GRADUATION CEREMONIES

DECEMBER 2016

CONTENTS

NATIONAL ANTHEM

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.

FACULTIES OF ENGINEERING AND THE BUILT ENVIRONMENT, HUMANITIES AND LAW

ORDER OF PROCEEDINGS

Academic Procession.
(The congregation is requested to stand as the procession enters the hall)

The Vice-Chancellor will constitute the congregation.

The National Anthem.

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

Musical Item.

Welcome by the Acting Deputy Vice-Chancellor, Professor A Mall.

Professor Mall will present Alphose Zingoni for the award of a Fellowship.

Professor J Hambidge will present Zoë Wicomb to the Vice-Chancellor for the award of an honorary degree.

Professor Mall will invite Sipho Pityana to address the congregation.

Address by Sipho Pityana.

The graduands and diplomates will be presented to the Vice-Chancellor by the Deans of the faculties.

The Vice-Chancellor will congratulate the new graduates and diplomates.

Professor Mall will make closing announcements and invite the congregation to stand.

The Vice-Chancellor 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.)

FELLOWSHIP

The election by Senate of a member of the faculty to be a fellow recognises sustained and original contributions through research or creative endeavour.

The fellows in the Faculty of Engineering and the Built Environment and their years of election are:

2005: MG Alexander
1998: GA Ekama
2015: STL Harrison
2013: AE Lewis
2013: GN Nurick
2015: E van Steen
2012: VJ Watson

The following member of the Faculty of Engineering and the Built Environment has been elected to a fellowship:

Alphose Zingoni
Professor of Structural Engineering & Mechanics
Department of Civil Engineering

Alphose Zingoni earned his PhD from Imperial College London in 1992, where he also held a prestigious fellowship of the Royal Commission for the Exhibition of 1851 for two years (1992-94). He served as Dean of the Faculty of Engineering at the University of Zimbabwe for 3 years (1997-1999). In 1999 he took up appointment at UCT as an associate professor, and was promoted to full professor in 2002. From 2008 to 2012, he served a 5-year term as Head of the Department of Civil Engineering.

Zingoni has made original contributions in two main areas of engineering research, namely: (i) development of new computational formulations for problems involving symmetry in structural mechanics; (ii) development of more effective methods for the practical analysis of shell structures. The high quality and international impact of his work was recognised in 2005, when the NRF awarded him a B2 rating. At the 2011 re-evaluation of his research, he was successful in retaining the B2 rating, which he still holds. Besides publishing more than 80 peer-reviewed articles, he has also written 3 books (two of these on his own), and edited 5 conference volumes.

In the area of computational formulations, Zingoni is considered a pioneer in the use of group theory (a branch of mathematics) in studying problems involving symmetry in structural mechanics. His original work has focused on developing appropriate group-theoretic formulations for the vibration of a number of important classes of problems in structural mechanics (cable nets, space grids, plates, beams and trusses). These formulations have the benefit of reducing computational effort, a particularly important consideration in large- scale engineering computations. Zingoni's work has also shed new insights on the vibration of structures with complex symmetry.

FELLOWSHIP (CONTINUED)

The work has been published in some of the top journals in the field. A significant recognition of his work came in 2012, when he was invited by the Royal Society of the UK to present his findings at one of their themed meetings. He has just authored a new book *"Vibration Analysis & Structural Dynamics for Civil Engineers"* (CRC Press, Taylor & Francis, 2015), which has been hailed as a unique contribution to the literature, through its innovative use of group theory in explaining vibration phenomena.

In the area of shell research, Zingoni has pursued an analytical approach in studying shell problems, by introducing mathematical simplifications into the governing relationships in order to obtain usable solutions. The main contribution of this work has been (i) the development of original closed-form results for a wide variety of shell structures in civil engineering, (ii) the shedding of important insights on shell behaviour and the provision of practical guidance on design of shell structures. The findings have been published in leading international journals in the field (*Engineering Structures; Thin-Walled Structures;* etc). Zingoni's most significant work in this area remains his seminal book *"Shell Structures in Civil and Mechanical Engineering"*, published in 1997 by Thomas Telford (the publishing arm of the Institution of Civil Engineers, London). This book is now used in many countries around the world, particularly in the USA, Germany, UK, Australia, Japan, Canada and South Africa. Zingoni has been commissioned to write an expanded second edition, which he is currently working on, and will be released next year.

Other international recognitions of Zingoni's work include: (i) election in 2005 to Fellowship of the London-based Institution of Structural Engineers (the only academic in South Africa to hold this honour); (ii) election in 2008 to Fellowship of the South African Academy of Engineering; (iii) election in 2011 to Fellowship of the Zurich-based International Association for Bridge & Structural Engineering (the first South African to be accepted into this category). He currently sits on the editorial boards of 7 international journals in his field.

