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**FACULTY OF COMMERCE  
THE GRADUATE SCHOOL OF BUSINESS AND  
SELECTED COMMERCE POSTGRADUATES**

**ALL OTHER FACULTIES DOCTOR OF PHILOSOPHY**

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**ORDER OF PROCEEDINGS**

Academic Procession.

*(The congregation is requested to stand as the procession enters the hall)*

The Presiding Officer will constitute the congregation.

The National Anthem.

The University Dedication will be read by a member of the SRC.

Musical Item.

Welcome by the Master of Ceremonies.

The graduands and diplomates will be presented to the Presiding Officer by the Acting Director of the Graduate School of Business and the Deans of the Faculties.

The Presiding Officer will congratulate the new graduates and diplomates.

The Master of Ceremonies will make closing announcements and invite the congregation to stand.

The Presiding Officer will dissolve the congregation.

The procession, including the new graduates and diplomates, will leave the hall.

*(The congregation is requested to remain standing until the procession has left the hall.)*

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## NATIONAL ANTHEM

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Nkosi sikelel' iAfrika  
Maluphakanyisw' uphondolwayo,  
Yizwa imithandazo yethu,  
Nkosi sikelela, thina lusapho lwayo.

Morena boloka etjhaba sa heso,  
O fedise dintwa la matshwenyeho,  
O se boloke,  
O se boloke setjhaba sa heso,  
Setjhaba sa South Afrika – South Afrika.

Uit die blou van onse hemel,  
Uit die diepte van ons see,  
Oor ons ewige gebergtes,  
Waar die kranse antwoord gee,

Sounds the call to come together,  
And united we shall stand,  
Let us live and strive for freedom,  
In South Africa our land.

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## **DISTINCTIONS IN THE FACULTY OF COMMERCE**

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The BCom and BBusSc degrees may be awarded with distinction

in a subject, where the student achieves a weighted average of at least 75% in a group of courses in, or related to, that subject (in some cases the average mark required is 80%)

in the degree, where the student achieves a weighted average of 80% in all courses.

Honours degrees are awarded by class of pass (first, second class division one, second class division two, or third).

Master's degrees may be awarded with distinction

for the dissertation, (in a coursework and dissertation curriculum) for especially meritorious work, the dissertation being in the first class (at least 75%) and at least 70% for the coursework depending on the degree.

in the degree, for especially meritorious work, where the average is at least 75% and no component is below 70%.

**NAMES OF GRADUANDS/  
DIPLOMATES**

An asterisk \* denotes that the degree or diploma will be awarded in the absence of the candidate.

**1. FACULTY OF COMMERCE  
(GRADUATE SCHOOL  
OF BUSINESS)**

*Acting Director of Graduate School of  
Business: Associate Professor  
K Sewchurran*

**POSTGRADUATE DIPLOMA IN  
BUSINESS ADMINISTRATION**

Nomandla Mdleleni

**POSTGRADUATE DIPLOMA IN  
MANAGEMENT PRACTICE**

Yasmin Abrahams (with distinction)  
Fasiega Benjamin  
Candice Theresa Bosman  
Mogamad Shaamiel Cader  
George Alfred Cave

\*Wei-Chih Chen (with distinction)

Prince Chirwa  
Byron Granville Christie (with  
distinction)

Keri Davids (with distinction)  
Mcitheki Johannes Dlamini  
Uriel Filiba (with distinction)

\*Kirsten Jade Francis

Gary Fritz  
\*Rebaone Francis Gaelejwe  
Mercia Reminda Sophia Gawas

\*Sabihah Haq

Istiaaq Hoosen  
Hilma Nampolo Ihuhua  
Tamsyn Morag Jardine  
Larna Jodamus

\*Maximilian Jonas Rudolf Kahlfeldt  
(with distinction)

Lekulana Emmanuel Kolobe  
Gavyn Letley (with distinction)  
Nicollen Kgothatso Malatji  
Gcobisa Maninjwa

Olwen Amanda Lee-Anne Manuel  
Teboho Michael Maphakisa  
Tenele Lovedalea Masina

\*Melissa Thandekile Mbazo  
Rirhandzu Beauty Mhlongo  
Christopher Phumlani Mkhize

\*Eneida Parmanande Monteiro  
Tatenda Shungu Motsi  
Vuyiseka Cornelia Mpongoshe (with  
distinction)

\*Seshni Naicker  
Xhanti-Lomzi Nesi  
Boipelo Mapitso Ngakane  
Mamela Ngubo

Mpumelelo Godfrey Nhlangulela  
Jabulile Luleka Nokwe  
Babalwa Phiwokuhle Nyangeni  
Eric Kwakye Obeng  
Mellanie Ann Petersen  
Zanele Joy Rani  
Benedict Douglas Rollinson  
Bianca Joy Rousseau  
Olivier Kamong Rumb

\*Gaurav Sharma (with distinction)

Petrus Shipanga  
Emanuela Lisangela Falcao Da Silva  
Marc Peter Stowe (with distinction)  
Annah Nthabiseng Thekiso  
Andre Marshall Thops  
Zukile Tom  
Naboth Tangenimwene Uunona  
Lizelle Van Der Berg  
Albertus Van Der Westhuizen  
Barvelly Desiree Von Luttichou  
Karen Jean Wilson (with distinction)

**2. FACULTY OF COMMERCE**

*Acting Dean: Professor K Rajaratnam*

**DEGREE OF BACHELOR OF  
COMMERCE HONOURS**

*In Financial Analysis &  
Portfolio Management:*  
\*Sharmaine Chihuri

*In Information Systems:*  
Azhar Rishaad Aboobaker  
Zulfikar Allie  
Marco Robin Daniels  
Daniel Shaun Jankelow  
Reobone Mokhasinyane

\*Ingamam Mpinda

*In Statistics:*  
Flavia Taonga Natasha Mulenga

*In Taxation:*  
Yolokazi Quwe  
Ebrahiem Sakier

**DEGREE OF MASTER  
OF COMMERCE**

*In Applied Economics:*

\*Patricia Chirwa  
Lindokuhle Njozela

*In Economic Development:*

Anna Valentinova Filipova (with  
distinction in the dissertation and  
the degree with distinction)

*In Finance:*

Ian Edmond Kuria Kamande

*In Financial & Risk Management:*

Sithembiso Moses Garane

*In Financial Management:*

\*Cameron Daniel Smith (with distinction  
in the dissertation and the degree  
with distinction)

*In Information Systems:*

Faghmie Jamiel Davids  
Vaughan Scott Henriques  
Izienne Preston Loriston  
Evode Ndayishimiye  
Muhammad Ameer Osman (with  
distinction in the dissertation)

*In International Taxation:*

Daniel Christiaan Hendrik Du Toit  
Mbulelo Kroqwana

*In Investment Management:*

Kevin Van Staden

*In Organisational Psychology:*

Tamlyn Ann Schwartz (with distinction  
in the dissertation and the degree  
with distinction)

**DEGREE OF MASTER OF  
PHILOSOPHY**

*In Demography:*

Benson John (with distinction in the  
dissertation)

\*Presley Ncube

*In Development Policy and Practice:*

\*Geoffrey Atim Opio

*In Mathematical Finance:*

Lloyd Stanley Balshaw

### 3. FACULTY OF COMMERCE (GRADUATE SCHOOL OF BUSINESS)

*Acting Director of Graduate School of  
Business: Associate Professor  
K Sewchurran*

#### DEGREE OF MASTER OF BUSINESS ADMINISTRATION

Eshaam Abdurahman  
Simbarashe Cleopas Africa  
Althea Madge Allen  
\*Ryan Anthony Anderson (with  
distinction)  
Bashierah Arnold  
\*Fred Joseph Bailey  
\*Olivia-Jane Burton Barbour  
Andrew John Beard  
\*Isaac Adomako Boamah  
\*Gerhardus Bouwer  
Sarah Lynn Boyd  
\*Adriaan Cornelius Brand  
\*D'Leon Burger  
Simon David Capon (with distinction)  
Tarryn Lee Carolus (with distinction)  
Claire Danielle Carson (with  
distinction)  
\*Nicole Casaletti  
Michael James Chandler  
\*Bongani Zebedia Chidakwa  
\*McDonald Chigumba  
\*Rudo Chipanga  
Christo Nicholas Christodoulou  
\*Alexander Silas Dickie  
\*Nontsikelelo Dinga  
\*Christine Danielle Dipietro  
Donovan Du Plooy  
\*Earle John Du Plooy  
Loren Jean Du Preez (with distinction)  
\*Michael Vincent Earp  
Joe Donald Ekstein (with distinction)  
\*Henry Chigozie Enumah  
Gerrit Joseph Fourie  
Alpana Goolab  
\*Victor Louis Gouws  
Shilan Govender (with distinction)  
Tamira Gunzburg

Sarah Ann Haried  
Mogamat Kaashief Hartley  
Tsitsi Rutendo Hatendi  
Andrew Michael Hickson-Mahony  
(with distinction)  
Marike Jeanette Hoffmann  
\*Kirsten Fawn Hornby (with  
distinction)  
Mutsa Ruby Karimakwenda (with  
distinction)  
\*Jehaan Ara Karim Sherali Kassam  
Linda Mfundo Khuzwayo (with  
distinction)  
Vanessa Kerubo Kimoro  
Lauren Ann King  
\*Sian Wanjiru Kiri  
\*Stephen Michael Kitching (with  
distinction)  
Kira Koopman (with distinction)  
Tintswalo Mumzo Kubayi  
Nicholas Willem Kuilman  
Matthew John Andrew Le Cordeur  
Keenin Carlo Lesch  
David Walter Leslie (with distinction)  
Walter Henry Sceales Lindop (with  
distinction)  
Eladio Torrie Lin Seu  
Lian Lubbe  
Thembumenzi Shisizwe Lukhele  
Clint Deon Maggott  
Hajra Mahomed-Tajbhai (with  
distinction)  
\*Loreen Helga Makwanya  
Garth Denzil Malan  
Thiam Abrie Marais  
\*Ian Alfred Marvin  
Chibundu Ihechimere Mbagwu  
Grant Mcgilvray (with distinction)  
Mauro Erasmo Mela (with distinction)  
Hans Werner Mennen (with distinction)  
Jitendra Mishra  
Diane Elizabeth Moalem (with  
distinction)  
\*Tapiwanashe Michael Mugore  
Fredrick Kaputo Mulenga  
\*Frederick Johannes Muller  
Peter Munthali (with distinction)  
Josephine Leonard Mushi  
Alec Baile-Batlile Mutlane  
\*Yuichi Nakamura  
Nokuthaba Ngwenya  
Sonwabe Nongogo  
Samson Nzombe  
Luke Joseph Lehrer O'Brien  
Oliver Obrien (with distinction)  
Adriaan Izak Odendaal (with  
distinction)  
Dominic Edward Ohara

Paul Charles Olivier  
\*Laura Bolling Palmer  
Suleman Patel  
Petrus Jacobus Pienaar  
Garth Pillay  
Lee-Ann Pillay  
\*Yoryos Ponnighaus (with distinction)  
\*Marthinus Jacobus Potgieter  
\*Michael-Philip Andre Powell  
Salika Rafiq  
\*Peter James Ransom  
Mdungaze Muzila Rebelo  
David Paul Redelinghuys  
James Themba Reid  
Estee Roodt  
\*Anthony Charles Ryba  
\*Kristin Elizabeth Sadler  
\*Thembekile Given Salman  
Marcel Garth Sarjoo  
\*Travis Eaton Scadron  
\*Jacobus Christoffel Jacques Schoombee  
\*Candice Carly Schwartz  
\*Shane Michael Sebastiao  
Akshay Seebaluck  
Amit Sharma  
Fezile Sidubi  
Niksha Singh  
Christiaan Walter Smit  
\*Lerisia Smit (with distinction)  
\*Tamryn Dale Smit (with distinction)  
Julian Allister Sparks  
Alix Jane Staniland  
Darren Edward Stegmann  
Donald Stewart  
\*Viktor Hristov Terziev (with distinction)  
Londonani Tshilidzi Tshatsinde  
Jacobus Petrus Van Schalkwyk  
Jacobus Andries Van Zyl  
Oliver James Vergo (with distinction)  
Graeme Francis Wiley  
Jason Erich James Williamson  
Colin Rylott Wilson  
Musa Ally Zuma

*In Executive Management:*

Haroon Ahmed Abrahams (with  
distinction)  
Jonathan Edward Aggett (with  
distinction)  
Ruffin Mombilo Asuka  
Xanti Mlungisi Bam  
David John Bennett (with distinction)  
Alexander Richard Burn  
Andries Francois De Wet  
Fortune Yewukayi Gamanya (with  
distinction)  
Asanda Gidana  
Yashodhan Govender

\*Anton Sergeevich Gulichev  
 Ian Gerald Haddon (with distinction)  
 Ismail Shaikh Latiff Hendricks (with distinction)  
 Boniswa Debbie Hene  
 Barbara Alice Ikin  
 Lionora Kamba  
 Eliane Edwige Blanche Kanga  
 Mxolisi Khutama  
 Cheryljane Kujenga (with distinction)  
 Kedibone Frans Mangena (with distinction)  
 Blessing Thabani Mate (with distinction)  
 Siphokazi Patience Mngxunyeni  
 Zanele Cresencia Nxumalo  
 Stanford Nyamuzihwa  
 Mosley Tambaoga Rushesha  
 Margaretha Maria Symmonds (with distinction)  
 Jerome Nathan Thomas  
 Calvin Donald Thompson  
 \*Mariska Van Aswegen (with distinction)  
 Johannes van den Heever  
 Gerhard Van Der Walt  
 Randall Rowen Wilson  
 \*Luciano Fabio Zaina

