

**Welcome to the
Graduation Ceremony
of the
University of Johannesburg
12 April 2016 at 17:00**

**Welkom by die
Gradeplegtigheid
van die
Universiteit van Johannesburg
12 April 2016 om 17:00**

**Le a Amogelwa
Moletlong wa Dikapešo wa
Yunibesithi ya Johannesburg
12 Moranang 2016 ka 17:00**

**Niyamukelwa
eMcimbini wokweThweswa kweZiqu
weNyuvesi yaseJohannesburg
12 kuMbaso 2016 ngele-17:00**

UNIVERSITY OF JOHANNESBURG

CHANCELLOR

Prof NS Ndebele
BA (Lesotho), MA (Cambridge UK), PhD (Denver USA)

SENIOR OFFICE-BEARERS OF THE UNIVERSITY

VICE-CHANCELLOR AND PRINCIPAL

Prof IL Rensburg
BPharm (Rhodes), MA, PhD (Stanford USA)

DEPUTY VICE-CHANCELLOR: ACADEMIC

Prof A Parekh
BA, BA Hons, MA (UDW), MA (Kansas USA), DPhil (UDW)

DEPUTY VICE-CHANCELLOR: RESEARCH, INTERNATIONALISATION AND THE LIBRARY

Prof T Marwala
BS Eng (Case Western Reserve USA), MEng (UP), PhD (Cambridge UK)

REGISTRAR

Prof IC Burger
BA, HEd, BA Hons, MA, PhD (RAU)

DEPUTY VICE-CHANCELLOR: STRATEGIC SERVICES

Mrs ME Letlape
BSc (UFH)

DEPUTY VICE-CHANCELLOR: FINANCE

Mr J van Schoor
BCom, BCom Hons (RAU), CA (SA)

SENIOR EXECUTIVE DIRECTOR: VICE-CHANCELLOR'S OFFICE

Ms KC Mketi
BA (Bophut), BA Hons (RAU), MBL (Unisa)

ADVISOR TO THE VICE-CHANCELLOR: SPECIAL PROJECTS

Mr DM Manganye
NDip, BTech (UJ)

GENERAL COUNSEL

Prof PH O'Brien
BCom, LLB, LLM, LLD (RAU)

EXECUTIVE DEANS

FACULTY OF ART, DESIGN AND ARCHITECTURE

Prof F Freschi
BA (Wits), BA Hons (UCT), PhD (Wits)

FACULTY OF ECONOMIC AND FINANCIAL SCIENCES

Prof A Dempsey
BCom, BCom Hons, MCom (RAU), CA (SA)

FACULTY OF EDUCATION

Prof SJ Gravett
BA, HEd (PU for CHE), BEd, MEd, DEd (RAU)

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Prof S Sinha
BEng, MEng, PhD (UP)

FACULTY OF HEALTH SCIENCES

Prof A Swart
NDip, NHDip (TWR), BEd, MEd (RAU), DTech (TWR)

FACULTY OF HUMANITIES

Prof AB Broadbent
BA, BA Hons, MPhil, PhD (Cambridge UK)

FACULTY OF LAW

Prof LG Mpedi
B Juris, LLB (Vista), LLM (RAU), LLD (UJ)

FACULTY OF MANAGEMENT

Prof D van Lill
BSc, BSc Hons, MSc, PhD (US)

FACULTY OF SCIENCE

Prof D Meyer
BSc, BSc Hons, MSc (RAU), PhD (California USA)

MEMBERS OF COUNCIL

CHAIRPERSON

Prof RD Marcus

DEPUTY CHAIRPERSON

Mr MS Teke

MEMBERS

Prof H Abrahamse
Mr FM Baleni
Prof IC Burger
Mr JP Burger
Mr D Bvuma
Ms TA Chaka
Ms S Dlamini
Mr TJ Dikgole
Mr CR Gebhardt
Prof D Hildebrandt
Mr G Khosa
Prof C Landsberg
Dr DSS Lushaba
Dr J Manyaka
Ms A Mazimpaka
Ms BJ Memela-Khambula
Dr P Mjwara
Prof A Mohammadali-Haji
Mr T Moloji
Mr MJN Njeke
Prof A Parekh
Prof IL Rensburg
Dr WP Rowland
Mr KB Sibiya
Mr K Thomas
Mr J van Schoor
Mr M White

PRESIDENT OF CONVOCATION

Mr M Mkhonto

Programme

Tuesday, 12 April 2016 at 17:00

To ensure good order during the ceremony all those present are requested to leave the Auditorium only after the ceremony has been concluded.

The academic procession enters the Auditorium and the members of the procession take their seats on the stage.

The choir sings Gaudeamus Igitur (or a CD is played) while those present remain standing.

The Chancellor constitutes the congregation.

Choir.

Welcome.

The relevant Executive Dean presents the candidates to the Chancellor for the conferment of a degree/diploma/certificate.

Singing of the National Anthem.

The Chancellor dissolves the congregation.

The academic procession leaves the Auditorium while those present remain standing.

Lenaneo

Labobedi, 12 Moranang 2016 ka 17:00

Go kgonthiša gore dilo di sepela ka tshwanelo nakong ya moletlo, bohle bao ba tilego moletlong ba kgopelwa go tšwa ka Holong ya kopano feela ka morago ga ge moletlo o phethilwe.

Sehlopha sa dirutegi se tsena ka Holong ya kopano gomme maloko a sehlopha se a dula ditulong tša ona sefaleng.

Khwaere e opela Gaudeamus Igitur (goba CD e tlo bapalwa) mola bao ba lego gona ba tšwela pele go ema.

Mokhanseliri o kopanya phuthego.

Khwaere.

Dikamogelo.

Hlogophethiši ya maleba ya lefapha e hlagiša dialoga go Mokhanseliri gore di newe tikrii/diploma/setifikeiti.

Go opelwa ga Koša ya Setšhaba.

Mokhanseliri o phatlalatša phuthego.

Sehlopha sa dirutegi se tšwa ka Holong ya kopano mola bao ba lego gona ba tšwela pele go ema.