Zingoni has demonstrated "original, distinguished academic work", as well as a strong commitment to the mission of UCT. His H-index of 13 is consistent with someone working in an area that is relatively unknown to most engineers (symmetry and group theory), and that has a relatively small pool of researchers, but this should not detract from the originality and high quality of his work, as evidenced by his NRF rating, the excellent reviews of his most recent book, and the strong international recognition he enjoys.

HONORARY DEGREE

Zoë Wicomb

DLitt (honoris causa)

Wicomb, an academic and novelist, is also among the most significant and widely-read literary interpreters of South Africa. There are over a hundred critical studies that engage with each of her first two works, *You Can't Get Lost in Cape Town (1987)* and *David's Story (2000)*, a comparable scholarly impact to the work of Nobel Laureate Nadine Gordimer. JM Coetzee describes *David's Story* as "a tremendous achievement and a huge step in the remaking of the South Africa novel".

Wicomb writes from the political subject position of black womanhood. Yet, while her fictional and critical oeuvre pricks holes in the pretensions of patriarchy and intervenes in structures of racialisation, it simultaneously refuses to retreat into identity politics, resisting in turn the complacencies or violence such politics can spawn.

Wicomb was the inaugural winner of Windham Campbell Literature Prize for Fiction in 2013 – a prestigious global writer's prize for an *oeuvre* rather than single work, and now one of the largest literary prizes in the world. She has further had the unusual distinction for a living South African writer of her fiction being the sole focus of three international conferences each of 2-3 days in duration and hosted, respectively, by the School of Oriental and African Studies at the University of London; the University of Stellenbosch; and York University.

Besides her fiction, she is the author of a number of incisive critical articles on South African and southern African literature and art, including the highly influential essays "Shame and identity: The Case of the Coloured in South Africa" (1998) and "To Hear the Variety of Discourses" (1990; rpt. 1996), and "Five Afrikaner Texts and the Rehabilitation of Whiteness" (1998).

Wicomb is sought after as a reader and speaker at international literary events, and has held a number of fellowships and writer residencies, including at the University of Cape Town, the University of Macau and (forthcoming) at STIAS. She is the 2015 Chair of Judges of the Caine Prize for African Fiction (the most prestigious and influential Africa-wide literary prize), and has been selected as one of two South African writers to participate in the "Literatures of the South" programme that was launched in Buenos Aires in September 2015. She is Emeritus Professor at the University of Strathclyde, where she was previously a professor of postcolonial literature and creative writing.

NAMES OF GRADUANDS

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

1. FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Dean: Professor A Lewis

DEGREE OF MASTER OF ARCHITECTURE (PROFESSIONAL)

*Alain Divan Beukes
Nicole Simone Lai Lan

DEGREE OF MASTER OF ENGINEERING

In Radar & Electronic Defence:
*Etienne Francois Bauermeister

In Structural Engineering:
*Kamlin Moodley

In Transport Studies:
*Marco Rodrigues Coelho
Samuel Hendrik Lombard

In Water Quality Engineering:
*Gerard De Swardt

DEGREE OF MASTER OF PHILOSOPHY

In Engineering Management:
Richard Steven Ball

In Energy Development Studies:
Stefan Charles Louw
*Victoria Daniela Parker
Adam Alexander Young

In Geomatics:
*Aciano Anastacio Lipangue

In Urban Infrastructure, Design & Management:
*Alan Nicholas Cameron
Marko Dragan Petrik
Raudhiyah Sahabodien
Caroline Maria Madeleine Sohie

DEGREE OF MASTER OF SCIENCE IN ENGINEERING

In Chemical Engineering:
*Mark Kinoti Gituma
*Yannick Moise Ilunga
Clayton Jeffrey Jacobs (with distinction)
Nicole Mulenga Malanda
Ngoni Pepukai Mhonde
Ayesha Rawoot
Nanji Ruth Sheni
*Matthew Lee Stevenson (with distinction)

In Civil Engineering:
*Hosea Mwalo Arito
*Yorm Kofi Amesu
Sean Craigen Cooke (with distinction)

In Electrical Engineering:
*Joseph Kingsley Attom Bentil
Imran Chotia (with distinction)
*Henno Kriel
Nyasha Albert Mukudu
Jeremiah Nzioka Mutungi
Charity Muyunda (with distinction)
Mcbath Rwodzi
Lavender Tsongoro
Ryno Strauss Verster

In Geomatics:
Muhammad Zaid Gangraker
Matthews Siphiwe Mphuthi
*Peter Sonndi Muvhali

In Materials Engineering:
Royden Luke Weyer (with distinction)

In Mechanical Engineering:
*Dylan Murphy Blakemore (with distinction)
Winston Guess (With distinction)
*Roelof Johannes Hendrik Pottas
*MohammadMehdi Shirzadi
Muhammad Ghalib Stracey (with distinction)