DEGREE OF MASTER OF  
 COMMERCE IN  
 DEVELOPMENT FINANCE

Kirsten Eubertha Amsterdam (with distinction in the dissertation)  
 Mary-Ann Afua Boakye (with distinction in the dissertation and the degree with distinction)  
 \*Kudzai Chigiji (with distinction in the dissertation)  
 John Wiseman Chiromo  
 \*Howard Choga  
 Aune Nyanyukweni Emvula  
 Peter Michael Finlay  
 Anthony Goslar (with distinction in the dissertation and the degree with distinction)  
 Sharlene Govender  
 Lithalethu Gqoboka  
 Tayina Kamanga (with distinction)  
 Christopher Ngolwe Kambole (with distinction in the dissertation)  
 Sharon Takudzwa Karimatsenga  
 Michelle Diana Mushieni Maloba  
 Simon Hlomayi Marandu  
 Nolitha Mpho Matsolo

\*Henry Roystan Mcgregor (with distinction in the dissertation)  
 Thulile Pretty Mkhwanazi  
 Molatelo Isabella Motsepe (with distinction in the dissertation)  
 Onesimo Mazai Moyo (with distinction in the dissertation)  
 Tawanda Muchinguri (with distinction)  
 Clive Mutale Mulumba (with distinction in the dissertation)  
 Betty Murambadoro  
 Julius Nyerere Namoloh (with distinction in the dissertation)  
 Leonard Motseakgosi Lenny Nkotsoe (with distinction in the dissertation)  
 Patient Mukuta Nzonde  
 \*Ramon Pretorius  
 Ezekiel Chisenga Sekele  
 Nokuthula Selamolela  
 Ngwanatau Tannies Seroka (with distinction in the dissertation)  
 Mmathabo Innocentia Sesele  
 Michael Sibanda (with distinction in the dissertation)  
 \*Mupangi Sithole  
 Keshal Sookha  
 Debra-Lee Swanepoel  
 \*Tsepo Ntsoane Taole  
 Lorence Uatiewa Thabo Tjonga  
 Isaac Wahito (with distinction)

DEGREE OF MASTER  
 OF PHILOSOPHY

*In Inclusive Innovation:*  
 Brian Gachichio Karanja (with distinction)  
 Sinqobile Sichelesile Ndlovu (with distinction)  
 Brett David Utian

4. FACULTY OF SCIENCE

*Acting Dean: Professor S Bourne*

DEGREE OF MASTER OF SCIENCE

*In Conservation Biology:*  
 \*Olli Petteri Hyvärinen (with distinction)

DEGREE OF DOCTOR  
 OF PHILOSOPHY

*In Astronomy:*

\*Preshanth Jagannathan

Thesis Title: *Full Mueller imaging: direction dependent corrections in polarimetric radio imaging*

Preshanth Jagannathan completed his BSc Physics degree from Loyola College, India in 2005 and his MSc in Space Sciences from University of Pune, India in 2007. He received his MSc in Astrophysics from the University of Calgary, Canada in 2014 and joined UCT for his PhD studies in 2015.

Radio interferometric telescope arrays allow astronomers to image the fine detail of the radio emission from space objects. Such array telescopes, like the MeerKAT array being constructed in South Africa, provides better imaging resolution than any single telescope can ever offer. However, each individual telescope in the array introduces a direction dependent error which alters the incoming signal as a function of time, radiation frequency, and polarization. Preshanth Jagannathan's thesis has quantified the induced error on polarimetric imaging as a function of time and frequency and has developed an algorithm to correct for them called the Full Mueller AW-Projection algorithm. This algorithm will be critical for the next generation of radio telescopes, such as the VLA, MeerKAT, and the SKA to make accurate images of the polarized radio emission from the universe.

*Supervisor:* Professor AR Taylor (Astronomy)

*Co-supervisor:* Dr S Bhatnagar (National Radio Astronomy Observatory (NRAO))

Rajin Anand Ramphul

Thesis Title: *Characterising star forming and Luminous Infrared Galaxies with the Southern African Large Telescope (SALT)*

Rajin Ramphul obtained his bachelor's degree in Physics at the University of Mauritius, before moving to South Africa for a BSc(Hons) in Astrophysics. He joined the Department of Astronomy at UCT in 2011 for his master's studies and started his doctorate in 2013.

Luminous Infrared Galaxies (LIRGs) are strongly interacting galaxies that were dominant when the universe was younger, driving the evolution of galaxies. Rajin Ramphul's thesis focuses on deriving the age and metal content of a representative sample of LIRGs in the nearby universe. He uses data-cleaning techniques to obtain high quality spectroscopic data from the SALT telescope. He then studies the properties of stars and gas in LIRGs by fitting the galaxy data with existing models. The ages of LIRGs are found to be extremely young, as expected, but their metal content comes out higher than previous results. Further, he investigates the radial profile of the age and metal content of the sample of galaxies. He finds a negative gradient for the metal content, which is consistent with the view these galaxies form the inside towards the out.

*Supervisor:* A/Professor K van der Heyden (Astronomy)

*Co-supervisor:* Dr P Vaisanen (Astronomy)

*In Biological Sciences:*

Jannes Landschoff

Thesis Title: *Contributions to the taxonomy of South African hermit crabs (Crustacea: Decapoda: Paguroidea) – integrating microCT scanning and barcoding*

Jannes Landschoff holds a BSc from Kiel University, Germany, and joined the Biological Sciences Department at UCT in 2013, obtaining his Masters in Applied Marine Science in 2014. His passions for photography and the diversity of marine life motivated him to pursue a

PhD documenting this charismatic animal group.

Jannes Landschoff's thesis focuses on the taxonomy of the hermit crabs of South Africa, an important but understudied group of marine invertebrates. He describes three species as new to science, one from each of the three largest families. In doing this, he integrates traditional taxonomic descriptions with both genetic tools and new micro-computed tomography scanning that generates 3D-animated visualisations. Furthermore, he creates a genetic barcoding library that he uses to test how efficient the genetic data are for identifying hermit crabs by comparing their DNA. Finally, he revises the South African fauna as a whole, expanding it to now contain 72 species. He also provides colour photographs for 51 of these species, the majority of which are photographically documented for the first time. His illustrated taxonomic account will greatly facilitate accurate identification in the field. Overall this thesis revolutionises the state of knowledge of the South African hermit crab fauna.

*Supervisor:* Emeritus Professor CL Griffiths (Biological Sciences)

*In Botany:*

Nkosinathi Meshack Dlodlu

Thesis Title: *Edaphic factors and rhizobia influence the distribution of legumes (Fabaceae) in the Core Cape Subregion of South Africa*

Nkosinathi Dlodlu obtained a BSc in Biology and Chemistry from the University of Swaziland in 2005. He received his BSc(Hons) and MSc in Botany at UCT in 2007 and 2010, respectively, and began his PhD studies in 2013.

Nkosinathi Dlodlu's thesis investigates the drivers of legume distribution in the Core Cape Subregion (CCR) of South Africa. He analyses chemical and physical properties of soils (edaphic factors) occupied by legume species assemblages in the Cape Peninsula and determines their influence on the distribution of nitrogen-fixing

bacteria (rhizobia). He also studies the extent of horizontal gene transfer among the various rhizobial species in the CCR. He finds that distinct edaphic habitats harbour discrete legume species assemblages and identifies legume species that are unique to the various edaphic habitats. Moreover, the various rhizobia have varied preferences for pH and soil types, which correlates with the distribution of their legume hosts. He also finds high levels of horizontal gene transfer among the rhizobia, which are unparalleled to their counterparts in other parts of the globe. Thus, edaphic factors and rhizobia have a significant influence on the distribution of legumes in the CCR.

*Supervisor:* A/Professor A M Muasya (Biological Sciences)

*Co-supervisor:* Dr SBM Chimphango (Biological Sciences)

Simon Crispin Power

Thesis Title: *Mechanisms determining the coexistence of open- and closed-canopy biomes*

Simon Power holds a BSc(Hons) and MSc from UCT, both specialising in Botany. His doctoral work emerged from his appreciation of the Cape flora and the unique adaptations many of its species possess to support their survival in an otherwise harsh environment.

Simon Power's thesis aims to establish how open- and closed-canopy biomes, such as fynbos and forest, are able to coexist in the same landscape. The frequent association between species distribution and resource availability led him to explore the relationship between environmental and floristic turnover across biome boundaries in South Africa. Key results include a high turnover in floristic composition paired with an equally steep turnover in the availability of light and nutrients, and the incidence of fire across open-closed boundaries. Using these findings, he investigated the response of forest and fynbos species to changes in resource availability, finding that light and nutrient conditions in forest and fynbos habitats select for contrasting adaptive traits. While trait divergence may

limit fynbos species to their native habitat, plasticity in leaf traits may support forest species, limited colonization of fynbos. The thesis highlights how environmental heterogeneity and contrasting adaptive traits can influence the distribution and coexistence of dissimilar biomes.

*Supervisor:* A/Professor MD Cramer (Biological Sciences)

*Co-supervisors:* A/Professor GA Verboom (Biological Sciences); Emeritus Professor WJ Bond (Biological Sciences)

*In Chemistry:*

Khadijah Tolulope Dauda

Thesis Title: *Metal complexes of anti-tubercular drugs*

Khadijah Tolulope Dauda obtained a BTech degree at the Federal University of Technology Akure, Nigeria and an MSc degree at the University of Lagos. She subsequently registered for PhD studies at UCT, where she investigated metal complexes of a series of anti-tubercular drugs.

Tuberculosis is a global health problem that results in the annual incidence of approximately ten million new cases and two million deaths. It is the leading cause of death by a single treatable infectious disease. An important associated problem is the alarming increase in drug-resistant microbial strains, which hamper effective control of the disease. The solubility and hence permeability and bioavailability of drugs depend on their solution speciation. In her thesis, Khadijah Dauda describes the preparation and physicochemical characterisation of copper, nickel and zinc complexes of a series of anti-tubercular drugs. These complexes proved to have enhanced membrane permeability when compared to the respective native drugs. Her thesis paves the way for the development of new metal-based anti-tubercular drugs.

*Supervisor:* Emeritus Professor MR Caira (Chemistry)

*Co-supervisor:* Emeritus Professor GE Jackson (Chemistry)

Fabrizio Paolo L'abbate

Thesis Title: *Synthesis and investigation of benzimidazole and carbazole  $\beta$ -haematin inhibiting scaffolds with antimalarial activity*

Fabrizio L'abbate holds a BSc and BSc(Hons) degrees in Chemistry from UCT. He began full-time research towards his PhD degree in 2013.

Fabrizio L'abbate's thesis investigates the discovery of benzimidazoles and carbazoles active against formation of  $\beta$ -haematin, the synthetic counterpart of the malarial pigment haemozoin, and malaria parasite growth. For the benzimidazoles, all possible structures that can be synthesized from readily available starting materials are enumerated in silico and ranked using Bayesian statistics based on priors identified by high throughput screening. A series of analogues are synthesized and most are shown to be active against  $\beta$ -haematin formation and parasite growth. These compounds are shown to inhibit haemozoin formation in the malaria parasite cell. He goes on to show that the strength of  $\beta$ -haematin inhibition can be predicted in silico using molecular docking methods with the crystal surface. The carbazoles are shown to be active, but do not inhibit haemozoin formation in the cell. The work represents a substantial advance in our understanding of the mechanism of action of this class of antimalarial.

*Supervisor:* Professor TJ Egan (Chemistry)

*Co-supervisor:* Professor R Hunter (Chemistry)

Shakeela Sayed

Thesis Title: *Synthesis of 6-Deoxy-6-Amino Chitosan and applications thereof*

Shakeela Sayed completed her BSc, BSc(Hons) and MSc in Chemistry at UCT.

Shakeela Sayed's thesis addresses the synthesis of 6-deoxy-6-amino chitosan and applications thereof. This polymer is derived from chitin, the second most abundant biopolymer produced in nature after cellulose, and which is typically obtained from seafood waste, of which South Africa has an

abundance. Chitin and its derivative chitosan have many appealing properties, such as biodegradability, antimicrobial activity and low cost. These polymers have been used in industry in areas such as the textile sector, agriculture, the food sector and in biomedical applications. However, one limitation to the use of these polymers is their insolubility in commonly used solvents. Therefore, this research looked at a structural modification to improve water-solubility. After the successful development of this water-soluble polymer, various applications were investigated. These included the use of the polymer as an antimicrobial nanofibre together with silver nanoparticles and as an antifungal against a fungus causative of rot in maize and food spoilage in general. A further application included the use of the polymer as a catalyst support for vitamin A in the conversion of amino acids into  $\alpha$ -keto acids, which serve as the starting material for a variety of valuable products, including pharmaceuticals.

*Supervisor:* Dr A Jardine (Chemistry)

*In Computer Science:*

Mufudzi Anesu Chapman Marufu

Thesis Title: *Robust and cheating-resilient power auctioning on resource constrained micro-grids*

Mufudzi Marufu holds BSc and Special Honours degrees in Computer Science from the University of Zimbabwe. He also holds a MSc degree in Computer Science from the University of Fort Hare. He joined the Department of Computer Science at UCT in 2014 for his doctoral studies.