Program

Dinsdag, 12 April 2016 om 17:00

Ter wille van die ordelike verloop van die plegtigheid
word alle aanwesiges vriendelik versoek
om die Ouditorium nie voor die einde van die plegtigheid te verlaat nie.

Die akademiese proses kom die Ouditorium binne en neem op die verhoog plaas.
Die koor sing Gaudeamus Igitur (of 'n CD word gespeel) terwyl die aanwesiges staan.

Die Kanselier stel die kongregasie saam.

Koor.

Verwelkoming.

Die betrokke uitvoerende dekaan stel die kandidate aan die Kanselier voor vir die
toekenning van 'n graad/diploma/sertifikaat.

Sing van die volkslied.

Die Kanselier ontbind die kongregasie.

Terwyl die aanwesiges bly staan, verlaat die akademiese proses die Ouditorium.

Uhlelo

uLwesibili, 12 kuMbaso 2016 ngele-17:00

Ukuze kuqinisekwe ukuthi konke kuhamba kahle ngesikhathi somcimbi, bonke abakhona
bacelwa ukuba baphume eHholweni kuphela lapho umcimbi usuphuthuliwe.

Udwendwe lezifundiswa lungena ehholweni bese amalungu odwendwe ahlala phansi
esiteji.

Ikwaya icula i-Gaudeamus Igitur (noma kudlalwa iCD) ngalenkathi labo abakhona
besamile.

UShansela uhlanganisa ibandla.

Ikwaya.

Ukwamukelwa.

Izinhloko Eziyiziphathimandla ezithintekayo zethula abafundi kuShansela weNyuvesi
ukuze bathole idigiri/iploma/isitifiketi.

Kuculwa iHubo Lesizwe.

Gaudeamus Igitur

Gaudeamus igitur,
Juvenes dum sumus;
Post iucundum iuventutem,
Post molestam senectutem
Nos habebit humus.

Vivat academia,
Vivant professores,
Vivat membrum quodlibet,
Vivat membra quaelibet;
Semper sint in flore!

English

Let us rejoice, therefore,
While we are young.
After a pleasant youth
After a troubling old age
The earth will have us.

Long live the academy!
Long live the professors!
Long live each student;
Long live the whole fraternity;
For ever may they flourish!

Sesotho sa Leboa

Ka gona, a re thabeng,
Re sa le ba bafsa.
Ka morago ga bofsa bjo bo bose
Ka morago ga go tšofala mo go nago le
mathata
Lefase le tla ba le rena.

Phela thuto phela!
Phelang diprofesa phelang!
Phelang baithuti phelang;
Phela kagišano ka botlalo phela;
O ka re ba ka phela gabotse goyagoile!

Afrikaans

Laat ons dan vrolik wees,
Terwyl ons jonk is;
Na 'n aangename jeug.
Na 'n onaangename oudag,
Sal die aarde ons hou.

Lank lewe die universiteit,
Lank lewe die professore,
Lank lewe elke student,
Lank lewe al die studente,
Mag hulle vir ewig hul jeug behou!

Zulu

Ngakho, masithokoze
Sisebasha nje.
Emva kobumnandi bobusha
Emva kwezinkinga zobudala
Umhlaba uzosithatha.

Phambili ngemfundo!
Phambili boSolwazi!
Phambili nakuwe mfundi;
Phambili ngenhlangano yonke;
Maziqhubeke ngonaphakade!

QUALIFICATIONS

1. National Diploma (N Dip)

Bhengu, Angel Nokuthula (Biotechnology)
Bhengu, Umile (Food Technology)
Booi, Siphokazi Gift (Analytical Chemistry)
Gwele, Palesa (Food Technology)
Hlongwa, Nomawethu Thapelo Salome (Food Technology)
Kaka, Petliwa Ernest (Analytical Chemistry)
Kale, Neo Adolphina (Analytical Chemistry)
Kubeka, Miriate Nomusa (Analytical Chemistry)
Kutama, Tshilidzi Pertunia (Food Technology)
Mabitsela, Mpho Faith (Food Technology)
Mafolo, Folo Mafolo (Analytical Chemistry)
Mahlambi, Godfrey Mduduzi (Analytical Chemistry)
Makatu, Phumudzo Blair (Food Technology)
Malatji, Johannes Lepato (Analytical Chemistry)
Maleka, Ouma Magdeline Ashley (Analytical Chemistry)
Maluleke, Rodney (Analytical Chemistry)
Masebe, Katlego Machuene (Food Technology)
Mbetse, Nikiwe Antonnet (Analytical Chemistry)
Mbonani, Zanele Nicole (Analytical Chemistry)
Mhlungu, Ndumiso (Food Technology)
Mkhari, Faith Katekani (Analytical Chemistry)
Mlaba, Ratanang Puseletso Victoria (Analytical Chemistry)
Mnisi, Sylvia Mmapula (Food Technology)
Modisane, Katlego (Analytical Chemistry)
Mogamisi, Neo Khumoetsile (Analytical Chemistry)
Mohlala, Rehunolotjwe Nkapesane (Food Technology)
Mojela, Patricia Digole (Analytical Chemistry)
Mokoena, Ntombikayise Gladness (Biotechnology)
Motabeni, Bohlale (Analytical Chemistry)
Motsewabone, Reaoleboga (Analytical Chemistry)
Mphale, Tebogo Candice (Food Technology)
Nenzhelele, Thembuluwo (Food Technology)
Ngobeni, Daisy Delta (Analytical Chemistry)
Ngobese, Mathabiso (Food Technology)
Njoko, Busisiwe Immaculate (Food Technology)
Nkuna, Nsovo Kevin (Food Technology)
Ntimbana, Tinyiko Hlamulo (Analytical Chemistry)
Ntsandeni, Tondani Pearl (Food Technology)

Nxumalo, Stephen Qiniso (Food Technology)
Pole, Phadishe Solomon (Analytical Chemistry)
Ramotshela, Lesiba (Food Technology)
Ramuada, Rinae (Food Technology)
Ratshidi, Phumzile (Food Technology)
Shabalala, Nhlanhla (Analytical Chemistry)
Sibiya, Lindiwe Hazel (Analytical Chemistry)
Sithole, Manishana Precious (Analytical Chemistry)
Teubes, Jason (Analytical Chemistry)
Tsotetsi, Palesa Roseline (Analytical Chemistry)
Tsukulu, Mpine Esther (Analytical Chemistry)
Yala Mataya, Ginette (Analytical Chemistry)