In Radar & Electronic Defence:
*Dane Paul du Plessis
*Stephanie Cavale Jonkers

In Structural Engineering and Structural Material:
*Ezekiel Kusimba Arito

In Sustainable Energy Engineering:
Cole Douglas Noble (with distinction in the dissertation)

In Water Quality Engineering:
Benjamin Murray Biggs

DEGREE OF MASTER OF SCIENCE IN PROJECT MANAGEMENT

Ndabezinhle Dube
Nomfusi Leticia Gumede
*Tendai Kanjanda
Noxolo Mabumbulu
Sikholiwe Ntoyanto

DEGREE OF MASTER OF SCIENCE IN PROPERTY STUDIES

*Hanna Boodhun
*Marc Alexander Frew
Fumani Tintswalo Shisana
Jesse Jefferson Sui Sang How
*Dale Mandley Warburton

2. FACULTY OF HUMANITIES

Dean: Professor S Buhlungu

ADVANCED CERTIFICATE IN EDUCATION IN SCIENCE

Andile Mde

POSTGRADUATE CERTIFICATE IN EDUCATION

In Foundation Phase Teaching:
*Hlengiwe Thobeka Mkhize

POSTGRADUATE DIPLOMA IN MUSIC PERFORMANCE

*Andries Barkhuizen
*Siyabulela Sikhokele Ntlale (with distinction)

*Thobela Ntshanyana (with distinction)
*Makudupanyane William Senaoana (with distinction)

DEGREE OF BACHELOR OF SOCIAL SCIENCE

*Otai Steven Jjumba

DEGREE OF BACHELOR OF ARTS IN FINE ART

*Sisipho Ngodwana

DEGREE OF BACHELOR OF ARTS HONOURS

In English Studies:
*Daniel Micah Molteno Corder

In Film and Television Studies:
*Maremanda Salokya

In Historical Studies:
*Aliyah Allie

In Philosophy:
*Rehan Pieter Visser

DEGREE OF BACHELOR OF EDUCATION HONOURS

*Thabisa Pride Hlwatika

DEGREE OF BACHELOR OF LIBRARY AND INFORMATION SCIENCE HONOURS

*Lancelot Loyiso Linda Matomela

DEGREE OF BACHELOR OF MUSIC HONOURS

In Dance:
*Tania Lea Vossgatter

DEGREE OF BACHELOR OF SOCIAL SCIENCE HONOURS

In Social Policy and Management:
*Farhaanah Parker

DEGREE OF MASTER OF ARTS IN FINE ART

*James Malcolm Macdonald (with distinction)

DEGREE OF MASTER OF ARTS IN NEUROPSYCHOLOGY

Alyssa Raaista Amod
Dale Chad Stephen (with distinction in the dissertation)
Sivenesi Subramoney (with distinction)

DEGREE OF MASTER OF ARTS

In African Cinema:
*Perivi John Katjavivi

In African Languages and Literature:
Amandla Ngwendu (with distinction)

In Clinical Psychology:
Claire Susan Battiston-Weggelaar
Chantelle Silva De Abreu
*Heinrich Willem Goosen
*Slindile Nonjabulo Mbatha
Vongayi Munatsi
Zorina Noordien
Nurain Tisaker

In Documentary Arts:
*Mia Cilliers
*Roxanne Dalton (with distinction)

In Economic History:
Julia Johanna Gessner (with distinction in the dissertation)
*Xin Xiao

In English Language and Literature:
Nicholas Ernest Mulgrew (with distinction)

In Environmental and Geographical Studies:
Chevon Julaire Janis Griffiths
*Kent Anson Locke

In French:
Marali Burger (with distinction)
*Isabelle Leger-Broschart (with distinction)
Kenda Henry Muzodi

In Historical Studies:
*Eve Wong (with distinction)

In International Relations:
*Annalina Blakeslee Kazickas (with distinction in the dissertation)

In Language, Literature and Modernity:
*Wesley Anderson
Mercedes Angelina Dressler (with distinction)
Kirsten Elizabeth Smart
*Sarah Johanna Smit (with distinction)
*Sean Philip Smith (with distinction in the dissertation)

In Linguistics:
*Rachel Botsis
Chikomborero Ngaatendwe Chamanga

In Media Theory and Practice:
*Joanne Gloria Carew (with distinction)
Lara Adriana Birgitta Graff
*Caitlin Hayley Macleod (with distinction)
*Jacqueline Ruth Murray (with distinction)
Zainab Slemang

In Politics:
Jamy Felton
*Sunita Menon
Jennifer Margaret Rust

In Psychological Research:
*Wade Byron Profe (with distinction)

DEGREE OF MASTER OF EDUCATION

In Applied Language and Literacy Studies:
*Gregory Elkan Cahl

In Education:
*Eduard George Campbell (with distinction)
*Thomas William King (with distinction)

In Information Communication Technologies:
Juliet Magdalene Eiseb
Mary-Ann Crystal Fife (with distinction)
*Lee Anne Royston (with distinction)

