

CURRICULUM VITAE

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PROFILE:

I am a hardworking, self-motivated, innovative and responsible person with an outgoing personality. My communication skills are excellent and I enjoy meeting challenges and seeing them through, while remaining confident and good-humoured under pressure.

PERSONAL DETAILS:

Date of birth: 6 May 1988
Place of birth: Bulawayo
Languages: English, Ndebele, Shona, Zulu, Xhosa.
Marital status: Single
I.D. No: 08-2002094K-41
Passport number: EN 683211
Driver's License: Yes

EDUCATION:

University

2012-2013: Masters Degree in Biochemistry (upper second class), University of KwaZulu-Natal.
2011: BSc. Honours in Biochemistry, University of KwaZulu-Natal.
2008-2010: BSc Biochemistry (*cum laude*) University of Fort Hare.

Secondary

2005-2006: Bulawayo Adventist High School.
2001-2004: St. James Secondary School

WORK EXPERIENCE:

Period: February 2015 to present
Institution: National University of Science and Technology, Zimbabwe.
Position: Research Fellow.
Duties: Carrying out research in the Ecotoxicology field, assessing the effects of anthropogenic pollutants in aquatic & terrestrial environments using biochemical and molecular markers.

Period: September 2015 –November 2017
Institution: National University of Science and Technology, Zimbabwe.
Position: Part-time Lecturer.
Duties: Teaching biochemistry to first year medical school students.

Period: July 2012- November 2013
Institution: University of KwaZulu- Natal (Pietermaritzburg Campus)
Position: Teaching Assistant
Duties: Setting up practicals for 2nd year Biochemistry students.
Assisting students in their practicals and tutorials.
Collecting and recording marks for the 2nd year Biochemistry students for assessment.

Period: January – November 2011
Institution: University of KwaZulu- Natal (Pietermaritzburg Campus)
Position: Tutor
Duties: Assisting students in their practicals as well as tutorials.

Period: February - December 2010
Institution: University of Fort Hare
Position: Tutor
Duties: Assisting 2nd year Information Systems students during tutorials

LABORATORY SKILLS AND ABILITIES:

Molecular biology

- ❖ Conducting PCR – conventional PCR, colony PCR, qPCR.
- ❖ Restriction endonuclease digestion (DNA fragmentation).
- ❖ Plasmid isolation (miniprep).
- ❖ TA-cloning and sub-cloning into expression vectors (pGEX and pET systems).
- ❖ Plasmid transformation into *E.coli* expression hosts.
- ❖ Genomic DNA isolation.
- ❖ Primer design.
- ❖ Agarose gel electrophoresis.
- ❖ Comet assay.

Bioinformatics, accessing and use of data banks

- ❖ pDraw32 (free software package used for the analysis of sequences, ORFs, restriction enzymes etc.).
- ❖ National Centre for Biotechnology Information (NCBI).
- ❖ ExPASy Proteomics server.
- ❖ Basic local alignment tool (BLAST).

- ❖ ClustalX alignment (free software package which aligns protein and nucleotide sequences).

Enzyme assays, protein isolation, purification and identification

- ❖ Conducting esterase and antioxidant enzyme assays.
- ❖ Polyacrylamide Gel Electrophoresis (PAGE).
- ❖ Recombinant protein expression (bacteria and yeast expression systems).
- ❖ Antibody raising (chicken inoculations, antibody isolation and characterization).
- ❖ Chromatography (Nickel affinity, ion exchange and molecular exclusion).
- ❖ Enzyme linked immunosorbent assays (ELISA).
- ❖ Western blots (classical and semi dry blotting) with Enhanced Chemi-Luminescence (ECL).
- ❖ Three phase partitioning (TPP).
- ❖ Spectrophotometry.

Microscopy

- ❖ Light microscopy (microscope operation, sample preparation and analysis).
- ❖ Confocal/fluorescence (microscope operation, sample preparation and analysis).

Cell culture

- ❖ Human macrophages (isolated from fresh blood by double layer Percoll density gradient centrifugation).
- ❖ J774 murine macrophages (established cell line).
- ❖ C2C12 murine myoblast cells (established cell line).
- ❖ *Trypanosoma brucei brucei* 427 Lister strain trypanosomes.
- ❖ Bacterial culture (*Mycobacterium smegmatis*, *E. coli*) – on plates and in broth.

