have worked as a biostatistician in the medical and pharmaceutical industries where I have accumulated years of applied statistical experience. I am interested in joining your team to have a first-hand experience in the application of statistics in personalized healthcare where I have limited experience.

My time at the KEMRI-Wellcome Trust Research Program (Kenya) exposed me to medical data where I worked on epidemiological, clinical and laboratory data on patients admitted to a hospital. I was involved in the data management and analysis of these data on uptake of vaccines for multiple diseases. While this experience was fascinating, it was clear to me that I needed to expand my knowledge in the application of statistics in healthcare. This led to me to exploring three opportunities:

1. Msc Biostatistics, UHasselt (2017, distinction)

At UHasselt, I delved deeper into advanced statistical methods which I believe will be of relevance for this position including but not limited to classification, survival models, introduction to clinical trials, longitudinal and missing data models. I also did a thesis in collaboration with Janssen pharmaceuticals on developing statistical approaches useful for selection of compounds in vaccines development.

2. PhD Statistics, KU Leuven (2021)

During the PhD, I worked on statistical models for discrete choice experiments which are especially useful in health economics where patient preferences regarding which treatment they would prefer are investigated. I also learned how to manage projects with timelines, work independently and as part of a team and effectively communicate to audiences with different backgrounds.

3. PostDoc in Statistics, Janssen Pharma

I spent two years at Janssen as a postdoc in non-clinical statistics where I was involved in projects aimed at ensuring quality of an approved vaccine is maintained throughout its lifetime (shelf life) and that the manufacturing process can consistently produce a product of good quality. In this role, I extensively used Bayesian methods and designed and analyzed experiments.

I am applying for this position because although I have interacted with clinical and patient preferences data before and have become more comfortable in statistics, I still have a dearth of knowledge in the application of statistics in personalized healthcare which is an area that your team has extensive expertise in. I intend to spend my career in pharmaceutical research because this is one area that I believe will have the highest contribution to patient survival and quality of life worldwide. Playing a part in increasing patients' survival and quality of life is my ultimate goal. As such, I would like to dedicate more time to this important component of health research. To the best of my knowledge, your team and the work you do in personalized healthcare is the most ideal combination to accomplish this desire.

Accompanying this letter is my CV which enumerates my strength as a statistician as well as other skills that are relevant for the role. My referees are available on request to provide reference letters. I would be delighted to be considered for an interview to learn more about a position and share my motivation for working with your team.

Sincerely,

Maaya, Leonard

Maaya Leonard Wafula

Leuven, Belgium | +32 485 128 211 | lwafulae@gmail.com

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 APPLYING FOR BIOSTATISTICIAN POSITION

Roche is a company that ticks every box I am looking for in my pursuit of playing a part in the betterment of patient futures. I am passionate about using my skills to improve people's lives globally, previously working in medical research before pursuing an MSc program in Biostatistics and later on a PhD in statistics. I would be delighted to use my skills from working and studies to give hope of a better future to patients worldwide while at Roche.

WORK EXPERIENCE

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

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

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 June 2018
Optimal and Orthogonal Design of Experiments

University of Leeds June 2018
Choice Modelling and Stated Preference Design summer course

University of Leeds November 2017
Choice Modelling and Stated Preference Design winter course

KEMRI-Wellcome Trust Research Program November 2013
Good Clinical Practises - GCP2013

COMPUTER SKILLS

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

SKILLS FOR THE BIOSTATISTICIAN POSITION

- Experience as a statistician in a pharmaceutical setting
- Practical understanding of statistical modelling used in health settings and application to real world problems
- Proficiency in statistical software (R, SAS, Stan, Git, JMP) and programming in R/SAS
- Experience in Design of Experiments for process, method & equipment development
- Liaising with statistical programmers and other statisticians on clinical studies
- Experience in effective visualization of data to non-statisticians
- Experience with classification, survival, longitudinal and Bayesian statistical methods
- Understanding of Quality by Design thinking and Design Space methodology
- Generating web-based reports using the R-Shiny application
- 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 (GCP) 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