In Mathematics Education:
*Julianne Kathryn Ward (with distinction)

DEGREE OF MASTER OF PHILOSOPHY

In Development Studies:
Patrice Carter (with distinction in the dissertation)

In Education in Information Communication Technologies:
*Lize-Mari Hitge

In Heritage and Public Culture:
Robyn-Leigh Cedras (with distinction in the dissertation)

In Justice and Transformation:
*Fenella May Buchanan Henderson-Howat
*Carilee Osborne (with distinction)
Rolien Rozemarijn Zonneveld

In Library and Information Studies:
Glynnis Samantha Johnson (with distinction)
Lydia Nyantakyi-Baah
Rosekel Omenyo (with distinction)

In Public Policy and Administration:
Fiona Simakuhle Dyosi (with distinction)

In Mathematics Education:
Renee Margaret Rix (with distinction)

DEGREE OF MASTER OF SOCIAL SCIENCE

In Clinical Social Work:
*Pauline Clare de Villiers
*Kelebogile Tlhako Simula

In Environmental and Geographical Studies:
Amy Lynne Weimann (with distinction)

In Global Studies:
Ncumisa Happiness Willie

In International Relations:
*Mohammed Saif Islam
*Davide Rasconi

In Political Studies:
Catrina Laura Godinho (with distinction)

In Psychology:
Simone Maxine Peters (with distinction)

In Social Anthropology:
*Litha Buhle Zukile Sokutu

In Social Development:
Miriam Kanengoni
Maureen Mungule

In Social Work:
Kwanele Evidance Shishane (with distinction)

In Sociology:
*Sarah Badat
Kirsty Allen Button (with distinction)

3. FACULTY OF LAW

Dean: Professor P Andrews

DEGREE OF BACHELOR OF LAWS

*Cathy-Ann Potgieter

DEGREE OF MASTER OF LAWS

Katherine Lindsay Timoney

In Commercial Law:
*Kangwa-Musole George Chisanga
Ingeborg PTB Collett (with distinction)
Gwiso Pena Dube
Christina Kvarekval Mack
Pamela Mombeyarara
*Christina Nyandoro
Charmaine Taati Van Der Smit
*Byron Titmas
Muteber Yalcin (with distinction)

In Comparative Law in Africa:
Resat Onur Er

In Constitutional and Administrative Law:
Grant Sinclair Caswell

In Environmental Law:
*Katherine Handley (with distinction)
Tracy-Ann McGivern
Pia Teresé Rebelo

In Human Rights Law:
*Elin Felicia Kyrk (with distinction)

In Intellectual Property Law:
*Johani Maree

In International Law:
Susan Wanjiru Kimani (with distinction)

In International Trade Law:
*Vyonna Achieng Bondi
Karin Stephanie Deichmann
*Ester Joosten
*Chiedza Zimudzi

In Marine and Environmental Law:
Bernard Hein Forrer

In Public Law:
*Thorne Armando Godinho (with distinction)
Tshepo Bogosiboile Mosaka (with distinction)
*Svenje-Lies Wilke

In Shipping Law:
Beth Eleanor O'Connor (with distinction)
Ane Roedstoel (with distinction)
Joyce Shireen Uises

DEGREE OF MASTER OF LAWS IN COMMERCIAL LAW

Kimberley Elizabeth Barker
Susan Margaret Chibomba
Chanda Chungu (with distinction)
*Emil Dirk Conradie (with distinction)
Andrea Luca Gilardi Costa
Nivash Daya
Thomas Bart Willem de Visser
*Wajdah Fataar
Anthony Maitethia Gitonga
Julieth Gudo
*Olivia Sabina Hamilton Russell
Keshia Deija Harrilall
Farah Jakoet
*Chilombo Kambole Malama
Isaac Aldridge Maregele
Melody Nyendwa Mayaka

*Ryan David McKerrow (with distinction)
*Portia Ntombifuthi Mlambo
Bongani Samora Moses
*Lesia Benedict Motofo
*Chansa Mulela
Resh Nel
Shona Anne Nicoll
*Hendry Owen
*Annatoria Paradzayi
Michael Wilhelm Prinsloo
Jason Nkhosinathi Sewanyana
Tamsyn Simon (with distinction)
Duane Colin Starkey
Ryan Keith Tutt
*Jacyntha Twynam
Megan Viljoen
Dirk Winkler

DEGREE OF MASTER OF LAWS IN DISPUTE RESOLUTION

*Iago Davids (with distinction)
Dominique Herbig (with distinction)
*Rudi Kotze
Mkhululi Makaya
Nathanael Reuben Mauritz
*Grace Vongai Zvidozvashe Moyo
Juanita Lee-Ann Pandy
Ayden Peter Thompson