2. Bachelor of Technology (B Tech)

Bhero, Rufaro Archibald (Biotechnology)
Diale, Mamonokane Olga (Biotechnology)
Hadebe, Xolile Macia (Food Technology)
Khoza, Minenhle Felicity Gloria (Food Technology) **(with distinction)**
Kumalo, Thembi Naledi Philadelphia (Biotechnology)
Lufuluabo, Kantu (Biotechnology)
Madisa, Gabatshoane Prisca (Food Technology)
Makamo, Andy (Food Technology)
Matjila, Lebohang (Biotechnology)
Mfono, Gladwin Thami (Food Technology)
Mobango, Neo (Biotechnology)
Morapi, Freddy Phuti (Food Technology)
Morare, Rebotiloe Fridah (Biotechnology)
Msomi, Phumelele Benedicta (Food Technology)
Mtshali, Thobile Fortunate (Biotechnology)
Naidoo, Kaveshni (Food Technology)
Ncwandule, Pfunani Makhanani (Food Technology)
Okafor, Viola Onyinnye (Biotechnology)
Olifant, Goitsione Emily (Biotechnology)
Padayachee, Soobramoney (Food Technology)
Rakoma, Lina Malehu (Biotechnology)
Sekgathume, Thabiso (Biotechnology)
Setlhaku, Kelebogile (Food Technology)
Shokwe, Tumelo Roderick (Food Technology)
Sithole, Nqubeko Nomfundo (Food Technology) **(with distinction)**

3. Bachelor of Arts (BA Hons)

Lockhat, Yaseen (Geography)

4. Bachelor of Commerce Honours (BCom Hons)

Nkuna, Doris Dorah (Informatics)

Van Ass, Carl Louis Peter (Informatics)

5. Bachelor of Science Honours (BSc Hons)

Abraham, Rowen Caleb (Geology)

Akum, Ernest Tanjeck (Geography)

Asmal, Faatima Hoosen (Computer Science)

Baker, Nathan Jay (Zoology) **(with distinction)**

Benie, Brou Patrick Ervin (Informatics)

Bilitane, Pindiwe Docus (Computer Science)

Bosman, Brendan Hermanus (Computer Science)

Brough, James Eric (Geology)

Burger, Christiaan Hugo (Information Technology)

Byleveld, Jean Jacques (Information Technology)

Callen, Stuart James Mark (Computer Science)

Cerrai, Andrea (Computer Science)

Chizema, Munashe (Chemistry) **(with distinction)**

Chukwu, Chidozie Williams Obunaeme (Applied Mathematics) **(with distinction)**

Cronjé, Stefan (Computer Science) **(with distinction)**

Deva, Trishant (Informatics)

Downs, Kevin Paul (Information Technology) **(with distinction)**

Duiker, Itumeleng Gregory (Applied Mathematics)

Ferreira, Mizan (Biochemistry) **(with distinction)**

Gcaba, Buseka (Botany)

Gonsalves, Maruschka (Geography)

Hamany Djande, Claude Yasmine (Biochemistry)

Heydenrych, Rhyno (Information Technology)

Hlungwani, Peace Ripfalo (Geology)

Hussan, Raeesa Hoosen (Biochemistry)

Jappie, Thauriq (Information Technology) **(with distinction)**

Jiyana, Thozama (Informatics)

Kajee, Atiyah (Informatics)

Khoza, Tebogo Magudu (Zoology)

Khumalo, Sibonile (Geology)

Kikounga, Sarah Danille (Biochemistry)

Kimmie, Saarah (Computer Science)

Lee, Mitchell Charlton (Geology)

Lekganyane, Dorcas Mapula (Botany)

Lowe, Robyn Angela (Geography)

Maheso, Irene (Informatics)

Makukule, Xitshembiso Mumsy (Geology)

Malindi, Jabulile Grace (Botany)

Mangole, Tshegofatso Confidence (Computer Science)

Mapukata, Sivuyisiwe (Chemistry)
Mareya, Charity Rumbidzai (Biochemistry)
Marumo, Lucia (Informatics)
Maseko, Alison (Computer Science)
Masike, Keabetswe (Biochemistry)
Masunga, Ngonidzashe (Chemistry)
Mathebula, Rebecca (Geology)
Matsigila, Livhuwani (Computer Science)
McGeer, Bianca (Geology)
Meer, Che Mahomed (Computer Science)
Meyers, Nicole Liezl (Biochemistry)
Milondzo, Arthur (Computer Science)
Mnguni, Ziyanda Monde Nkzenhle Gold (Computer Science)
Mnyakeni, Abel Clement (Mathematics Statistics)
Moima, Johannes Thapelo (Chemistry)
Moodley, Prenevin Denzil (Information Technology)
Mosola, Napo Nathnael (Computer Science)
Motingoe, Mahlomola (Informatics)
Motsoahae, Tumisang Long (Chemistry)
Mpanza, Zamakhonto Lindiwe (Geology)
Msweli, Ayanda Bridget (Botany)
Mthanda, Vuyisile (Biochemistry)
Mudzudzanyi, Ndivhuwo Millicent (Applied Mathematics)
Mufhadi, Vhutshilo Nelly (Computer Science)
Muzenda, Charles (Chemistry)
Myolwa, Loyiso (Computer Science)
Naicker, Simone (Geography)
Nagar, Amisha (Biochemistry)
Nair, Ryan (Computer Science) **(with distinction)**
Naran, Sahil (Information Technology)
Nchabeleng, Gertrude Mmatsatsi (Informatics)
Ndhlovu, Mzwandile Brian (Geology)
Ngobese, Nozipho Nontobeko (Botany)
Nkoana, Tlaishego Tedson (Zoology)
Nkosi, Phethile Patience (Computer Science)
Noe, Thabo Joel Tumelo (Chemistry)
Nouko, Manuella (Computer Science)
Oliver, Jody Carynn (Zoology)
Parbhoo, Rohan (Information Technology)
Phuroe, Teboho Lazarus (Informatics)
Pillay, Deslan (Computer Science)
Radebe, Lucky (Chemistry)
Rankudu, Motswasele Marvin (Geology)
Ratsoma, Manchela Francinah (Botany)
Rattray, Ryan David (Botany)
Reddy, Evashan (Computer Science)
Rembuluwani, Thivhudziswi (Computer Science)