Mufudzi Marufu's thesis focuses on the design and evaluation of a robust and cheating-resilient auctioning algorithm for power allocation in resource constrained smart micro-grids.

He then extends the classic Continuous Double Auction (CDA) scheme to enable decentralised auctioning by integrating a token-based mutual-exclusion (MUTEX) distributive primitive. He then enhances the CDA scheme to handle fail-stop and some Byzantine type faults of components in order to guarantee continued auctioning while maintaining a reasonable performance. He further proposes a decentralised consumption



scheduling scheme integration that complements the auctioning scheme in guaranteeing successful power allocation. He then investigates the issue of cheating. He designs a framework that he uses to design novel cheating attacks and guide development of a mitigation scheme. To address the attacks, he designs a novel exception handling-inspired mitigation scheme. The resulting CDA algorithm guarantees robustness, cheating resilience at a reasonable performance, which is significant for constrained micro-grid applications.

*Supervisor:* Professor T Meyer  
(Computer Science)

Yamiko Joseph Msosa  
*Thesis Title: Modelling evolving clinical practice guidelines: a case of Malawi*

Yamiko Msosa completed his BSc(Hons) and MSc qualifications at the Universities of Greenwich and Essex respectively. He began full-time study towards his PhD in 2014. Before joining UCT, he worked in the health technology industry, developing electronic medical record systems in Malawi.

Yamiko Msosa's thesis reports a novel clinical guideline modelling framework for low- and middle- income countries. He went on to investigate how clinical guidelines are formalized for clinical decision support in under-privileged settings. This allowed him to propose a formal clinical guideline modelling environment, using model-driven engineering techniques, that can be used to successfully formalize clinical guidelines in such settings. Finally, he compared the novel modelling framework with the existing clinical guideline modelling standard and found that it performed better. These findings will be useful in future designs of sustainable clinical decision support systems for under-privileged settings.

*Supervisor:* Dr CM Keet (Computer Science)  
*Co-supervisor:* Dr M Densmore (Computer Science)

*In Conservation Biology:*

Petra Brigitte Holden  
*Thesis Title: A pluralistic, socio-ecological approach to understand the long-term impact of mountain conservation: a counterfactual and place-based assessment of social, ecological and hydrological change in the Groot Winterhoek Mountains of the Cape Floristic Region*

Petra Holden completed her BSc(Hons) and MSc qualifications at UCT. Before starting her PhD in 2014, she worked on climate change projects in several African and Asian countries.

Petra Holden's thesis assesses the conservation impact of the Groot Winterhoek protected area, in the Western Cape, by investigating change in the surrounding environment and local community. She uses social and natural science methods and streamflow modelling to track changes in land use, vegetation, fire and water supply over ~50 years. Land use in the area has changed from subsistence farming, including extensive livestock grazing, to specialised agriculture, personal nature-based conservation and eco-tourism. Vegetation cover has improved because of these changes, but fires have become less patchy and more widespread, reducing streamflow during dry periods. Water supply from the protected area is greater and more reliable than from surrounding farms, where dams and cultivation have negatively affected streamflow. Landowners value the conservation area for the water it supplies, for the protection it gives to animals and plants and for the benefits it will provide to future generations.

*Supervisor:* Professor T Hoffman (Biological Sciences)  
*Co-supervisors:* A/Professor F Eckardt (Environmental and Geographical Science); Professor M New (Environmental and Geographical Science); A/Professor J Smit (Agriculture, Planning and Geomatics); Professor M Visser (Economics); and A/Professor G Ziervogel (Environmental and Geographical Science)

*In Environmental & Geographical Science:*

Johanna Regina Catherina Von Holdt  
*Thesis Title: Aeolian dust emission dynamics across spatial scales: landforms, controls and characteristics*

Johanna von Holdt holds a BSc from UNISA, and completed her MPhil in 2013 at UCT. Before joining UCT she worked in research laboratories for the Texas Transportation Institute in College Station, USA and the CSIR in Pretoria.

Mineral dust from drylands affects local air quality and plays a role in global biogeochemical cycles. Desert surface characteristics and meteorological conditions result in dust emission being complex in both space and time. Johanna von Holdt's thesis identified major dust emitting landforms in the Central Namib, using a 20-year record of high-resolution satellite imagery. Dry river terraces and deltas proved to be the most emissive sources and were particularly vulnerable to human interference. A portable wind tunnel was used to determine surface emission thresholds for various landform types by establishing controlling factors such as grain size, crustal strength, moisture and mineral content. Accounting for local-scale surface variability is critical to our understanding of dust emitting processes. This study also identified the characteristics of the dust emitted from these highly emissive landforms with an individual particle micron scale auto-SEM (QEMSCAN) analysis. Such data can improve global dust emission models.

*Supervisor:* A/Professor F Eckardt (Environmental & Geographical Science)  
*Co-supervisors:* Professor G Wiggs (Geography and the Environment, University of Oxford); Dr M Hipondoka (Geography, History and Environmental Studies, University of Namibia)

*In Molecular and Cell Biology:*

Alexis Joanna Bick

Thesis Title: *Cross talk between the glucocorticoid receptor and the progesterone receptor in modulation of progestin responses and HIV-1 infection*

Alexis Bick holds a BSc (Biochemistry and Genetics), BSc(Med)(Hons) and MSc(Med) (Medical Biochemistry), all with distinctions, from UCT. She began full-time study towards her PhD in 2012.

Alexis Bick's thesis investigates HIV-1 infection in cultured human peripheral blood cells stimulated with MPA, the active compound of the most commonly used injectable contraceptive, compared to hormones representing the luteal phase of the menstrual cycle. The results showed that MPA and luteal phase hormones both increased HIV-1 infection, but that MPA, unlike luteal phase hormones, increased frequencies of target immune cells and expression of the HIV-1 co-receptor CCR5. This research provides insight into some biological mechanisms by which MPA can increase HIV-1 infection. Alexis Bick's thesis also showed that changing the relative levels of the glucocorticoid and progesterone receptors, using molecular manipulation in human cervical cell lines, changed HIV-1 infection and expression of key immunomodulatory genes. This research has implications for both MPA users and non-users, where changing receptor levels in the cervix, the major site for heterosexual HIV-1 transmission, may affect HIV-1 acquisition.

*Supervisor:* Professor J Hapgood (Molecular and Cell Biology)

*Co-supervisor:* Dr C Avenant (Molecular and Cell Biology)

\*Alfred Ochieng Mitema

Thesis Title: *Molecular and bio-analytical characterisation as a means to understand genetic diversity within Kenyan Aspergillus flavus strains*

Alfred Mitema has a BPhil in Applied Biology from the Technical University of Kenya and holds an academic position in the School of Biological Science,

University of Nairobi. He joined the Department of Molecular and Cell Biology in 2013 as a master's student, before upgrading to a PhD in 2015.

Alfred Mitema's thesis focuses on *Aspergillus flavus* strains isolated from maize kernels collected from different climatic regions of Kenya. *A. flavus* does not only reduce maize yield, but can produce aflatoxins that negatively impacts human and animal health. The genetic diversity among the isolates was examined by characterising the strains according to phenotype, vegetative compatibility group and molecular systematics. Aflatoxin production was assessed by measuring expression of aflatoxin biosynthesis genes and detecting and quantifying aflatoxins using bioanalytical techniques. The influence of the maize line on *A. flavus* infection and aflatoxin production was examined together with in vitro biocontrol of an aflatoxigenic isolate. The findings showed distinct differences in the genetic diversity and distribution of the *A. flavus* isolates, with the KDVI maize line more susceptible to infection. Importantly, atoxigenic *A. flavus* isolates from these regions could be used as the basis of a biocontrol strategy to mitigate aflatoxin production.

*Supervisor:* Dr SM Rafudeen (Molecular & Cell Biology)

*Co-supervisor:* Professor S Okoth (School of Biological Sciences, University of Nairobi)

*In Ocean & Atmosphere Science:*

Katherine Alessandra Hutchinson

Thesis Title: *Seasonality of the Agulhas Current with respect to near- and far-field winds*

Katherine Hutchinson obtained a co-badged MSc with distinction between UCT and the Université de Bretagne Occidentale, France in 2013. She began her PhD in 2015, in collaboration with the University of Miami and the French Institute of Research and Development.

Katherine Hutchinson's thesis explored the seasonal variations of the Agulhas Current. The Agulhas Current plays a critical role in local and global

ocean circulation and climate regulation, yet the mechanisms that determine its seasonal cycle are poorly understood. Her study is the first to use in-situ observations, satellite measurements, and idealized ocean models. This research revealed that the propagation speeds of Rossby waves have a strong influence on seasonality at the western boundary, with near-field winds having a dominant contribution to the seasonal cycle of volume transport. Wind stress curl excited anomalies from far-afield were shown to dissipate before reaching the western boundary, due to destructive interference with overlying wind stress. Basin-wide winds are important, as they set the background circulation pattern. Her study demonstrates the decisive role of first order baroclinic waves in communicating wind stress signals from near-field winds on the seasonal phasing of the Agulhas Current.

*Supervisor:* A/Professor I Ansong (Oceanography)

*Co-supervisors:* A/Professor J Hermes (Oceanography and the South African Environmental Observations Network); Professor L Beal (University of Miami); Dr P Penven (l'Institut de Recherche pour le Développement)

\*Georges Noel Tiersmondo Longandjo

Thesis Title: *The hydroclimate variability of Central Africa: seasonal cycle, mechanisms, teleconnections and impacts on neighbouring regions*

Georges-Noel Tiersmondo Longandjo holds a BSc(Hons) in Physics from the University of Kinshasa, Democratic Republic of Congo and an MSc in Meteorology from the Mohammed V University, Morocco. Before joining UCT, he worked as a lecturer in the Democratic Republic of Congo.

Georges-Noel Tiersmondo Longandjo's thesis sheds light on what drives Central Africa rainfall variability at seasonal and interannual timescale. Central Africa is, climatologically speaking, a poorly studied region and is considered as a knowledge gap in the understanding of tropical climate. Georges-Noel

Tiersmondo Longandjo highlights the existence of a dominant cyclonic and quasi-permanent pattern in the mid and lower troposphere that drives the atmospheric large scale circulation and its associated water vapour transport, namely the Central Africa Low. In addition, a shallow zonal overturning circulation, namely the Congo Basin Cell, is driven by a near-surface land-ocean thermal contrast between the warm Central Africa landmass and relatively colder Atlantic Ocean. Further investigation outlines the Central Africa Low and land-ocean thermal contrasts as the main drivers of Central Africa rainfall, through the control of African easterly jets (AEJ) and the strength and width of Congo Basin Cell.

*Supervisor:* Professor Mathieu Rouault (Oceanography)

*In Zoology:*

Tinyiko Given Maluleke

Thesis Title: *Geographic variation in the phenotype of an African horseshoe bat species, Rhinolophus damarensis, (Chiroptera: Rhinolophidae)*

Tinyiko Maluleke holds an MSc degree in Biological Sciences from the University of Venda. He has worked as a lecturer at the University of Venda, and also as a Teaching Assistant at UCT from 2007 to 2012.

Tinyiko Maluleke's thesis focuses on the evolution of geographic variation within species. He uses bats as his focal species and employs a multidisciplinary approach to investigate factors responsible for geographic variation within an African bat species that has a wide distribution across southern Africa. He first determined that natural selection, rather than stochastic factors, was responsible for the variation in morphology and echolocation behaviour within his focal species. He then investigated what mediated natural selection and discovered that the main factor driving these differences was adaptation to different environments, particularly differences in climate though their influence on the operational range

over which echolocation acts. Through both traditional linear measurements and the more advanced analyses of shape difference among bat skulls and mandibles using 3-D images, he showed that differences in diet and foraging behaviour within their different habitats were largely responsible for such variation.

*Supervisor:* A/Professor DS Jacobs (Biological Sciences)

*Co-supervisor:* Dr H Winker (Department of Agriculture, Forestry and Fisheries)

## 5. FACULTY OF COMMERCE (GRADUATE SCHOOL OF BUSINESS)

*Acting Director of Graduate School of Business: Associate Professor K Sewchurran*

## DEGREE OF DOCTOR OF PHILOSOPHY

*In Business Administration:*

Kenneth John Davidian

Thesis Title: *Accumulation model processes of human suborbital space transportation industry emergence*

Kenneth Davidian completed his Bachelor of Aeronautical and Astronautical Engineering at Ohio State University in 1983, and his Master of Mechanical Engineering, with an emphasis on the Fluid and Thermal Sciences, from Case Western Reserve University in 1987. He began his doctorate studies at UCT's Graduate School of Business in 2015.

Kenneth Davidian's thesis proposes industry-level processes to investigate how new industries emerge. Due to his background, he uses the suborbital space tourism industry as his research context. He identifies an innovation development model that analyses industries, not as isolated economic systems, but as complex social systems. Kenneth Davidian undertakes historical event analysis on over 600 industry events and uses grounded theory. Through this he extends current theory

from a macroscopic perspective of three interconnected boxes, representing the three main sub-functions within social systems, to propose a more microscopic set of processes. These processes describe industry emergence in greater detail than before, leveraging the powerful concepts of socio-political and cognitive legitimacy, with possible application to the emergence, development, and evolution of industries in Africa.