DEGREE OF MASTER OF LAWS IN INTELLECTUAL PROPERTY LAW

*Tatenda Benjamin Chiroro
Catherine Waithira Karanja
Sebastian Kunstmann
Mitchell Richard Friederich Luthi (with distinction)
Jillian Muthoni Ndirangu
*Shumirai Pipawa Nyashanu
Lindy Rood (with distinction)
*Brigit Thandi Rubinstein
*Waldeline Ndatoolewe Kula Simson
Sandra Waletzko

DEGREE OF MASTER OF LAWS IN INTERNATIONAL TRADE LAW

*Yasmin Raquel Allen
Julian Maria Aranguren
Andrew Desmond Brasington
Jess Donnelly (with distinction)
*Jeniffer Muthoni Makobu
Lilian Mbaeva
Sinikiwe Mzezewa
Stefanie Niggemeier
*Amrin Panjwani (with distinction)
*Simon Moritz Bernhard Ruf
Johannes Pendapala Uusiku

DEGREE OF MASTER OF LAWS IN LABOUR LAW

Natalie Anne Badenhorst
Mlungisi Wilberforce Bukani
Niel Burger
Willem Wouter du Plooy
Wilbur Leonardo Van Niekerk

DEGREE OF MASTER OF LAWS IN SHIPPING LAW

*Jaak Kaabel
*Lirette Louw (with distinction)
Kamalesh Naidoo
Zayn Sachin Naidoo
Candice Leigh Peck
Pascale Towers (with distinction)

DEGREE OF MASTER OF LAWS IN TAX LAW

*Catherine Fiona Bobo
*Elke Patricia Haupt
Megan McCormack
*Pieter Simon Richard Moens
*Mthokozisi Tshuma

DEGREE OF MASTER OF PHILOSOPHY

In Criminal Justice:
Anna-Maria Kok

In Criminology, Law and Society:
*Anneke Eichstedt

In Human Rights Law:
Pretty Mubaiwa

In Public Law:
Kimberly Dawn Thomas (with distinction)

DEGREE OF DOCTOR OF PHILOSOPHY

In Commercial Law:
Elizabeth Biney
Thesis title: *Inequality of opportunity: the plight of foreign workers in South Africa*

Elizabeth Biney holds a Bachelor of Social Science and an Honours degree in Organisational Psychology, and a Master of Philosophy degree in Labour Law from UCT. Her PhD emerged as a result of her research work for her Master's degree in the same field.

Elizabeth Biney's thesis aims to advocate for a nuanced human rights discourse on the rights of unauthorised foreign workers – one that lends support for an alternate approach to handling the rights of foreign nationals, particularly unauthorised foreigners, working in South Africa. She explores disparities embedded in South African immigration, labour and social policies. She does that through an examination of the legal and administrative barriers to access to social protection for foreign workers, barriers that can compromise their social position and leave them exposed and susceptible to exploitation, xenophobia, and poverty. Her research applies theory about equality of opportunity in a labour law context to prescribe a different approach from that presently pertaining, and to address South Africa's current "immigration problem". Her goal is to suggest structures and policies to manage the migration process effectively to benefit all stakeholders.

Supervisor: Professor R le Roux (Commercial Law)

In Private Law:
Anthony Chima Diala
Thesis title: *Judicial recognition of living customary law in the context of women's matrimonial property rights in South-East Nigeria*

Anthony Diala holds a University of Pretoria LLM in Human Rights and Democratisation, and degrees from the Nigerian Law School, Abuja, and Enugu State University, Nigeria. His doctoral work arose from his teaching legal systems and other courses at Madonna University, Nigeria.

Anthony Diala's thesis investigates judicial recognition, in modern South-East Nigeria, of living customary law as it pertains to women's matrimonial property rights. Suggesting that the manner in which people adapt customs to socio-economic change should guide judicial and legislative approaches to customary law, it aims to expand theory about living customary law leading to judicial recognition of such adaptations of custom. Concluding that, to the detriment of women's property rights, the courts barely recognise living customary law, the thesis shows that underlying this problem are a colonial legacy of rule-based adjudication that disregards values that inform customary law; judges' failure to discover how people adapt customs to socio-economic change; judges' lack of awareness of customary law's process-oriented character; and their non-resort to constitutional values that could promote women's matrimonial property rights. Connected to these issues is a failure of the Constitution to define customary law's status in the legal system or to provide for matrimonial property rights.

Supervisor: Professor Dr CN Himonga
(Private Law)

James Michael Wink
Thesis title: *The Law is a factish*

James Wink holds an LLB from UCT. His doctoral work emerged from an Independent Research Paper completed in the Final Year of his study for the LLB.