Roodt, Gerhard Theo (Chemistry)
Rudman, Liam (Botany)
Sekgarametso, Wandile (Computer Science)
Seotlo, Mamochabo Euphodia (Computer Science)
Seroka, Khotso Lebohang (Zoology)
Shaku, Steve Lesibana (Applied Mathematics)
Shiba, Sanele Nomfundo Sandisiwe (Botany)
Sihoka, Chris (Zoology)
Sithole, Kagiso (Chemistry)
Strydom, Ryno Henry (Computer Science)
Takalana, Mpho Charles (Physics)
Tapfuma, Moses Kudakwashe (Computer Science)
Tesfagiorgis, Thandi Gloria (Energy Studies)
Thathaisa, Khangwelo Sharon (Computer Science)
Tobler, Tyron Ulrich (Geology)
Tsatsi, Phenyos Joshua (Geology)
Tshikororo, Rudzani Ralph (Botany)
Van der Walt, Benice (Chemistry)
Van der Walt, Chantelle (Informatics)
Van der Westhuizen, Monique (Geology)
Welgus, Szymon Przemslaw (Computer Science)
Zietsman, Jonathan Byron (Geography)

6. **Master of Technology (M Tech)**

Dlamini, Makhosazana Lindiwe (Biotechnology) **(with distinction)**

Dissertation: Application of some target formulations of active herbal plant components in reducing animal exposure to mycotoxins and associated health effects.

Supervisor: Dr PB Njobeh

Co-supervisor: Prof RWM Krause (Rhodes University)

7. **Master of Philosophy (MPhil)**

Masekamani, Masilu Daniel (Energy Studies) **(with distinction)**

Dissertation: Performance Evaluation and Emission Characterisation of Domestic Coal Combustion in Optimised Braziers (*imbaulas*).

Supervisor: Prof HJ Annegarn

Shongwe, Nkosinathi Siphos (Energy Studies)

Dissertation: To study the Mobility of the Naturally Occurring Radioactive Materials (Norms) in the Sediments as a Function of Changing Environmental Conditions.

Supervisor: Prof SH Connell

Co-supervisor: Dr A Faanhof (NECSA)

Zimba, George Lowani (Energy Studies)

Dissertation: Search for Octupole Deformation in Low Spin Structure of ^{154}Dy .

Supervisor: Dr S Bvumbi

Co-supervisor: Dr P Masiteng

8. Master of Science (MSc)

Ahmed, Mustafa Abaas Mohamedelkhair (Physics) (with distinction)

Dissertation: Magnetism and pressure-induced metal-insulator transition in the narrow-gap semiconductor FeGa_3 .

Supervisor: Dr B Doyle

Co-supervisor: Prof GR Hearne

Co-supervisor: Dr E Carleschi

Dubula, Bambo (Environmental Management)

Minor Dissertation: Characterizing selected invasive alien plants in the Klipriviersberg Nature Reserve using field based spectroradiometer data.

Supervisor: Dr SG Tesfamichael

Co-supervisor: Dr IT Rampedi

Hlabathe, Thaane Moses (Chemistry)

Dissertation: Synthesis, characterization and immobilization of Pd and Pt dendrimer-encapsulated nanoparticles and their application in homogeneous and heterogeneous catalysis.

Supervisor: Prof R Meijboom

Hoffman, Andries Cornelius (Aquatic Health)

Minor Dissertation: The application of diatoms as indicators of grass pan health in Mpumalanga, South Africa.

Supervisor: Prof V Wepener

Co-supervisor: Dr M Ferreira (Jeffares & Green (Pty) Ltd)

Kabeya Ilunga, Ali (Chemistry)

Dissertation: Synthesis and application of Monodisperse Silver and Gold Nanoparticles as Catalysts for Kinetic Investigations of Model Reactions.

Supervisor: Prof R Meijboom

Maartens, Ronald John (Mathematics) (with distinction)

Dissertation: Balanced Graphs, Threshold Functions of Random Graphs and Their Co-Occurrence.

Supervisor: Prof E Jonck

Mogomotsi, Mpho Sophia (Chemistry)

Dissertation: Evaluation of various atomic spectroscopic techniques for the analysis of Platinum Group Metals (PGMs) and Base Metals (BMs) on concentrate samples.

Supervisor: Dr L Marjanovic

Co-supervisor: Mrs H Du Plessis-Fischer

Mokobodi, Makoena Refilwe (Environmental Management)

Minor Dissertation: Classifying and assessing the water quality of wetlands impacted by ESKOM's Matla Power Station in the Mpumalanga province.

Supervisor: Dr IT Rampedi

Molotsi, Kegomoditswe Noreen (Informatics)

Dissertation: Developing a framework for secure use of Portable Storage Devices in a corporate environment.

Supervisor: Dr BL Tait

Ramakoloi, Ntshebo Christinah (Geology)

Dissertation: Compositional variation of the Pt-Pd bismuthotellurides in the Platreef, Akanani Prospect, Lonmin PLC.

Supervisor: Prof KS Viljoen

Riet, Katlego Botlhaleng (Biochemistry) (with distinction)

Dissertation: Development of analytical procedures for the quantification and evaluation of the roles of plant hormones involved in defense and induced plants.

Supervisor: Prof IA Dubery

Co-supervisor: Dr LA Piater

Terblans, Yvette Michelle (Environmental Management)

Minor Dissertation: How sustainable is road transport in Gauteng, South Africa? An analysis of the R59 from the perspective of traffic volumes and vehicle loading.

Supervisor: Ms TJM McKay

Vilakati, Bongekile Racheal (Chemistry) (with distinction)

Dissertation: A Bi-Faceted Adsorptive Performance of TiO₂-Coated Carbon for the Removal of Fluorides in Water.