Snail breeding

- ❖ Breeding of aquatic snails: *Lymnaea natalensis* and *Helisoma duryi* spp.
- ❖ Breeding of terrestrial snails: *Achatina fulica* sp.

Communication

- ❖ Oral communication skills well developed due to presentations during undergraduate and postgraduate period as well as conferences.
- ❖ Writing skills well developed due to writing of reports, reviews, dissertation and journal articles.

Computing skills

- ❖ Excellent knowledge and experience in latest versions of Windows, MS Word, Excel, Endnote and Power Point.

CONFERENCES, & PUBLICATIONS:

- ❖ South African Society of Biochemistry and Molecular Biology (SASBMB), in conjunction with the Federation of African Societies of Biochemistry and Molecular Biology (FASBMB) Conference, Potchefstroom, South Africa (2018). Poster presentation. The effect of chronic exposure of mercury, on the glutathione dependent enzymes of *Lymnaea natalensis* freshwater snails.
- ❖ 5th CHINAFRICA Water Forum Conference, Victoria Falls, Zimbabwe (2017). Oral presentation. Assessment of glutathione peroxidase activity and lipid peroxidation status in *Lymnaea natalensis* freshwater snails, following chronic exposure to heavy metals.
- ❖ 25th South African Society of Biochemistry and Molecular Biology Congress, East London, South Africa (2016). Oral presentation. Recombinant Expression of Variable Surface Glycoproteins: Litat 1.3 and Litat 1.5 of *Trypanosoma brucei gambiense*.
- ❖ 25th South African Society of Biochemistry and Molecular Biology Congress, East London, South Africa (2016). Poster presentation. An assessment of pesticide induced effects on enzymatic activities of freshwater snails exposed to water collected from different dams.
- ❖ Annual National University of Science & Technology Research day, Bulawayo, Zimbabwe (2016). Oral presentation. The Effect of Chronic Exposure of Heavy Metals on Glutathione S-transferase Activity of Freshwater Snails.
- ❖ Yeukai Muusha, **Sanele Mnkandla**, Norah Basopo (2017). The Effects of Sub Lethal Levels of Lead on Acetylcholinesterase Activity in the Rock Pigeon, (*Columba Livia*). *Zimbabwe Journal of Science and Technology*. Vol 12.
- ❖ Majaya Rachel Delfina, Donald Tapfuma, **Sanele Mnkandla**, Norah Basopo (2016) Toxicological effects of differently polluted dam waters spiked with pesticides on freshwater snails *Lymnaea natalensis*. *International Journal of Chemistry*. Vol 8.
- ❖ Gerome Brock, **Sanele Mnkandla**, Norah Basopo (2016). An assessment of the extent of bovine milk pollution by DDT used in public Health in Zimbabwe. *Journal of Applied Science and Research*. Vol 4.

ACTIVITIES AND SOCIETIES:

March 2018:	Presented at the 'girl child and her physical environment' workshop organized by the National University of Science & Technology Ecotoxicology Research Group.
December 2017:	Participated in the National University of Science & Technology 2 nd Water Indaba.
February 2016:	Participated in the STEM conference for girls organized by TechWomen Zimbabwe.
April 2016:	Exhibited at the 2016 Zimbabwe International Trade Fair.
August 2016;	Exhibited at the NUST RIO-SET event.
June 2011- November 2013:	Campus for Christ outreach team member.
August 2011:	Volunteer at Edendale Children's home.

January 2017-date: Member of the South African Society of Biochemistry and Molecular Biology.

ACHIEVEMENTS:

- 2018: Awarded certificate of accomplishment for the Advanced Research Design Course from the Partnership for African Social & Governance Research.
- 2012-2013: Awarded the University of KwaZulu-Natal College of Agriculture, Engineering and Science Masters Scholarship.
- 2011: Awarded certificate for attending an introductory course in Electron Microscopy and associated techniques at University of KwaZulu-Natal.
- 2011: Awarded merit certificates for excellent performance in Modeling, Visualization & Information Retrieval and Biochemistry Research Skills (Honors modules).
- 2009: Awarded the Academic Achievement Certificate for being the best 2nd year student from the Faculty of Science and Agriculture, department of Biochemistry at the University, Fort Hare.
- 2008-2011: Awarded the Zimbabwe Presidential Scholarship for undergraduate and Honours studies.
- 2005-2006: Prefect, Bulawayo Adventist High School.

REFEREES

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