Taking its cue from the work of Bruno Latour, James Wink's thesis defends the argument that the law is a factish, that is, a specific blend of social and natural reality. His thesis develops a non-modern model of paradoxical understanding as the philosophical foundation for a theory of factish law. It accommodates an account of law that jettisons the traditional clash between positivism and natural law by preferring to draw upon insights from each tradition simultaneously. Ultimately, the thesis develops a model of factish legality that explains the process by which the law is created whilst also grounding it in an alternative understanding of the roles that the rule of law and the separation of powers play in that process. In addition, James Wink shows that factish legality warns against the distortionary effects of South Africa's celebrated Bill of Rights; and that it permits a critical consideration of both the relationship between law and violence and contemporary demands for 'African' South African law.

Supervisor: Professor J Barnard-Naudé
(Private Law)

In Public Law:
Mark Abraham Gabriel
Thesis title: *Reforming Hudud ordinances to reconcile Islamic criminal law with international human rights law*

Mark Gabriel is a graduate of Al-Azhar University in Cairo and former Lecturer of Islamic Studies. He holds a master's degree in Religion from SES in North Carolina and a second master's degree, as well as a PhD in World Religion from FCU in Florida. He has been advisor on counter terrorism and Middle Eastern affairs to the FBI and has taught courses in different universities in the United States of America and across the world.

Mark Gabriel's thesis deals with Islamic criminal law, more specifically the hudud ordinances and with a focus on the punishments they dictate. These include stoning for adultery, cutting the hand of a thief and the death penalty for apostasy. His thesis demonstrates that a reformation of the hudud punishments, to reconcile them with international human rights law, is possible; and he develops a model to reform them. The aim of Mark Gabriel's thesis is to stimulate a dialogue in Muslim society on the topic of the reformation of Islamic criminal law and its reconcilability with international human rights law.

Supervisor: A/Professor W Amien
(Public Law)

Ngaya Anael Munuo
Thesis Title: *Towards the design of a reflexive regulatory framework to 'Reduce and Control Emissions from Deforestation and Forest Degradation and Enhancing Carbon Stocks' (REDD+): a perspective from select developing countries*

Ngaya Anael Munuo has a BA, BA(Hons) and MPhil (Law) from the University of the Western Cape. His doctoral research emerged as a result of his interest in a climate change project while he was engaged at the Peace Parks Foundation in Stellenbosch.

Ngaya Anael Munuo's thesis aims to provide a first step towards the development of an optimal and feasible model legislative framework to give effect to REDD+ ('Reduce and Control Emissions from Deforestation and Forest Degradation and Enhancing Carbon Stocks). REDD+ is a mechanism under the auspices of the United Nations Framework Convention on Climate Change for a post-2020 climate change regime. It aims to compensate developing countries for desisting from land use change. It does that by creating financial value for the carbon stored mainly in forests and beyond and thereby intending to reduce deforestation and forest degradation. These goals are met by including the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in the REDD+ mechanism. The end result of Ngaya Anael Munuo's thesis is a development of reflexive law as a governance model to give effect to REDD+.

Supervisor: Professor J Glazewski
(Public Law)

Benson Chinedu Olugbuo
Thesis title: *The exercise of prosecutorial discretion during preliminary examinations at the international criminal court*

Benson Olugbuo is from Abia State, Nigeria. He holds an LLB from the University of Nigeria, and an LLM from the University of Pretoria.

Benson Olugbuo's thesis examines whether the International Criminal Court's prosecutor's interpretation of article 53 of the Rome Statute promotes peace, justice and the maintenance of international security. Through reviews and discussions of the principles of complementarity, interests of justice, and the prosecutor's powers, Olugbuo argues that article 53's correct interpretation allows the prosecutor to discontinue investigations of crimes within the Court's jurisdiction. He recommends that the prosecutor should adopt a broad interpretation of this principle in the resolution of the conflicts in Sudan and Uganda. In those cases, he suggests, this would allow for shared responsibilities between the African Union, the Court and United Nations Security Council in investigations and prosecutions of international crimes and the fight against impunity. The thesis concludes that article 53 of the Rome Statute grants the prosecutor broad discretionary powers to discontinue investigations and prosecutions of international crimes, albeit subject to review by the Pre-Trial Chamber of the Court which reinforces the status of the International Criminal Court as a court of last resort.

Supervisor: Professor D Chirwa (Public Law)
Co-supervisor: Dr H Woolaver (Public Law)

4. FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Dean: Professor A Lewis

DEGREE OF DOCTOR OF PHILOSOPHY

In Chemical Engineering:
Olubode Caleb Adetunji
Thesis Title: *Hybridization of electrical resistance tomography to population balance model for accurate bubble column reactor hydrodynamic parameter predictions*

Olubode Adetunji earned his BSc from University of Ibadan, Nigeria and obtained a postgraduate diploma from the University of Stellenbosch. He then moved to UCT where he obtained an MSc(Eng) in Chemical Engineering and continued to pursue his PhD studies in the same department.

