

# Curriculum Vitae of Nicole Bezuidenhout

## PERSONAL DETAILS

**Birth Date & Location:** 15 April 1987 in Cape Town

**Family Status:** Married

**Nationality:** South African

**Permanent Resident:** Munich, Germany

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**Contact number:** +4915120090910

**Physical address:** Winzererstr. 73, 80797 Munich

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## ACADEMIC HISTORY

### Tertiary Education:

(Jan. 2009 – Dec. 2010) **Master of Science (MScMedSc) Medical Physiology, University of Stellenbosch.**

**Study Title:** A study of the early changes in hearts from diet-induced obese rats that may lead to cardiac dysfunction.

(Jan. 2008 – Dec. 2008) **Bachelor of Science (BScMedScHons) Medical Physiology, University of Stellenbosch.**

**Study Title:** Early effects on mitochondrial function in a rat model of diet induced obesity.

(Jan. 2005 - Dec. 2007) **Bachelor of Science - Functional Human Life Sciences, University of Stellenbosch.**

### Secondary Education/High School:

(Jan. 200 – Dec. 2005) -**Helderberg High School, Somerset West, Cape Town, South Africa**

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## RELEVANT WORK EXPERIENCE

(Jan. 2015 – June 2017) **Department of Human Biology, Division of Exercise Science and Sports Medicine (University of Cape Town)**

**Position:** PhD Candidate (2 years completed)

### **Duties/Responsibilities:**

- Conceptualize and execute research project
- Protocol development, data collection and analysis, publication of results, translation of findings
- Learn new laboratory techniques
- Design and optimize research techniques
- **Project: Investigating the role of SIRT3 in fructose-induced mitochondrial dysfunction in rat skeletal muscle cells.**

**(Mar. 2016 – Dec. 2016) Department of Human Biology, University of Cape Town (UCT)**

**Position:** Teaching facilitator

**Duties/Responsibilities:**

- Assisting students to meet learning outcomes (Module: Anatomy and Physiology, 1<sup>st</sup> Year Occupational Therapy).

**(Mar. 2016 – Aug. 2016) UCT Clinical Research Unit, Prof. Mayosi Research Group, Dept. of Medicine**

**Position:** Research assistant

**Duties/Responsibilities:**

- Data capturing
- Analysis of data
- Maintenance of trial master files
- Assisted with application of ethical approval
- Monitoring of trial files

**(Oct. 2015 – Dec. 2015) OROBOROS Instruments, Innsbruck, Austria**

**Position:** Intern

**Duties/Responsibilities:**

- Conceptualize and execute research project
- Protocol development, data collection and analysis, presentation and publication of data
- Learn new laboratory techniques
- **Project: The analysis and comparison of 1) mitochondrial function using a cooling plate or ice during mechanical separation of mouse skeletal muscle fibers, and 2) mitochondrial oxygen dependence with two respiration media, Buffer ZCr + Blebbistatin and MiR06Cr, in permeabilized mouse skeletal muscle fibers**

**(Feb. 2015 – May 2015) Division of ESSM, University of Cape Town**

**Position:** Research assistant – Vitality Age project

**Duties/Responsibilities:**

- Sourcing research papers for physical activity from three databases (Pubmed, Scopus and ISI-Web of Knowledge) using search strategies provided.
- Review of the literature and data extraction from selected research papers
- Data entry
- Quality assessment of papers included in the reviews
- Assisting with conducting meta-analysis using OpenMetaAnalyst software

**(Jun. 2013 – Oct. 2013) Dynamic Biosensors GmbH**

**Position:** Scientific Marketing and Sales Specialist

**Duties/Responsibilities:**

- Development of Customer Relationship Management (CRM) system
- Market Research of Institutes and Universities
- Organisation/Planning of Exhibitions and Fairs
- Development of Marketing Materials
- Customer acquisition, Customer liaison and support
- Creating budgets and sales reports

**(Feb. 2011 – Oct. 2012) LASECSA**

**Position:** Sales Division – Research and Tertiary Institutions External Sales

**Duties/Responsibilities:**

- Development and progression of sales
- Market-Implementation of new products
- Market research of Institutes and Universities
- Customer acquisition, Customer liaison and support
- Demonstration of lab equipment and various other products
- Follow-up and ad-hoc reports
- Organisation of Exhibitions and Fairs

**(Jan. 2008 – Dec. 2010) University of Stellenbosch Faculty of Health Sciences**

**Position:** Working student (department of medical physiology)

**Duties/Responsibilities:**

- Supporting the project leaders
- Learning and implementation of new techniques
- Providing training of new techniques (Preparation and analysis of mitochondrial function)
- Presentation of my research at various conferences
- Presentation of new research in the field of cardiovascular disease, molecular biology, signalling pathways etc.