Supervisor: Prof TAM Msagati

Co-supervisor: Dr E Nxumalo

9. Philosophiae Doctor (PhD)

Bezeng, Simeon Bezeng (Botany)

Thesis: Predicting species invasions: global change and the non-native trees of Southern Africa.

Supervisor: Prof M van der Bank

Co-supervisor: Prof TJ Davies (McGill University, Canada)

Co-supervisor: Dr K Yessoufou

Bosire, Geoffrey Orina (Chemistry)

Thesis: Experimental and modelling studies on the interactions of metals and natural organic matter in cooling water at coal power-generation plants.

Supervisor: Prof JC Ngila

Co-supervisor: Dr BV Kgarebe (National Institute of Occupational Health, Johannesburg)

Botha, Tarryn Lee (Aquatic Health)
Thesis: The aquatic toxicology of nano gold.
Supervisor: Prof V Wepener

Faleni, Nobathembu (Chemistry)
Thesis: Sugars-capped metal oxide (Zn, Mn and Cd) nanoparticles prepared using the single-source precursor and conventional routes.
Supervisor: Prof MJ Moloto

Farquharson, Charon (Zoology)
Thesis: Ecotoxicological assessment of selected amphibian species as indicators of stressor exposure in the Kruger National Park.
Supervisor: Prof V Wepener
Co-supervisor: Prof NJ Smit (North-West University)

Joseph, Jitcy (Biochemistry)
Thesis: Calmodulin dependent protein kinase (CaMK)II activation through exercise regulates Nuclear respiratory factor (NRF)-1: Potential role in type 2 diabetes and obesity.
Supervisor: Prof E Mukwevho
Co-supervisor: Dr G Koorsen

Mahlangu, Oranso Themba (Chemistry)
Thesis: Fouling of nanofiltration membranes: mechanisms and implications for trace organic rejection.
Supervisor: Prof BB Mamba
Co-supervisor: Prof A Verliefde (Ghent University, Belgium)
Co-supervisor: Prof EMV Hoek (University of California, Los Angeles, United States)

Makolo, Felix Loka (Chemistry)
Thesis: Development of new synthetic strategies for the synthesis of carbohydrate-based thiochromans, thiochromenes and benzothiophenes and their selected antimalarial evaluation.
Supervisor: Prof HH Kinfe
Co-supervisor: Prof C Holzapfel

Mamba, Saul Mcelwa (Chemistry)
Thesis: Dithiocarbamate Functionalized Glycomonomers and Polymers as Ligands for Gold(I) Complexes and as capping agents for gold nanoparticles: Synthesis, Characterization and Evaluation as Anticancer Agents.
Supervisor: Prof J Darkwa

Mkhabela, Vuyiswa Jane (Chemistry)
Thesis: Novel Bio-nanocomposite Scaffolds for Tissue Engineering Application.
Supervisor: Prof S Sinha Ray

Motsa, Mxolisi Machawe (Chemistry)

Thesis: Fundamental mechanisms of forward osmosis membrane fouling during seawater desalination and wastewater reclamation.

Supervisor: Prof BB Mamba

Co-supervisor: Prof A Verliefde (Ghent University, Belgium)

Co-supervisor: Prof EMV Hoek (University of California, Los Angeles, United States)

Neethling, Lourelle Alicia Martins (Zoology)

Thesis: Aspects of reproductive biology and the life cycle of *Chonopeltis australis*, a description of *Dipteropeltis campanaformis* Neethling, Malta and Avenant-Oldewage, 2014 and comments on distribution of Branchiura.

Supervisor: Prof A Avenant-Oldewage

Parshotam, Heena (Chemistry)

Thesis: Modelling studies of interactions between natural organic matter and metals: effects on cooling water precipitation potentials in power generation plants.

Supervisor: Prof JC Ngila

Co-supervisor: Dr SB Mishra (University of South Africa)

Ross, Mathew James (Aquatic Health)

Thesis: Determining the Biological Requirements of Selected Important Migratory Fish Species to aid in the design of Fishways in South Africa.

Supervisor: Prof V Wepener



Bezeng, Simeon Bezeng (PhD)

Mr Bezeng was born in 1985 in the Northwest region of the Cameroon. He obtained a BSc in Botany and Environmental Sciences at the only Anglo-Saxon University in Cameroon, Buea. He joined the University of Johannesburg in 2010 where he obtained a BSc Honours and MSc (*cum laude*) in Botany.

Mr Bezeng's research focused on the interaction between climate change and species invasion, both important global drivers of biodiversity loss. He used information on the non-native trees of southern Africa to predict their invasion potential. First, using a suite of plant functional traits, he identified potential traits that could predispose non-native species to establish in new environments. Second, using species occurrence data, he evaluated the impact of future changing climatic conditions on the potential distribution of these non-native species. He identified regions that may be hotspots for species invasion under projected climate change, and found that future changes in climatic conditions may lessen the effects of many currently invading species. These findings have important implications for the management and control of non-native species in this region. The candidate's research has led to numerous publications in high impact factor, international peer-reviewed journals. He has co-authored several other papers with fellow students and external collaborators with a recent paper currently under review in the Journal of Science.

Supervisor: Prof M van der Bank

Co-supervisor: Prof TJ Davies (McGill University, Canada)

Co-supervisor: Dr K Yessoufou



Bosire, Geoffrey Orina (PhD)

Geoffrey Bosire was born in 1979 in Nyamira County, Kenya. In 2003 he obtained a Bachelor of Education in Science degree from Moi University and in 2009 obtained an MSc degree from Jomo Kenyatta University. He also holds an MBA from the University of Nairobi. In February 2013, he registered for the PhD programme in Chemistry in the Department of Applied Chemistry at the University of Johannesburg.

The topic of Mr Bosire's PhD project sought to investigate a fundamental problem of scaling in condenser pipes that carry cooling water in coal power-generating stations. Many power stations at Eskom are forced to shut down their operations from time to time to allow maintenance of the cooling equipment. The raw water used in the condenser tubes for cooling purposes, is rich in dissolved inorganic and organic compounds. In particular, natural organic matter (NOM) when available at high levels, influences the speciation and mobility of the major cations and trace metals. The candidate used a range of spectroscopic and chromatographic analytical instruments coupled with computer modelling techniques, to characterize the raw and cooling water used in Eskom power plants. His research findings identified the different types and composition of NOM. The establishment of specific metal-NOM binding sites, lead to a better understanding of the precipitation potential and speciation chemistry of metals. The results of the study have been published in six international journals and have been presented at five international conferences.