Olubode Adetunji's thesis evolved out of a need for bubble column reactor enhanced designing, scale-up and performance evaluation for effective product yield using a local-capital cost, a non-invasive, a non-radioactive, a portable measurement technique of hydrodynamic parameters at both high spatial and temporal resolution with potential usefulness in both opaque and transparent systems. A novel contribution from his studies was using the Electrical Resistance Tomography (ERT) measurement technique coupled to gas disengagement process with the framework of Population Balance Model (PBM) to develop a hybrid prediction technique meeting the hydrodynamic measurement requirements. The gas disengagement process allowed for interpreting ERT measurements of high temporal resolution to compute the boundary conditions for the PBM yielding high spatial parameter resolution in the development of the hybrid prediction technique. The hybrid-based hydrodynamic parameter predictions obtained from this model are in good agreement with results from alternative experimental and simulation approaches found in the literature. The developed hybrid technique can be extended for unsteady state inhomogeneous hydrodynamic parameter predictions in a bubble column reactor.

Supervisor: A/Professor R Rawatlal (University of KwaZulu-Natal, Chemical Engineering)
Co-supervisor: A/Professor A Mainza (Chemical Engineering)

Mariam Ajam
Thesis Title: *Phenols and aromatic methyl ethers from biomass pyrolysis oil: implications for jet fuel stability*

Mariam Ajam holds a BScHons in Chemistry from UCT and an MSc in Chemistry from the University of Johannesburg. Her doctoral research arose from her involvement in synthetic jet fuel research at Sasol where she is a senior scientist.

Mariam Ajam's thesis is the first step in the development of renewable jet fuel, derived from pyrolysed biomass. The use of biomass pyrolysis-derived kerosene has, until now, been unfeasible because of the presence of high quantities of phenolic compounds which are detrimental to the thermal stability of such a fuel. This study has successfully demonstrated a number of options for the production of thermally stable kerosene. A two-stage, severe hydrotreatment of biomass pyrolysis oil produced kerosene with a very low oxygen content. The severe conditions necessary, however, make such a process economically impractical. A less severe hydrotreatment, followed by etherification of any phenols present to methyl ethers, has been used to produce a novel kerosene which is not only thermally stable but also meets critical jet fuel properties such as freezing point and acid number. Quartz crystal microbalance measurements on thermo-oxidatively stressed fuels, which contained methyl ethers, did not reveal significant quantities of deposits, unlike measurements on fuels which contained the phenolic precursors of these ethers. Refractory phenols, which could not be etherified, did not lead to significant deposit formation. This investigation demonstrates that woody biomass, previously intractable, is a viable feedstock for renewable jet fuel.

Supervisor: Dr C Woolard (Chemical Engineering)
Co-supervisor: Professor E van Steen (Chemical Engineering)

Gerard Malefane Leteba
Thesis Title: *Synthesis, characterization and catalytic investigations of Pt-based binary (bimetallic) and ternary (trimetallic) nanoparticles*

Gerard Leteba has a BSc in Biotechnology, Biochemistry and Microbiology, a BScHons in Materials Science and MSc in Materials Engineering from UCT. His PhD emerged from his passion for developing nanoparticle preparation methods and integrating them into relevant applications.

Gerard Leteba's thesis details work on the design of novel synthetic strategies for the preparation of platinum-based binary (bimetallic) and ternary (trimetallic) nanocatalysts containing nickel (Ni), cobalt (Co) and/or vanadium (V) with controlled surface composition. The materials were investigated for application in renewable electricity generation in fuel cells through the oxygen reduction reaction. Gerard Leteba conducted a thorough investigation of a wide range of nanoparticle preparation parameters and strategies as a foundation for his work. Advanced characterisation techniques allowed for the detailed description of the shape, size and composition of the prepared materials. In the final step physical properties of nanocatalysts could then be related to their performance as fuel cell catalysts. The result is a study that provides important contributions towards the further understanding of the influence of active surface morphology and composition on the oxygen reduction reaction activity of a catalytic system.

Supervisor: Dr P Levecque (Chemical Engineering)
Co-supervisor: Professor C Lang (Department of Engineering, Macquarie University)

Lucy Jane Little
Thesis Title: *The development and demonstration of a practical methodology for fine particle shape characterisation in minerals processing*

Lucy Little completed her BSc (Engineering) in Chemical Engineering at UCT in 2012. She then began her MSc research with the Centre for Minerals Research, and upgraded to a PhD after making substantial progress.

Lucy Little's thesis explores the application of a modern technology (Automated Scanning Electron Microscopy with Energy Dispersive X-Ray Spectrometry) to an old problem – the need to quantify the shape characteristics of ore particles to better understand, and therefore optimise, minerals processing operations. The applicability of existing shape descriptors is assessed, and a novel approach is developed to characterise particle shape using two simple shape descriptors in conjunction. Lucy Little then demonstrates how her shape characterisation methodology can be applied and adapted to facilitate research in essential minerals processing operations, focusing on comminution (grinding) and flotation (separation of minerals based on hydrophobicity). One of the key roles of the highly energy intensive comminution process is to liberate finely-grained valuable minerals from gangue minerals within the host rock to allow for their subsequent separation. In this study, analysis of conservation of grain shape provided valuable insight into the critical role played by phase boundary fracture in the liberation and subsequent recovery of platinum group minerals from a South African ore.