*Supervisor:* A/Professor R Chivaka (Graduate School of Business)

Mashukudu Hartley Molele

Thesis Title: *Foreign exchange risk exposure, hedging behaviour, and corporate valuations: evidence from South Africa*

Mashukudu Molele holds a BCom and BCom Hons in Econometrics from the University of Johannesburg, an MCom in Economics from the University of Kwazulu-Natal, and an MBA from the University of the Witwatersrand's Graduate School of Business. He joined the Graduate School of Business at UCT in 2016 for his PhD studies.

Mashukudu Molele's thesis focuses on currency risk exposure, corporate currency hedging practices, and their effect on valuations of listed corporations in South Africa. He examines the nature and degree of currency risk exposure of firms using a variety of asset pricing and econometric models. He identifies, based on econometric models, firm-specific factors affecting the decision to hedge against currency risk, using foreign currency derivatives (FCD) and foreign currency denominated debt (FCDD). He further identifies firm-specific factors affecting the extent of usage of FCDD in South Africa. He finds that South African firms are exposed to time-varying and asymmetric currency risk and that corporate currency risk management using foreign currency derivatives and foreign currency denominated debt has no beneficial effects on corporate value.

*Supervisor:* Professor J Mukuddem-Petersen (Graduate School of Business)

Sophie Claude Annick Nguépi Kasse Epse Kengne  
Thesis title: *Securitisation of mortgage loans, regulatory capital arbitrage and bank stability in South Africa: econometric and theoretic Analyses*

Sophie Nguépi Kasse Epse Kengne holds bachelor's and master's degrees in banking and finance from the University of Lille II in France, and an MBA in Banking from the University of London. Before joining the PhD programme at UCT's Graduate School of Business, she was Enterprises relationship manager at a major French bank in Cameroon.

Sophie Nguépi Kasse Epse Kengne's thesis focuses on investigating whether South African banks (SABs) package residential mortgage loans (RML) and sell them – which is securitisation - to circumvent the regulatory capital requirements – which is regulatory arbitrage (RA). She uses ordinary least squares method and finds a negative relation between RML securitised and SABs capital, a positive relation between RML securitised and risk. Both results suggest that RA has taken place while increasing risk. She further estimates the impact of RA on SABs loans expansion, finding that RA triggers loans increase. An additional step employs the two stage least squares method to analyse the influence of RML securitised on SABs stability, finding a negative impact while yielding profits and liquidity. Finally, she uses Agency and Institutional theories to argue that, given the empirical outcomes above, SABs behaviour towards risk is driven by the risk-reward trade-off that could question their well-capitalised position.

*Supervisor:* Professor J Mukuddem-Petersen (Graduate School of Business)

Cyrrill Agnes Walters  
Thesis Title: *Design and validation of a leadership model for South African higher education*

Cyrrill Walters holds a Master of Music from the University of Cape Town, and a Master of Business Administration

(MBA) from Stellenbosch University. She enrolled at the Graduate School of Business in 2014 for her PhD studies. She has worked within the higher education sector for the past 10 years.

Cyrrill Walters's thesis explores the current typology of leadership in South African universities and proposes a conceptual model for leadership based on theories of complexity science and holism, and employs such key concepts as values, personal development, and mechanistic and holistic performance. The research examines the qualities required of those in higher education leadership positions in order for them to meet demands to widen access to education as well as to contribute to the social, cultural, and economic development of South Africa.

*Supervisor:* Professor W Baets (Graduate School of Business)

## 6. FACULTY OF COMMERCE

*Acting Dean:* Professor K Rajaratnam

### DEGREE OF DOCTOR OF PHILOSOPHY

*In Economics:*  
Rebecca Nana Yaa Ayifah  
Thesis Title: *Essays on child labour and schooling in Ghana*

Rebecca Nana Yaa Ayifah holds BA and MPhil degrees in Economics from the University of Ghana, Legon-Ghana. Before joining the School of Economics at UCT for her PhD studies in 2013, she worked with international development organisations, including the UNDP and IFPRI offices in Ghana.

Rebecca Nana Yaa Ayifah's thesis focuses on child labour and schooling in Ghana. She examines the factors that drive parents to send their children to work or to school and finds that poverty and parental education are the main drivers. She also investigates the impact of Ghana's Livelihood Empowerment Against Poverty (LEAP)

cash transfer programme on schooling. She finds that the programme increases hours of school attendance and reduces repetition rates among children, but has no effect on school enrolment and test scores of children. In addition, the LEAP programme is shown to reduce the number of hours that children are in the labour market. Lastly, Rebecca examines the effects of women's decision-making autonomy on child labour and schooling. She finds that when women have more autonomy this increases school enrolment and hours of class attendance, and reduces the incidence and hours of child labour.

*Supervisor:* A/Professor P Piraino (Economics)

Gibson Mudiriza  
Thesis Title: *Regional wage disparities in post-apartheid South Africa: spatial patterns, convergence dynamics, and causes*

Gibson Mudiriza holds a BSc(Hons) in Economics and an MSc in Economics from the University of Zimbabwe. He joined the School of Economics at UCT in 2012 for his PhD studies. Before joining UCT, he worked as an Economist at the Central Bank of Zimbabwe.

Gibson Mudiriza's thesis examines the spatial patterns, convergence dynamics and causes of regional wage disparities in post-apartheid South Africa. To conduct the analysis, he constructs a unique dataset for 354 regions using the 1996, 2001 and 2011 population censuses. Gibson finds that wages differ significantly across regions and are characterised by spatial patterns that suggest the co-existence of new economic geography forces and features of alternative economic theories. Regional wages are shown to have converged over time, but the rate of convergence remains very low and disparities remain high compared to other emerging economies. He finds that regional wage disparities are well-explained by new economic geography forces such as distance to markets, but only after controlling for regional specific factors such as human capital, mineral resource endowments, local climatic

conditions, local unemployment and homeland status. His thesis highlights how differences in access to markets and regional factor endowments exacerbate and constrain regional wage disparities.

*Supervisor:* Professor L Edwards  
(Economics)

*In Information Systems:*

Olufunmilola Deborah Ajumobi

Thesis Title: *Exploring ICT-supported Formal Women's Business Networks (eFWBNs): the case of Kenya and South Africa*

Deborah Ajumobi holds a BSc in Computer Science from Redeemer's University Nigeria. She joined UCT in 2013 for her MCom in Information Systems and proceeded with her PhD studies in 2015.

Deborah Ajumobi's thesis focuses on the nature of ICT-supported formal women's business networks (eFWBNs) in Kenya and South Africa, and how they contribute to the development of women entrepreneurs. eFWBNs are platforms to support women's business skills. However, research that highlights the use of ICTs by women entrepreneurs to stay competitive and in tune with global changes and ICT advancements is sparse. This leaves these networks unguided on how best to leverage ICTs. Deborah Ajumobi's study adopts configurational theory and a mixed methods case study approach to investigate the phenomenon. The study sheds light on the dynamics and complexities eFWBNs and how these contribute to the development of women entrepreneurs. The findings have implications for women entrepreneurs, leaders of eFWBNs, practitioners, government policymakers, and individual or organisational investors looking to support women's business development.

*Supervisor:* Professor M Kyobe  
(Information Systems)

Mohammed Enagi Alhassan

Thesis Title: *Enterprise architecture driven design of an artefact to support strategic Information Technology decision-making of small enterprises in Nigeria and South Africa*

Mohammed Alhassan holds a BTech in Information Technology with distinction from the Federal University of Technology, Minna, and an MSc in Information Management and Business Technology from Loughborough University. He worked in banking, consulting, and academia in the UK and Nigeria before joining UCT in 2015 for full-time PhD research.

Mohammed Alhassan's thesis focuses on how to improve Information Technology (IT) investments of small enterprises in Nigeria and South Africa. The successful leveraging of IT can help small businesses to overcome limited access to resources, infrastructure challenges, lack of access to global markets, and high crime levels. The study investigates the IT decision-making process in small Nigerian and South African enterprises to understand the requirements of small enterprise owners better. It develops a framework that assesses business requirements of small enterprises holistically and strategically. The framework is implemented by designing an innovative online IT decision assistive tool for small enterprises by following the design science research methodology. Findings affirm the relevance of an enterprise architecture-driven artefact as a tool to optimise strategic IT decisions in small manufacturing, service, and retail enterprises. The artefact developed has been deployed online for small enterprises and for IT professionals to provide support to small enterprises.

*Supervisor:* Professor JP Van Belle  
(Information Systems)

Carolyn Jane Dunton McGibbon

Thesis Title: *A model for teaching green information systems in higher education*

Carolyn McGibbon holds a BSc and an MBA from the University of KwaZulu-Natal. She completed her doctoral studies in UCT's Department of Information Systems following a career as a print journalist with Independent Newspapers and later as a marketing manager in the Faculty of Commerce.

Carolyn McGibbon's thesis responds to a call to Information Systems (IS) to provide solutions for global challenges such as the seventh Millennium Development Goal of ensuring connectedness between society and the environment. Many disciplines have recognised that sustainability is one of the greatest challenges and should be included in curricula – IS needs to address this. As part of the study, undergraduate students were introduced to the concept of "Green" Information Systems and measured an aspect of the campus carbon footprint. Through several design cycles, this process was refined into a general teaching model, combining theories from Green IS and change management. The contributions are twofold. A contribution is made to theory via the development of The Green U model for integrating sustainability into the curriculum. On a practical level, the model offers guidance to educators on how to create graduates who have the ability to conceptualise sustainability issues – now and in the future.

*Supervisor:* Dr J Ophoff (Information Systems)

Samwel Dick Mwapwele

Thesis Title: *The influence of effective use of mobile devices for learning outside the classroom: case study of secondary school students in Tanzania and South Africa*

Samwel Dick Mwapwele holds a BSc (IT), BCom(Hons) and Master's in Information Technology from the University of Pretoria. Before joining UCT for his doctoral studies, he worked for three years as an Assistant Lecturer at

Teofilo Kisanji University in Tanzania.

Samwel Mwapwele's thesis focuses on secondary school students' effective use of mobile devices for learning outside the classroom and its influence on academic performance. He starts by investigating students' use of mobile devices and understanding the teacher's perspectives. He then interviews students to understand the effective use of mobile devices for learning outside the classroom. Students' effective use of mobile devices leads to better understanding of content and planning of academic activities. Students use mobile devices to contact peers, family and teachers. He found that students have groups on social media. Students use the groups to enhance and exchange academic content through pictures, audio and videos. He identifies that teachers play a pivotal role by guiding and explaining unclear topics using websites and search engines. Teachers and peers assist students effective use of mobile devices for learning; leading to attaining of higher academic performance.

*Supervisor:* Dr S Roodt (Information Systems)

*In Quantitative Finance:*

Ralph Rudd

*Thesis Title: Recursive marginal quantization: extensions and applications in Finance*

Ralph Rudd holds a BSc degree in Theoretical Physics and a BSc Honours degree in Applied Mathematics from Stellenbosch University. He obtained his master's degree in Mathematical Finance from the African Institute for Financial Markets and Risk Research at UCT in 2014, after which he commenced his PhD research.

Ralph Rudd's research is in the area of pricing sophisticated financial claims known as derivative instruments. He uses numerical techniques to solve mathematical problems that arise when modelling the financial markets using random processes. In particular his thesis focuses on extending the application of quantization – a method that originated in digital signal processing. The thesis

makes contributions to the theory and analysis of the numerical method known as Recursive Marginal Quantization, while also providing practical applications of the technique to real-world finance problems. The proposed approaches are shown to be both accurate and efficient. Ralph has presented the work at several international conferences, including the Bachelier World Congress and Global Derivatives, and an article based on the work has recently appeared in *Quantitative Finance*.

*Supervisor:* A/Professor DR Taylor (Actuarial Science)

*Co-supervisors:* Professor TA McWalter (AIFMRM); Professor J Kienitz (Bergische Universität Wuppertal); Professor E Platen (University of Technology, Sydney)

## 7. FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

*Acting Dean: Associate Professor T Winkler*

### DEGREE OF DOCTOR OF PHILOSOPHY

*In Chemical Engineering:*

Adrian Charles Fortuin

*Thesis Title: Towards identifying platinum anchor sites on carbon via a model electrochemical system*

Adrian Fortuin has a BSc Engineering and MSc in Chemical Engineering from UCT. His PhD emerged from his passion to investigate fundamental scientific principles that underpin the functioning of renewable energy conversion technologies.

Adrian's Fortuin thesis explored the use of highly orientated pyrolytic graphite (HOPG) and mirror finish graphite (MFG) quartz crystal as model electrochemical substrates to investigate the interaction between Pt and its carbon support via conventional electrochemistry and the electrochemical quartz crystal nano-balance (EQCN).

The aim was to determine the mobility of Pt across these carbon surfaces and the effect of the Pt anchoring to carbon on the electrocatalyst durability. It was found that conventional electrochemistry has limitations in providing adequate evidence to conclusively determine the extent of Pt mobility on the carbon surface and the effect of oxygen terminated groups in hindering Pt dissolution. Adrian Fortuin therefore applied EQCN, with nanogram to picogram precision, to gain a more thorough understanding of the Pt dissolution processes. The result is a study that will inform the design and development of new support materials. The nature of the anchoring site has a strong influence on the affinity of the support for Pt nanoparticles and that the electrocatalyst is a very dynamic system with changing surface charge during operation.