Supervisor: Prof JC Ngila

Co-supervisor: Dr BV Kgarebe (National Institute of Occupational Health)



Botha, Tarryn Lee (PhD)

Tarryn Lee Botha was born in Johannesburg in 1986 and matriculated from Roosevelt High School in 2003. She obtained a BSc degree in Zoology and Biochemistry, a BSc Honours and an MSc in Aquatic Health from the University of Johannesburg. At the beginning of her PhD Tarryn underwent training for two months at Fraunhofer IME Institute in Schmallenberg, Germany and was an international exchange student at the School of Veterinary Medicine, Hokkaido University, Japan. Tarryn is currently a Postdoctoral Fellow at North West University and is also part of the DST Nanotechnology Health, Safety and Environmental Risk Research Platform (Nano-HSE Risk Research Platform).

The candidate's research followed a tiered approach to determine the toxicity of gold nanoparticles and the risk to aquatic ecosystems. Chronic testing of aquatic macroinvertebrates (*Daphnia magna*) revealed no particle internalization due to the chitin lining within the intestinal tract, however surface adhesion altered moulting patterns and swimming behaviour. The zebrafish, *D. rerio*, was used as a model organism for *in vivo* nanoparticle uptake and biodistribution studies. DNA microarray analysis coupled with Real Time Polymerase Chain Reactions of the liver showed clustering of gene regulation at different exposure concentrations. This was related to the observed agglomeration patterns in the media as well as biological tissues limiting uptake. The development of the CytoViva dark field imaging for whole organisms was crucial in visualizing how particle adherence occurred on the surface of *Daphnia* as well as the sequestration of nanoparticle pockets in muscle tissue of zebrafish. Circulating protein biomarkers showed significant differences in protein damage due to mechanical interactions of the cellular components and gold nanoparticles, however oxidative stress biomarkers showed no significant differences when compared to control organisms. The results form an integral part in developing guidelines to assess nanoparticle environmental risk in aquatic ecosystems. Three papers have been published in international journals while two more are in the final stages of preparation.

Supervisor: Prof V Wepener



Faleni, Nobathembu (PhD)

Nobathembu Faleni matriculated from John Bisseker Senior Secondary School in East London. She obtained a National Diploma and a BTech degree in Analytical Chemistry from the Walter Sisulu University of Technology. She received a Carl Duisburg Gessellschaft (CDG) Scholarship for advanced training at Bonn Fach-hochschule, Germany. In 2007 she obtained an MTech degree in Chemistry at the Cape Peninsula University of Technology. She enrolled for her PhD in 2008 and was awarded an NRF Scarce Skills Doctoral Scholarship in 2009. She is currently employed as a Lecturer at Walter Sisulu University of Technology.

Ms Faleni's thesis outlines the synthesis and functionalisation of water-soluble (Zn,Cd,Mn) oxide nanoparticles using sugars as stabilizers prepared using single source precursor and conventional routes. The water-soluble sugars capped MnO and ZnO semiconductor nanoparticles with size-dependent optical properties were used as potential toxicological probes on the *Vibrio fischeri* invertebrate. The stability of the water-soluble ZnO and MnO nanoparticles were considered as an important factor affecting their potential environmental impacts. The toxicity of semiconductor nanoparticles varied with the chemical state of the metals, and environmental transformation or degradation. The results indicated that the *Vibrio fischeri* was more sensitive to water-soluble sugar capped ZnO and MnO nanoparticles. This has determined the level of toxicity of semiconductor nanoparticles on the *Vibrio fischeri* bacteria. The candidate has published three peer-reviewed journal articles, and presented at local and international conferences.

Supervisor: Prof MJ Moloto



Farquharson, Charon (PhD)

Charon was born and raised in Johannesburg, where she attended Hoërskool President. She enrolled at the University of Johannesburg where she obtained a BSc in Zoology and Botany (*cum laude*) in 2006, a BSc Honours in Biodiversity and Conservation (*cum laude*) in 2007 and her MSc in Zoology (*cum laude*) in 2010.

Ms Farquharson's research focused on the effects of acid precipitation and other environmental stressors on four frog species from the Kruger National Park (KNP). Acute and chronic bioassays together with field sampling was undertaken to determine the effects of pH and other chemical pollutants such as metals and organochlorine pesticides on these amphibians. Results indicated that the amphibians will be negatively affected when the acidity of their aquatic breeding areas are increased to pH-concentrations of 4 and lower. The current buffering capacity of surface waters however, prevents the pH to decrease to acutely toxic levels. Oxidative stress and biomarkers of exposure indicated that the frog species from the main tourist areas such as Tshokwane and Skukuza, as well as areas situated near the Crocodile River on the southern border of KNP showed signs of stress due to exposure to environmental pollutants such as metals and pesticides. This study provided important information regarding the toxic effects of acidity on specific frog species and will help contribute to future management and conservation efforts to help maintain the KNP as one of South Africa's premier conservation areas. The findings of this study have been presented at both national and international conferences. One paper has been published in an international peer reviewed journal and a further three are being prepared.

Supervisor: Prof V Wepener

Co-supervisor: Prof NJ Smit (North-West University)



Joseph, Jitcy (PhD)

Jitcy Saji Joseph matriculated in 1999. She enrolled at the Mahatma Gandhi University, India, where she obtained a BSc degree in 2002, and a Masters' degree in 2005. After completing her Masters' degree, she worked as a biochemist in the food industry. From 2008 to 2011, she worked as a secondary school educator in the North West province, South Africa. She enrolled for a PhD in Biochemistry in July 2011 at the University of Johannesburg. She is currently working at PharmaQ Pty Ltd.