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

RESEARCH INTERESTS

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

PUBLICATIONS IN INTERNATIONAL JOURNALS

1. <u>Maaya, Leonard</u>, 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. <u>Maaya, Leonard</u>, 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, <u>Wafula, Leonard</u>, 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. <u>Maaya, Leonard</u>, 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 Manufucturing Statistics
Janssen Pharmaceutical Companies
Beerse (Belgium)

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

KU Leuven

Wij, rector van de KU Leuven, verklaren, op advies van de bevoegde examencommissie, dat

Leonard Edgar Wafula Maaya

geboren te Bungoma (Kenia) op 3 maart 1988
de graad heeft behaald van
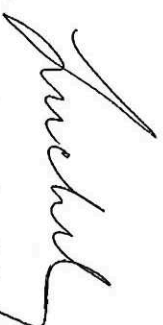
Doctor in de Toegepaste Economische Wetenschappen

Operations Research and Statistics

De KU Leuven reikt dit diploma uit op grond van haar onderwijsbevoegdheid in het studiegebied Economische en toegepaste economische wetenschappen.
Derhalve kennen wij dit diploma toe, conform de Codex Hoger Onderwijs, gecodificeerd op 11 oktober 2013.
De toegekende kwalificatie situeert zich op niveau 8 volgens de Vlaamse Kwalificatiestructuur (VKS), zoals vermeld in het decreet van 30 april 2009.
De houder van deze graad mag de titel voeren van doctor.

Leuven, 19 mei 2021

Professor Luc Sels
rector

VKS
VLAAMSE
KWALIFICATIE
STRUCTUUR

Maastricht University   **universiteit ▶▶hasselt**

The transnationale Universiteit Limburg is a foundation established by Universiteit Hasselt and Maastricht University, as recognised by Treaty between the Flemish Community of Belgium and the Kingdom of the Netherlands (signed 18.01.2001). *De transnationale Universiteit Limburg is een stichting opgericht door de Universiteit Hasselt en Maastricht University, zoals erkend bij Verdrag tussen de Vlaamse Gemeenschap van België en het Koninkrijk der Nederlanden (d.d.18.01.2001).*

The Rector of the transnationale Universiteit Limburg declares that
De Rector van de transnationale Universiteit Limburg verklaart dat

Leonard Edgar Maaya Wafula

born in Bungoma (Kenya) on the 3rd of March 1988
geboren te Bungoma (Kenia) op 3 maart 1988

has been awarded the academic degree of
de academische graad heeft behaald van

Master of Statistics

Master of Science [MSc]

specialisation Biostatistics
afstudeerrichting Biostatistics

with distinction
met onderscheiding

The programme of Master of Statistics includes 120 ECTS credits and is rated level 7 according the Flemish Qualifications Structure and the European Qualifications Framework for Lifelong Learning. The programme complies with the requirements of accreditation as specified in the Codex Higher Education.
De opleiding tot Master of Statistics omvat 120 studiepunten en heeft een niveau 7 volgens de Vlaamse Kwalificatiestructuur en het European Qualifications Framework for Lifelong Learning. De opleiding voldoet aan de accreditatievoorschriften zoals bepaald in de Codex Hoger Onderwijs.

Issued in accordance with the provisions of the Codex Higher Education in Hasselt on the 8th of September 2017,
Uitgereikt conform de bepalingen van de Codex Hoger Onderwijs te Hasselt op 8 september 2017,

Prof. dr. Luc DE SCHEPPER
Rector transnationale Universiteit Limburg

VKS
VLAAMSE
KWALIFICATIE
STRUCTUUR

The diploma and its supplement form an indivisible whole.
Diploma en diplomasupplement vormen een ondeelbaar geheel.

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