*Supervisor:* Assoc. Prof P Levecque (Chemical Engineering)

*Co-supervisors:* Dr Günther Scherer

\*Moritz Wolf

*Thesis Title: Phase transformations in supported cobalt Fischer-Tropsch model catalysts captured in situ*

Moritz Wolf studied Chemical Engineering at the Karlsruhe Institute of Technology, Germany. He graduated with a Diploma (equivalent to MSc) in 2013 and joined the Catalysis Institute and DST-NRF Centre of Excellence in Catalysis at the University of Cape Town in 2014 for his PhD studies in heterogeneous catalysis.

Moritz Wolf's thesis investigated the stability of well-defined cobalt nanoparticles against water/hydrogen atmospheres utilising an in situ magnetometer. Monodisperse cobalt oxide nanoparticles below 10 nm were prepared in an optimised sol-gel synthesis, deposited onto commonly used metal oxide carriers or carbon supports, reduced to metallic cobalt and subsequently exposed to various simulated conversion levels of the Fischer-Tropsch synthesis. The likelihood of the formation of cobalt-support compounds by the product water

was monitored for a range of metal oxide carriers. Furthermore, larger cobalt nanoparticles were shown to be rather stable in another experimental series using differently sized nanoparticles on silica, while smaller nanoparticles experience strong oxidation by water to cobalt silicate. The application of carbon supports allowed for the identification of the reactant carbon monoxide as the major oxygen source during water-induced oxidation of cobalt to cobalt oxide, which was shown to be linked to hydrothermal sintering in a separate study.

*Supervisor:* Professor M Claeys  
(Chemical Engineering)

*Co-supervisor:* A/Professor N Fischer  
(Chemical Engineering)

*In Construction Economics  
& Management:*

Abdulrauf Adediran

Thesis Title: *Modelling targeted procurement strategies and relationship quality criteria influencing the development of small contractors in South Africa*

Abdulrauf Adediran holds a master's degree in Construction Project Management (with distinction) from Heriot-Watt University, UK and a bachelor's in Architecture (Honours) from Federal University of Technology Minna, Nigeria. Before joining UCT in 2015, he worked in the construction industry as a consultant in Lagos and Dubai.

Abdulrauf Adediran's thesis validates the pre-existing assumption that targeting small and medium-sized contractors and increasing their participation in government contracts stimulates their growth performance and development. He finds that targeted procurement strategies are a statistically significant predictor of the growth and development of targeted contractors and that relationship quality is an important mediator of the targeting strategies and contractor development relationship. His findings demonstrate that targeted procurement has the potential to achieve its intended results of improving the performance and development of historically disadvantaged contractors where the quality of relationships in the project supply chain has significant elements of trust, communication,

collaboration, joint problem-solving and risk allocation. The policy implication of Abdulrauf Adediran's findings is the need for public-sector clients to encourage the implementation of procurement strategies and supply chain management policies that will enable the formation of stronger ties and collaborative working relationships in the construction supply chain.

*Supervisor:* A/Professor A Windapo  
(Construction Economics and Management)

*In Electrical Engineering:*

\*Priye Kenneth Ainah

Thesis Title: *Coordinated active power reduction strategy for voltage rise mitigation in LV distribution network*

Priye Kenneth Ainah received his BEng degree in Electrical engineering from the Niger Delta University, Nigeria and MSc in Electrical Technology for Sustainable and Renewable Energy Systems from the University of Nottingham, United Kingdom in 2006 and 2010 respectively. He joined the Department of Electrical Engineering of UCT in 2013 for his PhD after working as an assistant lecturer in the department of Electrical engineering, Niger Delta University, Nigeria.

Priye Ainah's thesis focuses on mitigating voltage rise and improving the penetration level of rooftop photovoltaic (PV) systems in the distribution network. He starts by assessing and investigating the potential impacts of high penetration of rooftop PV systems using DigSILENT power-factory and MATLAB/Simulink environments to understand the nature of the potential impacts in the low voltage distribution network, and uses the results to develop, a coordinated active power reduction strategy. The developed, coordinated active power reduction strategy to curtail sudden voltage rise by ramp down the PV system output power during high PV system penetration in the LV distribution network.

*Supervisor:* Professor KA Folly  
(Electrical Engineering)

\*Abhishek Bhatta

Thesis Title: *GSM based Communication-Sensor (CommSense) System*

Abhishek Bhatta holds a BTech in Electronics and Communication Engineering from SRM University, India. He joined the Radar and Remote Sensing group at UCT in 2014 for his master's and then upgraded it to a PhD in 2016. Before joining UCT, he worked in the electronics industry designing and testing digital hardware for base stations.

Abhishek Bhatta's thesis focuses on the design of a novel architecture for commensal radar system based on the channel equalisation modules and algorithms available in Global System for Mobile Communication (GSM) telecommunication standards. He investigates the feasibility of the system theoretically and implements it to work with real world signals. In order to implement the system he uses Software Defined Radio (SDR) technology. He analyses the data received by the system statistically and categorises them. He further investigates applications of the system focussing on detection of an event across a wall using machine learning algorithms.

*Supervisor:* A/Professor AK Mishra  
(Electrical Engineering)

*In Geomatics:*

Williams Obeng

Thesis Title: *Integrating land administration systems in peri-urban customary areas in Ghana*

Williams Obeng has a BSc and MSc from the Kwame Nkrumah University of Science and Technology, Ghana, and the University of Cape Town, respectively. His doctoral research emerged as a result of his quest for effective ways of managing peri-urban customary land in sub-Saharan Africa.

Williams Obeng's thesis aims to develop a hybrid land administration model to manage peri-urban customary land in Ghana. Many recent research projects have focused on the strengthening of

customary land tenure and administration systems in sub-Saharan Africa. The work extends customary land administration systems study by developing a hybrid land administration model to manage peri-urban customary land in Ghana. The end result is a proposed model to guide the development of customary land in peri-urban customary areas in Ghana. The land administration model includes all stakeholders in the development of peri-urban customary land in Ghana. The land administration model is expected to promote good land governance in peri-urban customary land development processes.

*Supervisor:* A/Professor J Whittal  
(Architecture, Planning & Geomatics)  
*Co-supervisor:* Professor H Mostert  
(Law)

## 8. FACULTY OF HEALTH SCIENCES

*Dean:* Professor B Mayosi

### DEGREE OF DOCTOR OF PHILOSOPHY

*In Bioinformatics:*  
Jon Mitchell Ambler  
Thesis title: *Transcription analysis of virulent strains of Mycobacterium tuberculosis*

Jon Ambler holds a BSc (Hons) in Genetics and a MSc in Bioinformatics from the University of Pretoria. He joined the Faculty of Health Sciences at University of Cape Town in 2014 for his PhD studies.

Jon Ambler's thesis focuses on discovering what causes some strains of *Mycobacterium tuberculosis* to be more pathogenic than others by investigating changes in gene expression. He compared a hyper and a hypo virulent strain using next generation sequencing technology and computational methods that brought together information on the patterns of

mutations, levels of gene expression, and interaction networks, and identified a set of genes that enable the pathogen to better survive in the host. This research required the development of specialised tools and pipelines, including a tool for the creation and manipulation of graph genomes, a structure for representing genomes in a compact, efficient manner. These findings are being used to guide further research into virulent TB, helping us better understand this dangerous pathogen.

*Supervisor:* Professor N Mulder  
(Computational Biology)

*In Clinical Pharmacology:*  
Maxwell Tawanda Chirehwa  
Thesis title: *Population nonlinear mixed-effects modelling of pharmacokinetics and pharmacodynamics of tuberculosis treatment*

Maxwell Tawanda Chirehwa holds a BSc(Hons) degree in Applied Mathematics from National University of Science and Technology, Zimbabwe and an MSc in Biostatistics from Hasselt University, Belgium. He joined the pharmacometrics research group at the University of Cape Town in August 2013, after spending four years working in TB and HIV research.

Maxwell Chirehwa's thesis focuses on pharmacokinetics and pharmacodynamics of 1st line antituberculosis drugs in TB/HIV co-infected patients from South and West Africa. He applied nonlinear mixed effects modelling techniques to describe the absorption, distribution, metabolism, and elimination of rifampicin, isoniazid, pyrazinamide, and ethambutol. He discovered that autoinduction of rifampicin pharmacokinetics takes three weeks to reach steady-state and quantified the nonlinear increase in rifampicin concentrations deriving from an increase in dose, scribing this to saturable pharmacokinetics. He also reports that, in patients taking efavirenz-based antiretroviral therapy, concentrations of isoniazid are significantly reduced. He concludes his research by investigating the effect of drug exposure, disease burden,

and patient characteristics on tuberculosis treatment outcomes, finding that treatment outcomes are mostly driven by the extent of disease burden at diagnosis. To achieve comparable drug exposure in patients, he also proposed the use of fat-free mass adjusted dosing for the treatment of drug-susceptible tuberculosis.

*Supervisor:* Dr P Denti (Medicine)  
*Co-supervisor:* Professor H McIlleron  
(Medicine)

\*Rory Forseth Leisegang  
Thesis Title: *Outcomes and cost-effectiveness of different models of delivery of antiretroviral therapy*

Rory Leisegang completed degrees in Chemical Engineering and Medicine at UCT. He has worked as a research medical officer with the Division of Clinical Pharmacology, where he started working on his doctorate.

Rory Leisegang's thesis presents an economic evaluation of different models of antiretroviral therapy (ART) delivery in SA. He presents cost, outcome, and cost-effective analyses and shows that drivers of early costs were initiation of ART with advanced disease and a shorter duration in HIV care before starting ART; while late cost drivers were ART adherence, switch to second-line ART, and older age at ART start in a large private sector cohort. Risk factors for death are updated CD4 count, poor adherence, and unsuppressed viral loads. ART refills delivered to patients' homes by courier instead of self-refill at local pharmacies result in improved outcomes in the private sector. Finally, he developed a Markov model including parameters he had shown were important for costs. This model shows that ART provision to public sector patients by general practitioners is cost-effective compared with public sector clinics, which was driven by the high visit frequency in public sector clinics. These findings are helpful as part of the emerging differentiated service delivery, a patient-centred approach that simplifies and adapts services across the HIV care cascade to reflect the preferences and expectations of different sub-populations



of people living with HIV, while reducing unnecessary burdens on the health system.

*Supervisor:* Professor G Maartens  
(Medicine)

*Co-supervisor:* A/Professor Susan Cleary  
(Public Health & Family Medicine)

*In Emergency Medicine:*

Mohammed Khan Dalwai

*Thesis Title: Reliability and validity of the South African Triage Scale in low-resource settings*

Mohammed Dalwai holds a MBChB from Stellenbosch University. He worked with Doctors without Borders (MSF) in Northern Pakistan, Syria and Libya as an ER doctor and medical co-ordinator before joining the Division of Emergency Medicine at UCT in 2013 for his PhD studies.

Mohammed Dalwai's thesis focuses on the applicability of the South African Triage scale in low resource settings where MSF works. He investigates the reliability and validity of the scale in Afghanistan, Northern Pakistan, Sierra Leone and Haiti. He describes the process of implementation of the triage scale in Northern Pakistan and goes on further to develop a set of paediatric vignettes to make it easier for further reliability assessments in the future. He extends the lessons learnt when assessing the triage scale in Pakistan to Afghanistan, Sierra Leone and Haiti and develops a novel way of standardising the assessment of validity in low resource settings. He establishes that SATS is a reliable and valid scale across most low resource settings with this research leading to the widespread adoption of SATS by MSF across the world.

*Supervisor:* Professor L Wallis (Surgery)

*Co-supervisors:* Dr M Twomey  
(Surgery); Dr K Tayler-Smith  
(Pathology)

*In Exercise Science:*

Andreas Venhorst

*Thesis Title: The psychophysiological regulation of pacing behaviour and performance during prolonged endurance exercise*

Andreas Venhorst is a physician and holds a Doctor's degree in Medicine from the Ruhr-University Bochum, Germany. Before joining UCT, he was a professional Ironman triathlete. After his athletic career, he joined the Division for Exercise Science and Sports Medicine for his PhD studies.

In the early 2000's UCT scientists proposed a novel idea that the brain regulates exercise performance, specifically to maintain homeostasis and prevent catastrophic biological failure. However, the theory largely focussed on sensory-discriminatory processes, thereby neglecting the important role of affective-motivational and cognitive-evaluative modifiers. For his thesis Andreas Venhorst proposes a three-dimensional framework of centrally regulated and goal-directed exercise behaviour, which focuses on the complex and dynamic interactions between sensory, affective, and cognitive processes. He tests the utility of this framework under the constraints of psychological and physiological duress as relevant for endurance exercise. He further introduces advanced statistical methods and novel procedures to the pacing literature necessary to address pressing questions about hypothesised cause-effect relationships. This thesis significantly advances the field by showing how strain, perception, thinking, and action are coupled, and how their dynamic interactions determine alterations in observed pacing behaviour and endurance performance.

*Supervisor:* Professor TD Noakes  
(Human Biology)

*Co-supervisor:* Professor DP  
Micklewright (School of Sport,  
University of Essex, UK)

*In Medical Biochemistry:*

Zandile Cleopatra Mlamla

*Thesis Title: Differential lipidomic profiling of Mycobacterium tuberculosis genotypic strains and urine of TB suspects for "bio-signatures" of TB disease through Liquid Chromatography-Mass Spectrometry*

Zandile Mlamla completed her undergraduate and Master's degree at Stellenbosch University, and was subsequently accepted for PhD study at UCT in the Department of Integrative Biomedical Sciences.