Mrs Joseph's research was aimed at finding molecular and biochemical pathways through which exercise alleviates the symptoms of diabetes. Diabetes is a chronic disease that has no cure to date and is caused, in part, by elevated glucose and various lipid species in the blood. Her research focussed on the activation of Calmodulin-dependent protein kinase (CaMK)II through exercise showed that activation of CaMKII by exercise results in improved glucose transport and increased mitochondrial biogenesis. The study was the first to show that CaMKII activation regulates a nuclear transcriptional factor called Nuclear Respiratory Factor (NRF)-1, through which mitochondrial biogenesis is initiated. Furthermore, the study again showed for the first time that CaMKII down-regulates various lipid species known to cause diabetes & metabolic syndrome and concomitantly improving the synthesis of lipids known to increase insulin signalling. This parallel regulation of CaMKII in regulating both mitochondrial biogenesis and glucose transport has huge implications in finding novel therapeutics much needed to cure diabetes. Therefore, CaMKII can be used as a target in the design of novel drugs that cure diabetes. The candidate's work has been published in three international peer-reviewed journals and has also been presented at both local and international conferences.

Supervisor: Prof E Mukwevho

Co-supervisor: Dr G Koorsen



Mahlangu, Oranso Themba (PhD)

Oranso Themba Mahlangu matriculated at Duze High School in 2004. In 2009 he obtained his BSc Honours degree at the University of Swaziland. In 2012 he obtained his MSc degree in Chemistry (*Cum laude*) at the University of Johannesburg. In 2012 his PhD studies commenced toward a joint degree at the University of Johannesburg and the University of Ghent, Belgium.

Mr Mahlangu's research focused on investigating fouling of nanofiltration membranes. Fouling mechanisms and implications for trace organic rejection was systematically investigated. Fouling was found to degrade membrane performance and lowered permeate quality and quantity. Novel energy-efficient membranes incorporated with nanoparticles were then synthesised. The membranes were resistant to organic fouling and rejected trace organics. For industrial water purification, fouling control strategies can be developed based on the knowledge of fouling mechanisms presented in this study. In addition, membrane performance in terms of flux and trace organic rejection can be predicted based on the simple models used in the thesis. The candidate has published 3 papers in peer-reviewed international journals.

Supervisor: Prof BB Mamba

Co-supervisor: Prof A Verliefde (Ghent University, Belgium)

Co-supervisor: Prof EMV Hoek (University of California, Los Angeles, United States)



Makolo, Felix Loka (PhD)

Felix Makolo was born and raised in the Cameroon. He enrolled at the University of Buea in Cameroon and graduated with a BSc in Chemistry in 2001. He was then employed as a research assistant at the Pharmacochemistry Research Group of the University of Buea. After completing his MSc degree in Chemistry in 2006, he joined the Chemistry Department at the University of Johannesburg in June 2011 for his doctoral studies. He is currently a Post-Doctoral fellow at H3D, a drug discovery and development centre, at the University of Cape Town.

Felix Makolo's doctoral thesis developed new variants of a class of relatively rare sulfur heterocycles, which are of importance due to their potential biological and medicinal properties. He identified some unique and unprecedented chemical transformations that allow for the stereoselective synthesis of thiochromans, thiochromenes and benzothiophenes. The compounds obtained have shown excellent antimalarial activities against both chloroquine-sensitive and chloroquine-resistant strains of *plasmodium falciparum*. Moreover, the methodologies developed are of practical value, being high yielding and readily scalable and thus represents advances of interest to the pharmaceutical industry as well as the academic fraternity. The candidate's work has produced five papers published in international peer-reviewed journals and has also been presented at four scientific conferences.

Supervisor: Prof HH Kinfe

Co-supervisor: Prof C Holzapfel



Mamba, Saul Mcelwa (PhD)

Saul Mamba matriculated in Swaziland in 1995. He obtained his BSc degree in 2000 from the University of Swaziland. He enrolled for his MSc degree in Chemistry at the University of Johannesburg in 2008 and graduated (*cum laude*) in 2010. He then enrolled for a doctorate degree in the Department of Chemistry, University of Johannesburg in March 2010.

A major drawback for the development of many metallodrugs is the inability of a metallodrug to be delivered to where it is needed. Saul Mamba's doctoral thesis investigated the use of bio-compatible glycol polymers as drug delivery vehicles for gold thereof as anticancer agents. The polymers were functionalized with gold(I) dithiocarbamate complexes to form glycol-conjugates in order to improve their in vitro properties as anticancer agents. The glycol-conjugates displayed excellent anticancer activities against a number of cancer cell lines. This clearly demonstrated the use of bio-compatible polymers as drug delivery vehicles. In addition, he prepared phosphinogold(I) dithiocarbamates from the monomers used to produce the bio-compatible polymers. These phosphinogold(I) dithiocarbamates also exhibited excellent anticancer activities with very good selectivity for breast cancer cells; thus making these gold compounds excellent candidates for breast cancer drug development. The results in this thesis have been published in one international peer-reviewed journal and two additional articles are in preparation.

Supervisor: Prof J Darkwa



Mkhabela, Vuyiswa Jane (PhD)

Vuyiswa Jane Mkhabela holds a BSc degree in Chemistry & Mathematics from the University of Swaziland and obtained a Masters Degree (*cum laude*) from the University of Johannesburg in 2010. In 2009 she was appointed as a teaching assistant in the Applied Chemistry Department of the University of Johannesburg. She was awarded the Canon Collins Trust Scholarship during her doctoral study.

Ms Mkhabela's research entailed preparing hybrid scaffolds using clay minerals and biopolymers for applications in bone tissue engineering. Polymer nanocomposite scaffolds of polylactic acid and polycaprolactone mixed with chitosan-modified montmorillonite were prepared by solvent casting and a particulate leaching method. The scaffolds were tested for biodegradability, bioresorbability and biocompatibility using simulated body fluid and human foetal osteoblast cells. The polymer/clay hybrid scaffolds showed enhanced biodegradability and resorption due to the inclusion of clay particles in the polymer matrices. This was also observed in the biocompatibility studies which showed an improvement in the growth and proliferation of the osteoblast cells on the scaffolds. Alkaline phosphatase activity and calcium deposits were also observed on the cell-scaffold constructs, and these were indicators of the differentiation of the osteoblast cells and successful *in vitro* bone tissue formation. The study suggests the potential of the novel polymer/clay hybrids to be used as scaffolding materials for the transplantation of osteoblasts to regenerate bone. Two articles have been published in international peer-reviewed journals and one more is under review. The research has also been presented at both local and international conferences.