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**METHODOLOGICAL SKILLS**

- ELISA
- Protein quantification methods: Bradford, Lowry, Markwell
- Western blot analysis
- Agarose gel electrophoresis
- SDS-PAGE
- Qualitative and quantitative PCR
- Enzymatic Assays
- Cell culture (Skeletal muscle – rat and mouse)
- High resolution respirometry (O2K OROBOROS), other (Hansatech)
- Isolation of cardiac mitochondria from fresh & frozen tissue
- Mechanical muscle fiber permeabilization
- Immunoprecipitation assays
- Sterile microbiological techniques
- Microscopy and live cell imaging

**OTHER SKILLS**

- Computer skills: Microsoft Office (Word, PowerPoint, Excel)
  - Statistical analysis: SPSS, Statistica, Graphpad Prism
  - Languages: English (fluent), Afrikaans (fluent), German (good command)
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### WORKSHOPS/TRAINING ATTENDED

- **Flow cytometry workshop (2008)**- Stellenbosch University, Cape Town.
  - **99th International O2-Workshop on High-resolution respirometry and O2k-fluorometry (March 2015)** – Cape Town.
  - **106th International O2-Workshop on High-resolution respirometry and O2k-fluorometry (October 2015)** – Schroeken, Austria.
  - **Introductory course on laboratory animal science: The Ethics and Care of Laboratory Animals in Research (April 2015)** – Cape Town
  - **Write Science 2016 (February 2016)** Scientific Writing course - University of Cape Town.
  - **Good clinical practice/ICH guidelines** – conducted by African research training (March/April 2016).
  - **Training in Open Clinica software (April 2016)** Luwazi Mhlanti UCT clinical research centre, Prof. Bongani Mayosi research group.
  - **Clinical monitoring training (August 2016)** Sr. Veronica Francis (Project manager and study coordinator, UCT clinical research centre, Prof. Bongani Mayosi research group).
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### PUBLICATIONS

- Nicole Bezuidenhout. ***A study of the early changes in hearts from diet-induced obese rats that may lead to cardiac dysfunction.*** Master's Thesis. SUNScholar Research Repository (2011)
  - Barbara Huisamen, Daneel Dietrich, Nicole Bezuidenhout, John Lopes, Brian Flepisi, Dee Blackhurst (2012). ***'Early cardiovascular changes occurring in diet-induced, obese insulin-resistant rats'.*** **Molecular and Cellular Biochemistry**; 368(1-2): 37-45.
  - Edward Ojuka, Brittany Andrew, Nicole Bezuidenhout, Siddiqah George, Gerald Maarman, Hlengiwe P Madlala, Amy Mendham, Prisca Ofure Osiki (2016). ***"Measurement of beta-oxidation capacity of biological samples by respirometry: A review of principles and substrates".*** **American Journal of Physiology, Endocrinology and Metabolism.** Vol. 310 no. 9, E715-E723.
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### CONFERENCES ATTENDED

- **Physiology Society of Southern Africa (PSSA) Conference 2008** *Title of Oral Presentation: ' Early effects on mitochondrial function in a rat model of diet induced obesity'.* - Cape Town
- Stellenbosch University Annual Academic Day 2009 **Runner up** prize: Category - under 35 oral presentations. *Title of Oral Presentation: ' A study of the early changes in hearts from diet-induced obese rats that may lead to cardiac dysfunction'.*
- **Physiology Society of Southern Africa (PSSA) Conference 2009** *Title of oral presentation: ' A study of the early changes in hearts from diet-induced obese rats that may lead to cardiac dysfunction'.* - Cape Town
- **Medical Research Council (MRC) Research day 2009** *Title of oral presentation: ' A study of the early changes in hearts from diet-induced obese rats that may lead to cardiac dysfunction'.* - Cape Town
- **7th Mitochondrial physiology school.** Bezuidenhout N, Ojuka E. ***A study of the effects of fructose feeding & exercise on SIRT 3 regulation in skeletal muscle.*** Abstract MiPSchool Cape Town (2015)

- **1st MitoFit Science Training Camp.** Bezuidenhout N, Doerrier C, Droscher S, Ojuka E, Gnaiger E. *Comparison of oxygen dependence of respiration in permeabilized mouse skeletal muscle fibers in two respiration media, MiRO6Cr and Buffer Z containing Ctl, Cr and Blebbistatin.* Abstract MitoFit Science Camp, Kühtai Austria (2016) AND Bezuidenhout N, Doerrier C, Droscher S, Gnaiger E. *Analysis and comparison of mitochondrial function using cooling plate or ice during mechanical separation of mouse skeletal muscle fibers.* Abstract MitoFit Science Camp, Kühtai Austria (2016)
- **19th European Bioenergetics Conference (EBEC) (2016)** Nicole Bezuidenhout, Edward Ojuka. *Is fructose-induced mitochondrial dysfunction in L6 myotubes mediated by epigenetic changes in the Sirt3 promoter?* Biochimica et Biophysica Acta (BBA) - Bioenergetics, Volume 1857, Supplement, August 2016, Page e29. Abstract European Bioenergetics Conference, Riva del Garda Italy (2016)
- **Physiology Society of Southern Africa (PSSA) Conference (2016),** Cape Town
- **10<sup>th</sup> MiPSchool (Mitochondrial Physiology School) (2017),** Obergurgl, Austria

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#### **MEMBERSHIP/ACCREDITATION:**

- Member of Mitochondrial Physiology Society since 2015
- Member of the Golden Key Society since 2008
- PSSA member 2016-2017

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#### **REFEREES**

**Prof. Barbara Huisamen** (MSc. PhD. Stell. Extraordinary Professor) Supervisor  
 Medical Physiology Stellenbosch University  
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**Dr. Amy Mendham**  
 Department of Human Biology, Division of Exercise Science and Sports Medicine, UCT  
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**Dr. Carolina Doerrier** (Chief Scientific Officer, Mitochondrial Application Specialist, Oroboros Instruments)  
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**Sr. Veronica Francis** Project manager and coordinator (Prof. Mayosi Research Group)  
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