Zandile Mlamla's thesis reports the mass spectrometry-based analysis of the lipid composition of urine samples from individuals with active tuberculosis disease, as well as from controls, and quantifies >2000 compounds per sample. Her statistical analysis shows that the lipidomic data was able to classify TB patients and to distinguish them from individuals with latent TB infections as well as from individuals with other respiratory disorders. She then went on to analyse the variation in lipid composition of different clinical isolates of the causative agent of tuberculosis disease, *Mycobacterium tuberculosis*. Through this analysis, her research shows that lipid profiles measured by mass spectrometry are potentially diagnostic for TB disease, as well as for bacterial strain typing. Her research thus paves the way for development of novel point of care diagnostic tests for tuberculosis, based on detection of specific lipids in urine.

*Supervisor:* Professor J Blackburn  
(Chemical & Systems Biology)

*In Medical Microbiology:*

Michael Anton Reiche

*Thesis title: Visualising the Mycobacterial mutasome*

Michael Reiche obtained a BSc at the University of Pretoria in 2012 and a BSc(Med)(Hons) from UCT in 2013. The following year, he started a full-time MSc study and, owing to the quality of his research outputs, upgraded to a PhD in 2016.

Michael Reiche's thesis investigates the regulation and function of essential components of the 'mycobacterial mutasome' – a protein complex predicted to generate mutations during repair of damaged DNA in *Mycobacterium tuberculosis*, the causal agent of tuberculosis. Utilizing advanced molecular and imaging techniques, his work elucidates the expression dynamics and sub-cellular localisation of two mutasome proteins within live bacilli exposed to genotoxic conditions. He demonstrates recruitment of one of these proteins to the site of DNA replication – thereby supporting a model in which the pseudopolymerase provides a molecular scaffold enabling access of the other mutasome components to the damaged DNA. Notably, he also establishes the capacity of a novel natural product antibiotic to disrupt mutasome formation, thus presenting compelling evidence of the potential to reduce adaptive mutagenesis in *Mycobacterium tuberculosis*, and so laying a foundation for the discovery of "anti-evolution" drugs designed to limit the development of drug resistance in this pathogen.

*Supervisor:* A/Professor DF Warner (Pathology)  
*Co-supervisor:* Professor V Mizrahi (Medicine)

*In Medical Virology:*

Smritee Dabee

Thesis Title: *Biological factors influencing genital inflammation and HIV risk in the adolescent genital tract*

Smritee Dabee completed her BSc at UCT in 2010. She joined the Division of Medical Virology for a BSc(Hons) in 2011, and MSc in 2012. She researched the impact of HAART on genital immunity in HIV-infected women, with A/Prof Passmore and Dr Gumbi. She obtained a distinction.

Smritee Dabee's thesis aimed to evaluate biological risk factors for HIV infection in adolescent girls and young women, including genital inflammation, cervical cellular activation, vaginal microbial composition and use

of hormonal contraceptives. In addition, she investigated the impact of sexually transmitted infections, bacterial vaginosis (an imbalance in the genital microbiota) and vaginal yeast infections on these risk factors for HIV. She shows that, despite being asymptomatic, bacterial vaginosis and genital infections are accompanied by significantly increased levels of genital inflammation and cellular activation, potentially putting these young women at a higher risk of HIV infection. Overall, this thesis describes physiological factors that make adolescent girls and young women in South Africa so vulnerable to HIV, and the importance of treating genital infections as part of HIV prevention strategies.

*Supervisor:* A/Professor J Passmore (Pathology)  
*Co-supervisor:* Dr H Jaspan (Pathology)

*In Medicine:*

Nishtha Jhilmeet

Thesis Title: *Immunological markers of protective immune reconstitution in HIV infected persons sensitised by Mycobacterium tuberculosis.*

Nishtha Jhilmeet obtained her BSc from UCT and honours in Medical Microbiology from the Nelson Mandela School of Medicine, UKZN. She was awarded a prestigious Wellcome Trust fellowship in Public Health and Tropical Medicine and returned to UCT to start her PhD in 2014.

The focus of her Nishtha Jhilmeet's thesis is understanding protective immunity to Tuberculosis, in individuals with a compromised immune system. The risk of developing active TB disease in HIV co-infected individuals is increased during HIV infection, and antiretroviral therapy is the most effective way of reducing the risk of TB in these patients: antiretroviral treatment reduces TB incidence rates by 50- 90%. Thus she explored the immunology of immune reconstitution through antiretroviral treatment in immune compromised individuals with the aim of identifying transcriptomic, soluble and cellular biomarkers that

correlate with protection against TB. Her data illustrates a significant increase in the number and proportion of central memory T cells, and associated central memory T cell markers, in HIV infected individuals during 6 months of ART. Thus central memory T cells, and associated markers, could be associated with reduced susceptibility to TB and may therefore be potential correlates of protection. This has implications for vaccine design and evaluation of efficacy in vaccine studies.

*Supervisor:* A/Professor KA Wilkinson (Medicine)  
*Co-supervisor:* Professor RJ Wilkinson (Medicine)

*In Physiotherapy:*

Assuman Nuhu

Title of the thesis: *Soccer injury surveillance and implementation of an injury prevention programme in Rwanda.*

Assuman Nuhu holds a master's in Physiotherapy from the University of the Western Cape. He enrolled in the Division of Physiotherapy at UCT in 2014 for his PhD studies. He is a Lecturer in the Physiotherapy Department, College of Medicine and Health Sciences, University of Rwanda.

Assuman Nuhu's thesis focuses on the implementation of a novel injury surveillance system in soccer players in Rwanda, to prospectively determine injury incidence and load exposures for two consecutive seasons. Approximately 50% of players sustained injuries over the two seasons. Injuries predominantly involved the lower limbs, with a high proportion of match injuries. Injuries were mostly traumatic, were associated with contact situations and fouls; and were moderate to severe. He identified common intrinsic risk factors for injuries in Rwandan soccer players. Based on these epidemiological findings, he conducted a randomised control trial to determine the effects of a coach-led injury prevention intervention on the incidence of injuries among soccer players. The intervention significantly reduced lower limb injury incidence and resulted in positive behaviour changes of coaches towards injury prevention.

He advocates incorporating coach-led injury prevention programmes to reduce injury incidence, improve player safety and empower coaches in resource limited settings.

*Supervisors:* Dr Theresa Burgess (Physiotherapy)

*Co-Supervisors:* Professor Jennifer Jelsma (Physiotherapy)

Jean Baptiste Sagahutu

Thesis Title: *Use of the International Classification of Functioning Disability and Health (ICF) as a theoretical framework to inform interprofessional assessment and management by health care professionals in Rwanda. A cluster randomised control trial.*

Jean Baptiste Sagahutu holds a master's degree in Physiotherapy from the University of the Western Cape. He enrolled for his PhD studies in UCT's Division of Physiotherapy in 2014. He is a Lecturer in the Physiotherapy Department, College of Medicine and Health Sciences, University of Rwanda.

Jean Sagahutu's thesis focuses on using the International Classification of Functioning Disability and Health (ICF) developed by the World Health Organisation, to inform clinical practice in Rwandan district hospitals. He designs an educationally sound programme to train health care professionals to apply a bio-psycho-social model of health care based on interprofessionalism. He further develops appropriate tools to measure changes in knowledge, attitudes and practice resulting from the training. He demonstrates that the tools are psychometrically sound and the training is acceptable and feasible. The final cluster randomised trial at two control and two experimental district hospitals suggests that the use of the ICF as a framework to inform interprofessional training improves knowledge, attitudes and practice as demonstrated by increased evidence of holistic care as documented in patients' folders. He concludes that effective collaboration between health care personnel could lead to improvement

in patient management and outcomes within similar contexts.

*Supervisors:* Professor J Jelsma (Health & Rehabilitation Sciences)

*Co-supervisor:* Professor F Cilliers (Health Sciences Education)

Janine Bridget Verstraete

Thesis Title: *The development of an English Health-Related Quality of Life (HRQoL) measure for very young children, to be completed by proxy*

Janine Verstraete holds a BSc in Physiotherapy from UCT, and upgraded her MSc to a PhD in 2015. Her doctoral research emerged as a result of her work as a paediatric physiotherapist with young children at Red Cross War Memorial Children's Hospital.

Janine Verstraete's thesis focuses on the development of an English version Health Related Quality of Life (HRQoL) measure for young children. The item pool for the new instrument is first identified and then pruned through a systematic review of the literature, interviews with caregivers, reference to a panel of experts and a Delphi exercise. The alpha draft of the instrument is then tested and after analysis of the psychometric properties the final beta draft is subjected to reliability and validity testing. The final version includes six items with three levels of difficulty, and referenced to the performance children of the same age as the child. The new instrument, the Health Related Quality of Life – 6 dimensions – Infants and Toddlers (HRQoL-6D- IT) is found to be both valid and reliable. The availability of such an instrument will allow for the monitoring of the impact of intervention in the very young child.

*Supervisor:* Professor J Jelsma (Health & Rehabilitation Sciences)

*Co-supervisor:* A/Professor L Ramma (Health & Rehabilitation Sciences)

*In Psychiatry:*

John-Joseph Saunders Dawson-Squibb  
Thesis Title: *Parent education and training for autism spectrum disorder: evaluating the evidence for implementation in low-resource environments*

John-Joe Dawson-Squibb holds BSocSc, BA(Hons) and MA (Clinical Psychology) degrees from UCT. He worked as a Clinical Psychologist in South Africa and Ireland then joined the Division of Child and Adolescent Psychiatry at UCT in 2013 as Senior Lecturer, starting his PhD studies in 2016.

John-Joe Dawson-Squibb's thesis focuses on the fact that, even though autism spectrum disorder is a global public health concern, the research evidence for programmes to empower parents/carers through education and training is limited. He reviews the global literature of a broad range of parent education and training programmes, and finds some low-level evidence for positive outcomes, and very little evidence of research on pathways to such programmes or on factors that may determine the actual implementation of such programmes in culturally-diverse settings around the world. Given that he could not identify any consensus evaluation framework for such programmes, he uses a multi-stakeholder approach to generate a novel evaluation framework, and then uses the framework to compare the feasibility of two programmes in a South African setting. He shows the need for the evidence-base to include processes and procedures, and examination of the implementation landscape, in addition to traditional outcomes.

*Supervisor:* Professor PJ de Vries (Psychiatry & Mental Health)

Ntokozo Goodman Sibeko

Thesis Title: *Pilot testing models of task shifting for the care of severe mental illness in South Africa*

Goodman Sibeko completed his MBChB qualifications at the University of KwaZulu-Natal. After his Registrar training in Psychiatry, he began full time study towards his PhD at UCT in 2012.

Goodman Sibeko's thesis focuses on the piloting of task shifting interventions for severe mental illness in South Africa. In spite of the significant contribution of mental and neurological diseases worldwide, there is a significant shortage of qualified mental health care providers, particularly in low- and middle-income settings, including Sub-Saharan Africa. Task shifting is the delegation of specialised health care tasks to less specialized workers who receive appropriate training and supervision, and is widely held as a promising solution to address this skills shortage. Goodman Sibeko begins by conducting a systematic review of task shifting interventions in Sub-Saharan Africa to characterise the current evidence. He then designs and pilots two task shifting interventions in Cape Town, South Africa and demonstrates the acceptability, feasibility and preliminary efficacy of these interventions. He concludes by making recommendations for future research in this area.

*Supervisor:* Professor DJ Stein  
(Psychiatry & Mental Health)

*Co-supervisors:* Professor C Lund  
(Psychiatry & Mental Health); Dr Peter  
D Milligan (Psychiatry & Mental Health)

Tania Swart Barbour

Thesis Title: *The therapeutic alliance as a component of risk management and assessment in forensic mental health*

Tania Swart Barbour holds a BSc and HDE from UCT, and an MSc in Clinical Psychology from the University of Kwazulu-Natal. She has been an academic member of staff at UCT and a state clinical psychologist for the Department of Health since 2006.

Tania Swart Barbour's thesis examines the utility of the therapeutic alliance as a contextual measure of violence risk in mentally ill offender patients. The broad objective of the study is to identify ethical context-driven and treatment-relevant methods of assessing and managing potential risk, and to establish an assessment framework that accommodates both risk and recovery in forensic mental health services. Additional benefits to recognising the alliance as a surrogate measure of violence risk are that it is in the therapeutic framework of the system, and its capacity to be transformed is in line with contemporary risk management and risk reduction strategies in forensic mental health. Given the lack of literature pertaining to treatment issues in this specialty area, Tania Swart Barbour's study gathers significant clinical and contextual data relating to risk assessment and treatment in forensic mental health.

*Supervisor:* A/Professor Sean Z Kaliski  
(Psychiatry & Mental Health)

*In Public Health:*

\*Kathryn Lou Bistline

Thesis Title: *Does the inclusion of the cost and burden of adverse drug reactions associated with drug-resistant TB treatment affect the incremental cost-effectiveness of new treatment regimens? A case study from the introduction of bedaquiline in South Africa National TB Programme*

Kathryn Bistline holds a BA in Economics, Political Science, and Near Eastern Languages and Cultures from Indiana University, USA and an MPA degree with a certificate in Demography from Princeton University, USA. Before joining UCT in 2015 for her PhD studies, she worked in health outcomes research in Johannesburg.