Supervisor: Prof S Sinha Ray



Motsa, Mxolisi Machawe (PhD)

Mxolisi M Motsa matriculated in 2003. In 2008 he obtained a BSc degree from the University of Swaziland majoring in Chemistry and Biological sciences. He obtained an MSc degree in Chemistry from the University of Johannesburg in 2011 and the next year his PhD studies commenced toward a joint degree at the University of Johannesburg and the University of Ghent, Belgium.

Mr Motsa's research aimed at establishing the fundamental factors that influence the performance of a forward osmosis membrane filtration process during seawater desalination and wastewater reclamation, with particular emphasis to membrane fouling. This research showed that the forward osmosis has the potential of treating heavily impaired water sources at lower energy requirements, and the process can also be integrated into current treatment systems to form hybrid systems bearing improved performance and energy saving properties. Furthermore, process performance can be enhanced by preparation of non-reactive newer generation membranes and draw solutes. The candidate has published two papers in international peer reviewed journals, with two more papers under preparation for possible publication. The candidate's work has also been presented at several international conferences.

Supervisor: Prof BB Mamba

Co-supervisor: Prof ARD Verliefd (University of Ghent, Belgium)

Co-supervisor: Prof EMV Hoek (University of California Los Angeles, United States)



Neethling, Lourelle Alicia Martins (PhD)

Lourelle Neethling was born in Johannesburg in 1986. She matriculated in 2004 from Jeppe High School for Girls in Kensington, Johannesburg. She obtained a BSc Aquatic Health degree in 2008 (UJ), a BSc Honours in Zoology in 2009, and an MSc Zoology degree in 2010. All her degrees were obtained from the University of Johannesburg. She received awards for presentations from the Parasitological Society of southern Africa, Die Suid-Afrikaanse Akademie vir Wetenskap en Kuns, and the Department of Zoology at UJ.

This thesis examined aspects of the biology of the crustacean Subclass Branchiura. A review of the systematics, the current understanding of biology, and the distribution of all known species is presented. This condensed retrospect of Branchiura recounts aspects of the anatomy, physiology, host–parasite interactions and phylogeny, and identifies aspects that require further investigation. Distribution tables present evidence of the confusion in taxonomy, especially in the genus *Argulus*. The candidate investigated the reproductive biology of *Chonopeltis australis* Boxshall, 1976 and life stages were described using light and scanning electron microscopy. A description of the female reproductive system, oogenesis and egg laying is presented. Furthermore, a description of the male reproductive system and sperm transfer via a spermatophore is described for the first time. The second part of this study involved the description of a new Amazonian species of the genus *Dipteropeltis*, *D. campanaformis* using light as well as scanning electron microscopy. The work has been presented at four national and two international conferences and two papers have been published in international peer-reviewed journals. The review has been accepted as a monograph that will be published in book format.

Supervisor: Prof A Avenant-Oldewage



Parshotam, Heena (PhD)

Heena Parshotam was born and raised in Johannesburg. She matriculated from the Hill High School in 1999. She completed her diploma in Analytical Chemistry in 2002 at the former Technikon Witwatersrand and received the Merck award for best overall student. She completed her B Tech degree in 2003 and her M Tech degree in 2006 at the University of Johannesburg. In 2008 she moved to Eskom where she currently works as a senior chemist in the Applied Chemistry & Microbiology section.

Ms Parshotam's research involved the investigation of cooling water chemistry at Eskom's power stations. She investigated the influence of physicochemical parameters on alkaline earth metals' precipitation potentials. This research project is vital to Eskom's power generation which has cost implications on the maintenance of the cooling water pipes. The cooling water system is compromised when scale builds up in the condenser tubes. In this project studies were conducted using various raw water sources that feed into the cooling water system. Analysis of calcium and magnesium (the main cause of scale formation) including other physicochemical parameters in the water, were carried out using various analytical techniques. Results obtained when experimental data was subjected to Visual MINTEQ and PHREEQC modeling programs, showed no difference in metal-organic complexes present in the investigated water systems. The saturation index values obtained, confirmed the scaling patterns to be similar. However, seasonal variation had an impact on the magnitude of the scaling in the condenser tubes, with winter water samples having a lower scaling probability relative to summer. The results of the study have been presented at two international conferences and has been published in two international journals. Two other papers have been submitted.

Supervisor: Prof JC Ngila

Co-supervisor: Prof SB Mishra (University of South Africa)



Ross, Mathew James (PhD)

Mathew Ross was born in 1978 and raised in Randfontein. He matriculated from Randfontein High School in 1996, and enrolled for a BSc (Biological Science) at the Rand Afrikaans University in 1998. He subsequently completed his BSc Honours degree in Aquatic Health in 2001. He registered for a PhD degree in Aquatic Health in 2005. Together with his wife, Dr Tahla Ross, they co-founded EnviRoss CC in 2007, which is an environmental specialist consulting company.

The candidate's research focused on determining the hydraulic limits within a fishway that would best cater for the requirements of various fish species in order to improve on ecological efficiency of fishways. This would ultimately allow for greater longitudinal connectivity of riverine habitat, enhanced migrational movement of fish and improved overall ecological functioning of this habitat. Manipulation of the hydraulic conditions within the fishway channel through altering the channel gradient and flow-through rates allowed for the determination of the limits of swimming abilities of a variety of fish species. Variations of the standard vertical slot fishway design were also tested under a controlled environment in an effort to enhance functionality of the fishway. This experimental model was up-scaled and tested under field conditions where it was placed at migratory barrier sites along the Sabie and Vaal Rivers. The results allowed for the refinement of a more ecologically sound fishway design that was easier and also more economical to construct. The design concepts that emerged from this project were incorporated into a fishway that was constructed at a new flow gauging weir on the Orange River by the Department of Water Affairs and Sanitation. Current monitoring and preliminary results indicate that this fishway is ecologically functional. Refinements of hydraulic parameters of fishways to better cater for the fish species that are to utilise them does, however, remain a novel research concept within South Africa. Three papers on this work have been published in peer-reviewed journals.

Supervisor: Prof V Wepener



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