Kathryn Bistline's thesis uses cost-effectiveness analysis to inform policy decisions regarding the use of a new all oral treatment regimen, with higher drug costs, compared to the current drug-resistant tuberculosis (DR-TB) regimen which requires daily injections

for six months. She analyses patient outcomes as captured in the South African DR-TB patient case register, medical files from Johannesburg clinics, and a meta-analysis to establish a Markov health state model for comparing the costs, outcomes, and adverse drug reactions of the alternative regimens. She finds that, having discounted life years lived for patients who survived DR-TB, but experienced permanent, profound deafness as a side effect of the injections, the new oral treatment is cost saving to the South African public health sector and treatment guidelines should allow for more widespread use.

*Supervisor:* A/Professor E Sinanovic  
(Public Health)

*Co-supervisor:* A/Professor C Firmhaber  
(Medicine, University of Colorado)

## 9. FACULTY OF HUMANITIES

*Dean:* Professor D Wardle

### DEGREE OF DOCTOR OF PHILOSOPHY

*In Drama:*

Alexandra Kathleen Halligey

Thesis title: *Of place and playmaking: working with everyday city spaces through theatre and performance*

Alexandra Halligey holds a BA in Theatre and Performance from UCT and an MA in Performance Studies from New York University. Her PhD research through UCT's Drama Department and the African Centre for Cities began in 2014. Before that she worked as a theatre maker.

Alexandra Halligey's thesis discusses theatre and performance practices as a way of understanding city spaces. She conceived and facilitated a public art project in Bertrams, Johannesburg. It used theatre to explore how people's everyday actions shape the spaces they live in and how the spaces themselves shape people's everyday actions. Drawing on and analysing data derived from that project, she argues for

the processes of playmaking as mirroring the processes of placemaking. Because of the shared nature of play and placemaking practices as embodied and ephemeral, she proposes theatre as a fitting tool for learning about city places and for broadcasting the knowledges so produced. Her research project further demonstrates how theatre as a broadcasting mechanism engages city publics in an ongoing dialogue about the ways in which their actions influence city spaces; and that theatre, as a form of research publication, initiates further chains of research among its audience.

*Supervisor:* Professor M Fleishman (Drama)

*Co-supervisor:* Professor E Pieterse (Architecture, Planning & Geomatics)

*In Education:*

Anthony Robin Cawood

*Thesis Title: Religion, solidarity and identity: A comparative study of four South African schools with a religious affiliation*

Anthony Cawood holds a BA, PGCE, honours in Philosophy and a master's in Education, all from UCT. Prior to his PhD studies, he worked for seven years as a Mathematics and English teacher.

Anthony Cawood's thesis explains the relation between the character of a religious school's affiliated religion and the forms of social cohesion privileged by the school's curriculum structure and its school culture, and how those project particular forms of student identity. Offering a novel theoretical methodology for comparing 'religious schools' across different religions, it undertakes an explorative comparative study of a charismatic Protestant school, a liberal Catholic school, a traditional-Orthodox Jewish school and a conservative Muslim school. The thesis offers a detailed, theorised comparison of how the four schools recruit religion in constructing their formal curricula and school cultures and how those in turn relate to each school's particular student identity project. Anthony Cawood's thesis

suggests that the way a school's affiliated religion constitutes the relationship between each individual's inner self and their outer social world relates to the forms of social cohesion privileged by the school, and that that in turn enables the projection of particular forms of student identity.

*Supervisor:* A/Professor U Hoadley (Education)

*Co-supervisor:* Emeritus Professor JP Muller (School of Education)

Shaheeda Jaffer

*Thesis Title: Pedagogic evaluation, computational performance and orientations to mathematics: a study of the constitution of Grade 10 mathematics in two secondary schools*

Shaheeda Jaffer holds BSc, BA, MEd degrees and a HDE(PG)SEC teaching diploma from UCT, as well as a BEd degree from the University of the Western Cape. She joined the School of Education at UCT in 2009 as a lecturer in Mathematics Education.

Shaheeda Jaffer's thesis studies the differences and similarities of the structuring effects of pedagogic evaluation on the constitution of mathematics in pedagogic contexts populated by learners from working class families on one hand and from upper-middle class and elite families on the other. She finds that pedagogic evaluation functions similarly in both contexts but with a crucial difference. In the upper-middle class/elite context, the computational resources constituted are more varied and explicitly interconnected while in the working class context such resources are relatively restricted and disconnected. Her analyses demonstrate that the computational resources used in schooling differ in significant ways from those presupposed by the field of mathematics and are often inconsistent with the mathematical structures believed to ground school mathematics. Shaheeda Jaffer's thesis makes an important methodological contribution to studying evaluation in pedagogic situations and

enriches the study of pedagogy derived from Basil Bernstein's sociological work.

*Supervisor:* A/Professor Z Davis (Education)

*Co-supervisor:* Emeritus Professor MP Ensor (Education)

Matumo Catherine Ramafikeng

*Thesis Title: Students' negotiation of practice education in occupational therapy: a case study*

Matumo Ramafikeng holds BSc and MSc degrees in Occupational Therapy from UCT. She has worked as an Occupational Therapist in a psychiatric hospital in Lesotho. Since 2009, she has been engaged in academic development work with occupational therapy students at UCT.

Matumo Ramafikeng's thesis is based on a case study of the learning processes and experiences of African language speakers within Occupational Therapy courses in a South African university. She uses interviews, analysis of writing and document reviews, and draws on post-structuralist theory, to analyse and describe the complex ways in which her research participants interpret and experience the transition from theory to practice. While student under-performance is often attributed to their struggles with English, Matumo Ramafikeng illustrates that their past experiences of learning, implicit understandings of the relationship between theory and practice and divergent expectations and mismatches between curriculum aims, pedagogy and assessment all impact on how students learn. She highlights how students are constructed in deficit terms, and shows that resources they bring with them (e.g. their multilingualism) are institutionally undervalued. Her thesis concludes by outlining the implications of her findings for the development of curriculum and pedagogic practices that embrace and value diversity.

*Supervisor:* A/Professor R Kapp (Education)

*Co-supervisor:* Professor E Ramugondo (Health & Rehabilitation Sciences)

Isabel Tarling

Thesis Title: *Transforming teaching through the transformative integration of emerging technologies in the ePlay MakerSpace: a critical, socio-cultural design-based study*

Isabel Tarling completed her MEd qualification at UCT in 2012 and started full-time study towards her PhD in 2014.

Isabel Tarling's thesis research used a design-based research methodology to iteratively develop design principles for transforming teaching through a transformative model for teacher professional development. The model, the ePlay MakerSpace, is intended to capacitate teachers to plan and manage how they change their practice of integrating emerging technologies in teaching and learning. Forty-two teachers from resource-constrained schools in the Western Cape participated in the ePlay MakerSpace and, following this, not only refined the design principles but also changed their own practices and that of their schools. The thesis describes how the playful MakerSpace environment created enabling conditions and learning processes that inculcated dispositions to innovate, create and experiment as well as to prepare the participating teachers to be change agents in their schools and communities. Isabel Tarling's thesis demonstrates that the ePlay MakerSpace equips teachers to transformatively integrate emerging technologies to create and innovate socially embedded solutions for the challenges they face in their schools and classrooms.

*Supervisor:* A/Professor D N'gambi  
(School of Education)

*In English Language and Literature:*

Tara Juliette Corinna Leverton

Thesis Title: *Madmen and mad money: psychological disability and economics in medieval and early modern literature*

Tara Leverton holds a BSocSc in Political Science, Philosophy and English Literature, and an honours and MA in English Literature, all from UCT. She has lectured on Macbeth at the University of

the Western Cape and has published two articles in the journal *Shakespeare in South Africa*.

Tara Leverton's thesis demonstrates that the depiction of psychological disability in medieval and early modern texts dehumanises disabled people, reducing them to symbols of socioeconomic dysfunction. She observes that psychologically disabled characters appear in a diverse array of texts – religious poems, satires and tragedies – and are themselves diverse in age, social status, and narrative role. However, she shows, there is a discernible trend towards depicting 'mad' men and women as representing the economic anxieties of their respective periods, such as those arising from poverty and price fluctuations. The characters she examines come from as far back as scripture – the avaricious mad king Nebuchadnezzar – and as far forward as Shakespeare's Timon of Athens whose bankruptcy drives him to shun society and sanity alike. Her thesis applies analytical frameworks provided by disability theorists regarding neurodiversity and sanism to medieval and early modern literature in order to expand and invigorate conversation around disabled peoples' cultural history.

*Supervisors:* A/Professor S Young  
(English Language and Literature)  
*Co-supervisor:* Dr D Higginbotham  
(University of Hawai'i)

Rosa Frances Lyster

Thesis Title: *A history of apartheid censorship through the archive*

Rosa Lyster holds a BA(Hons) and an MA in English Studies from UCT. She commenced her PhD studies in 2013. Her writing has appeared in *The New Yorker*, *The New York Times*, and *The Washington Post*.

Rosa Lyster's thesis presents a history of apartheid censorship which foregrounds the censorship archive itself. The censors left behind a vast body of material relating to their activities, much of which has not been used or discussed. Histories of the system tend to centre on spectacular individual cases providing

an incomplete view of the censors' activities as they sought to define where undesirability ended and literature began. Rosa Lyster argues that immersion in the censorship archive, and tracing the censors' aestheticist assumptions as they developed, can dramatically expand understanding of the system and the national literary sensibility it had a hand in shaping. She shows how censorship's effects have shaped current debates around literature's function and value; and she demonstrates that interrogating the censorship archive enhances our understanding of the South African literary field today.

*Supervisors:* Dr HL Twidle (English Language & Literature)  
*Co-supervisor:* A/Professor S Young  
(English Language & Literature)

*In Linguistics:*

Bruce Rory Wileman

Thesis Title: *A sociophonetic investigation of ethnolinguistic differences in voice quality among young, South African English speakers*

Bruce Wileman holds BA(Hons) and MA degrees in Linguistics from UCT. He joined the School of African and Gender Studies, Anthropology and Linguistics at UCT for his PhD studies in 2013. He has lectured and tutored Linguistics at UCT while completing his studies.

Bruce Wileman's thesis describes differences in voice quality (the habitual use of modes of phonation during speech) in South African English and links them to language background and ethnicity. He collected and, using acoustic analysis software specifically designed for voice quality analysis, analysed 36 interview recordings. His results provide empirical evidence of a trend for white South African English speakers to use a voice quality characterised by greater stiffness and constriction of the vocal folds in comparison to isiXhosa language-background speakers who show evidence of a tendency to use a breathier voice quality. Wileman concludes that a likely explanation relates to a transfer effect from isiXhosa versus a global trend in

phonation. His research has potential applications in speech technology, has implications for forensic linguistics and speech pathology, and also contributes to extending understanding of sociolinguistic variation in South African English.

*Supervisor:* Professor R Mesthrie  
(African & Gender Studies,  
Anthropology & Linguistics)  
*Co-supervisor:* Professor D Wissing  
(North West University)

*In Media Studies:*  
Marija Anja Venter  
Thesis Title: *Patchworked creative  
practice and mobile ecologies*

Marija Anja Venter is a visual artist and designer with a BA (Visual Communications) from Stellenbosch University. She first registered in the UCT Centre for Film and Media Studies in 2011 for her MA and progressed to her PhD research in 2013.

Marija Anja Venter's thesis focuses on the role that networked digital technologies, particularly mobile devices, play in visual creative practice and participation in Cape Town. She investigates how infrastructures support creative work among a group of young, poor and working class aspiring designers, both on and off university campuses. She suggests a novel method of 'creative jamming' to make the role of infrastructure visible. Her study shows that, off campus, her research participants' use of media-related practices was more patchworked than networked, whilst on campus they experienced tensions between their own contexts and the embodied, technical and spatial requirements for later participation in the design industries. Marija Anja Venter argues that, since infrastructure and practice are dynamically and asymmetrically mutually constituted, it is increasingly important to draw attention to the dangers of global standardisation of infrastructures for creative practice since they encode cultural norms and threaten to flatten the cultural richness of local creative voices.

*Supervisor:* A/Professor M Walton  
(Film & Media Studies)

*In Psychology:*

\*Warren Gordon King  
Thesis Title: *The association of limbic  
system activation with dream, bad dream  
and nightmare generation*

Warren King completed a BSocSc (Psychology) at the University of Kwa-Zulu Natal and a BSocSc(Hons) in Psychology and MA (Psychological Research) at UCT.

Warren King's thesis research focused on the effect that higher levels of activation in the limbic system of the brain have in generating dreams, bad dreams and nightmares. He also investigated the effect that psychosocial stress and monophasic oral contraceptive (OC) use have on dreaming and dream content. His research results indicate that higher levels of limbic activation result in a greater frequency of normal dreams, as well as bad dreams and nightmares. He also found that dream content in individuals with higher levels of limbic activation was generally more negative; and that psychosocial stress – an external factor affecting limbic activation – was a positive predictor of bad dream and nightmare frequency. He further found that OC use was associated with generally more positive dream content, due to the ability of OCs to attenuate the stress response.

*Supervisor:* Professor ML de G Solms  
(Psychology)  
*Co-supervisor:* A/Professor  
KGF Thomas (Psychology)

*In Social Anthropology:*

\*Kelsey Lynne Draper  
Thesis title: *Modelling human wellbeing  
for fisheries management: Science,  
extraction and apolitics of nature in the  
Walvis Bay, Namibia*

Kelsey Draper holds a BA(Hons) from the University of Colorado at Boulder (Anthropology and Gender Studies) and a Master of Arts from UCT. She began full-time study for her PhD in 2011.

Kelsey Draper's thesis argues that the logic of neoliberalism affects relations between scientific knowledge

production, historical labour practices, and political decision-making. Based on eighteen months of ethnographic field work in Walvis Bay, Namibia, she explores the efficacy of statistical and scientific models in the industrial fishing sector. She considers and shows how breakdowns between the scientific, social, and political knowledge worlds can be usefully brought into the fisheries management framework, a space that is globally undergoing a paradigm shift from single species stock assessments to ecological approaches. By focusing on the relations of risk in Walvis Bay workers' everyday lives, Kelsey Draper's study offers an innovative approach that combines political economy and political ecology in Namibian fisheries management. Her research further proposes that consideration of historical injustice in fisheries management offers pathways toward ecological and economic justice.

*Supervisor:* A/Professor LJ Green  
(School of African & Gender Studies,  
Anthropology & Linguistics)  
*Co-supervisor:* Dr B Paterson (Marine  
Research Institute)

*In Sociology:*

\*Faisal Garba Muhammed  
Thesis Title: *African migrant workers  
in Germany: between precarity and  
solidarity*

Faisal Garba Muhammed holds a BA and an MA degree in Sociology and Social Sciences, respectively from the University of Ghana, Legon and the University of Freiburg Germany. He began his PhD studies at UCT in 2013, having previously worked as a journalist and researcher.

Faisal Garba Muhammed's thesis focuses on precarious African migrant workers in Germany and their self-organisation. He investigates the impact of precarity on their working and living conditions. He starts by investigating the forms of work that African migrant workers in Germany do. He then goes on to show that, while precarious work undermines their livelihoods, the workers build communities of solidarity that enable

them to cope with their circumstances and imagine a different future. He uses his findings to conceptually theorise migration, identity and belonging in Africa.

*Supervisor:* Emeritus Professor A Sitas  
(Sociology)

*Co-supervisor:* Dr J Grossman  
(Sociology)

Merlin Keith Ince

*Thesis Title: Youth Employability in Ghetto Neighbourhoods: The Role of Personal Agency in Reproducing or Transforming Social Structures*

Merlin Ince holds a BTh from St Joseph's Theological Institute, KwaZulu-Natal, and an MSocSc from UCT. He began part time PhD studies in 2013, having previously pursued youth development work in Durban.

Merlin Ince's thesis focuses on how youth who grow up under similar conditions of poverty and marginalisation produce different education and employment outcomes. Based on case studies among youth in Manenberg, Cape Town, his findings demonstrate how youth reflect on their circumstances through the influential roles of parenting, family, social networks, and of cultural capital. These influences hold both enabling and constraining powers such that youth build an attitude that is either despondent or resilient about their prospects of completing high school and finding employment. Merlin Ince shows that personal agency, through internal reflection, interacts differently with material and cultural conditions that impact on the employment prospects of youth. He concludes that understanding that factor enables one to appreciate why many succumb to social adversity while others are able to overcome it.

*Supervisor:* Professor O Crankshaw  
(Sociology)

## 10. FACULTY OF LAW

*Acting Dean: Professor H Corder*

### DEGREE OF DOCTOR OF PHILOSOPHY

*In Commercial Law:*

Omogboyega Oyeniyi Abe

*Thesis Title: The rights-based approach to extractive resource governance in Nigeria through the lens of the UN Guiding Principles on Business and Human Rights: lessons from South Africa*

Oyeniyi Abe holds a BA (Hons) degree from the University of Ado-Ekiti, Nigeria, an LLB from the University of Benin, Nigeria and an LLM from Central European University, Hungary. He commenced doctoral studies in Law at UCT in 2015, having previously worked as an attorney and a lecturer in Nigeria.

Oyeniyi Abe's thesis examines the subject of integrating human rights provisions into contracts in the extractive industry with particular reference to oil and gas contracts in Nigeria and mining contracts in South Africa. He advances a rights-based approach to the governance of the extractive industry using the United Nations Guiding Principles on Business and Human Rights (UNGPBHR). Oyeniyi Abe's thesis demonstrates how the UNGPBHR guides the development of effective legal and institutional frameworks that integrate human rights principles into domestic regulation in the extractive sector. A key finding is that corporate responsibility to respect human rights is not enough to secure corporate compliance in the face of weak enforcement by state institutions. Other pertinent factors include early inclusion of extractive communities in decision-making processes and provision of business incentives to compliant companies. The thesis reinforces the suitability of the UNGPBHR as a framework for advancing these complementary options.

*Supervisor:* A/Professor A Ordor  
(Commercial Law)

Chijioke Ifeoma Okorie

*Thesis Title: Open and freemium music business models in Africa - copyright and competition consequences*

Chijioke Okorie holds an LLB (Nnamdi Azikiwe University, Awka) and an LLM in Internet law and policy (University of Strathclyde, Glasgow). She began working towards her PhD in 2015. Before joining UCT, she worked as a legal practitioner and a business affairs consultant in Nigeria.

Chijioke Okorie's thesis considers how South Africa and Nigeria can apply copyright and competition laws to regulate an open and freemium music business model that involves the use of copyright-protected music content to generate revenue from advertising. She investigates whether the use of music content in advertising aligns with the objectives of copyright and competition laws. She concludes that, although such use engenders free and wide distribution of copyrighted content, some aspects may adversely affect the viability of copyright owners as business entities and necessitate restrictions that prevent innovative uses of copyrighted products. She argues for aligning the freemium music business model with regulatory frameworks and for doing that by ratifying international copyright treaties in ways that provide exclusive rights limited by compulsory licensing, and that amend and enforce competition law in ways that protect the economic freedom of copyright owners as small businesses.

*Supervisor:* Professor C Ncube  
(Commercial Law)



In Public Law:

Justice Alfred Mavedzenge

Thesis Title: *An analysis of how Zimbabwe's international legal obligation to achieve the realisation of the right of access to adequate housing, can be enforced in domestic courts as a constitutional right, notwithstanding the absence of a specific constitutional right of every person to have access to adequate housing*

Justice Alfred Mavedzenge holds a BA, LLB and LLM (Constitutional and Administrative Law) from UCT. Before commencing with his doctorate, he managed a human rights project that sought to promote access to socio-economic rights within the SADC region.

The Constitution of Zimbabwe does not expressly provide for a right to access adequate housing. It provides for freedom from arbitrary evictions, the right to life, the right to equality and children's right to shelter. Justice Mavedzenge's thesis focuses on how these rights can be interpreted to enable individuals to compel government to comply with and perform its international obligation to ensure that they enjoy access to adequate housing. He explores how the right to life can be interpreted as the right to live in dignity whereby to enable individuals to claim access to adequate housing. In addition to analysing how the right to substantive equality can be interpreted to enable previously marginalised groups to claim access to adequate housing as a constitutional right, he also explores how, and suggests that, in Zimbabwe, parents might rely on their children's right to shelter to claim access to adequate housing for their children and for themselves.

*Supervisor:* Professor P de Vos  
(Public Law)

*Co-supervisor:* Professor H Corder  
(Public Law)

Nadeem Salie

Thesis Title: *The utilisation of ubuntu can promote accountability in public officials and state institutions as well as give effect to social solidarity in South Africa*

Nadeem Salie is both a qualified physiotherapist and an admitted attorney. After completing his LLB degree, he was among the first cohort of students in the LLM in International Trade, Business and Investment Law at the University of the Western Cape in 2003. He graduated cum laude in 2004.

Nadeem Salie's thesis demonstrates that, once understood and applied as an unwavering focus on communal obligations, ubuntu can in fact mesh with a human rights regime. He argues that ubuntu, if applied as such by public officials in the exercise of their duties, can promote accountability in and of the public sector in South Africa; and can assist the state in giving effect to socio-economic rights, as per its constitutional obligations. He further argues that progressive realisation of the socio-economic rights of vulnerable groups will assist in forging social solidarity, creating a just and caring society and fundamentally changing the lived reality of members of those vulnerable groups. Nadeem Salie's thesis advances a number of concrete recommendations on how such understanding and application of the communal focus of ubuntu can be achieved.

*Supervisor:* Professor P de Vos  
(Public Law)

*Co-supervisor:* Professor R Wandrag  
(University of the Western Cape,  
Department of Mercantile and Labour  
Law)

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## HISTORICAL SKETCH

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Founded as the South African College (a boys' school that aimed to provide higher education as well) in 1829, the University was established as the University of Cape Town in 1918.

The early history was one of great expectations and hard times and it was not until the early years of the twentieth century that the University was developed into a fully-fledged tertiary institution. A significant and pioneering development in the 19th century was the admission of women as degree students in 1886, many years ahead of most universities in the world.

At the start of the 20th century the University incorporated the Diocesan College, the teacher training classes of the Normal College, the South African College of Music and the Cape Town Schools of Fine Art and Architecture.

The Medical School was established and in the 1920s the University began a partnership with the local health authority (now the Provincial Government's health department) that saw the Medical School move from the Hiddingh Campus and the Green Point Somerset Hospital to Observatory (the rest of UCT's Upper Campus moved from Hiddingh to its present site, on part of Cecil Rhodes' estate, in 1928). This partnership allowed for the construction of the first Groote Schuur Hospital on a University site. The partnership continues to this day and now involves not only Groote Schuur as a teaching hospital but Red Cross Children's Hospital, Valkenberg and a growing number of primary health care sites.

The period between the end of World War II and 1994 was marked by two themes. Firstly, the University recognised that if it was to be fully South African, it would have to move beyond academic non-segregation to be fully inclusive. It would have to face the consequential and increasing clashes with a government determined to legislate for segregation and enforce the doctrine of apartheid. And secondly, the University intended to transform into a leading research institution.

Before World War II, the University was largely a teaching university and its students were mostly undergraduates. The research undertaken was sporadic, though in some cases notable. A research committee was appointed for the first time in 1945. The next 75 years saw a great expansion of research and scholarly work such that the UCT of 2014 has a greater proportion of highly rated researchers and gains significantly more research grants and awards than any other South African University.

The 1980s and 1990s were characterized by the deliberate and planned transformation of the student body. This was aided by the establishment of the Academic Development Programme aimed at helping students from disadvantaged educational and social backgrounds to succeed and the desegregation of student residences. As a result, a student body that was 90% white in 1979, when UCT marked its 150th anniversary, is in 2014 more than 50% black. The total student enrolment of just above 26 000, includes international students drawn from over 100 countries, a significant proportion of which are from SADC states. Particular emphasis is placed on postgraduate studies and more than 20% of these students will be enrolled in master's and doctoral programmes. A growing number of postdoctoral fellows contribute substantially to the research endeavours and reputation of the University (UCT has more than a third of the total number of post docs in South Africa).

UCT continues to work towards its goal to be Africa's leading research university. Its success can be measured by the scope of study it offers and the calibre of its graduates.

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## **VISION AND MISSION**

### **UNIVERSITY OF CAPE TOWN**

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#### **Vision**

An inclusive and engaged research-intensive African university that inspires creativity through outstanding achievements in learning, discovery and citizenship; enhancing the lives of its students and staff, advancing a more equitable and sustainable social order and influencing the global higher education landscape.

#### **Mission**

UCT is committed to engaging with the key issues of our natural and social worlds through outstanding teaching, research and scholarship. We seek to advance the status and distinctiveness of scholarship in Africa through building strategic partnerships across the continent, the global south and the rest of the world.

UCT provides a vibrant and supportive intellectual environment that attracts and connects people from all over the world.

We aim to produce graduates and future leaders who are influential locally and globally. Our qualifications are locally applicable and internationally acclaimed, underpinned by values of engaged citizenship and social justice. Our scholarship and research have a positive impact on our society and our environment.

We will actively advance the pace of transformation within our University and beyond, nurturing an inclusive institutional culture which embraces diversity.

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# THE UNIVERSITY OF CAPE TOWN DONOR ROLL

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*The University of Cape Town gratefully acknowledges the sustained contributions of the following partners. Their generosity has assisted us toward our goals of improving student access to tertiary education and promoting curriculum, staff and student transformation; increasing our research capacity; and implementing programmes that promote social engagement and community upliftment.*

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- Vice-Chancellor's Circle: formerly R100 000 – R250 000, now R250 000 – R500 000;
- Dean's circle: formerly R60 000 – R100 000, now R100 000 – R250 000;
- Friends of UCT: formerly <R60,000, now <R100,000.

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*We apologize for any omissions or errors. If you would like to query your donations totals, circle membership, or any other matter related to your gifts to UCT, please email [giving@uct.ac.za](mailto:giving@uct.ac.za).*

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*Welcome, Wamkelekile, Welkom – today is not the end of your relationship with the university but the beginning of a new phase in your continuing relationship with UCT, one that you share with the UCT community of over 100 000 alumni.*

*Diverse as this community is, the shared experiences of a critical academic ethos and a spectacular campus make for a strong network that has a wide footprint, not only in South Africa, but across the continent and the globe.*

*We set a great store by our links with our alumni, and indeed the links alumni have with each other. We promise that we will be in touch, and ask you in turn to let us know not only your current contact details but also, from time to time, something of your lives and where you are in your careers.*

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*Your alma mater looks forward to welcoming you back,  
whether to a public lecture, a leadership forum, your class reunion,  
or just an informal call!*

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