Supervisor: Dr M Becker (Chemical Engineering)
Co-supervisors: Professor A Mainza (Chemical Engineering); Mrs J. Wiese (Chemical Engineering)

Molefi Matsutsu
Thesis Title: *Pt and Pt-Pd cluster interaction with graphene and TiO2 based supports: a DFT study*

Molefi Matsutsu obtained a BSc(Eng) and MSc(Eng) in Chemical Engineering from UCT. The focus of his research was to understand the role of surface defects on carbon and TiO2 supports on supported Pt and Pt-Pd nanoparticles using density functional theory.

Nano-sized materials have interesting properties which can be maintained if these materials are well-dispersed on a support. Molefi Matsutsu's thesis explores the use of Pt38 and Pt32Pd6 clusters as model nanoparticles. Graphene functionalised with OH and COOH groups was used as model of the carbon support with partially reduced (oxygen vacancy) and hydroxylated (surface OH groups) TiO2 as model surface defects on TiO2 supports. The surface of support materials may consist of defects. He shows that surface defects enhance binding of the particles to the support. He further goes on to show that the defects also modify the electronic properties of the supported particles which ultimately may affect the binding strength of adsorbate molecules on the particles thereby affecting the reactivity of the catalyst. He also indicates that the support may induce segregation in Pt32Pd6 particles with Pd moving towards the cluster-support interface. The altered segregation pattern will also alter the reactivity of the alloy nanoparticle.

Supervisor: Professor E van Steen (Chemical Engineering)

Thandazile Moyo
Thesis Title: *An electrochemical and leach study of the oxidative dissolution of Chalcopyrite in ammoniacal solutions*

Thandazile Moyo has a BSc degree from the National University of Science and Technology in Zimbabwe. Her PhD project, upgraded from MSc, ran under the Minerals to Metals Research Initiative at UCT, which aims to connect fundamental work in metallurgical disciplines with the broader industrial context in which they are applied.

Thandazile Moyo's thesis investigates the leaching behaviour of chalcopyrite (CuFeS2), a critical copper-bearing mineral, in aqueous solutions of ammonia at ambient and elevated temperatures. The study used electrochemical techniques (voltammetry and amperometry on a rotating disk electrode) and conventional leach tests, together with electron microscopic surface characterisation techniques, to obtain a comprehensive understanding of the reaction steps involved. The study conclusively shows that the electron acceptor in the leach reaction is cupric and not oxygen as previously assumed,

and that the anodic dissolution involves a seven-electron transfer reaction, producing thiosulphate in solution. The iron deports to non-stoichiometric iron-hydroxy-sulphate compounds on the mineral surface, which shift the electrochemical environment and can become inhibitory to the reaction if allowed to build up over time. In agitated leach systems continuous abrasion of the surface layer removes this constraint. The study has important implications for alternative extraction systems for chalcopyrite ores.

Supervisor: Professor J Petersen (Chemical Engineering)

James Malumbo Mwase
Thesis Title: *An investigation of cyanide-based heap leaching for extracting precious metals from Platreef ore*

James Mwase has a BSc in Chemical Engineering from Copperbelt University, a PGD in Industrial Administration and an MSc in Chemical Engineering from UCT. He followed these with a period as a Research Assistant, contributing to the development of a patented process for the heap leaching of Platinum Group Metal (PGM) bearing minerals, on which he built for his subsequent PhD studies.

James Mwase's thesis explores a novel process for the recovery of precious metals through cyanide-based heap leaching after bioleaching pre-treatment. Through a detailed mineralogical study the thesis shows that precious metal leaching is closely associated with the prevailing mineralogy in the ore, which in Platreef ore is highly complex. A recalcitrant phase is the mineral sperrylite (PtAs2), which is explored further, using a variety of tools, such as scanning electron microscopy, various spectroscopy methods as well as voltammetry. It is shown that sperrylite can dissolve slowly in cyanide solutions in the presence of ferricyanide, but that it tends to passivate due to the formation of an arsenic depleted surface layer. The passivation can be reversed through intermittent rinsing, which dislodges surface bound cyanide complexes. The work thus points to a way to extract precious metals form such ores in a much more economic and sustainable fashion than conventional platinum ore processing.

Supervisor: Professor J Petersen (Chemical Engineering)

In Civil Engineering:
Sophia Minghua Pan
Thesis Title: *'What is to be sustained for whom?': Equity as a key to sustainable sanitation in South African informal settlements?*

Sophia Pan graduated from Swarthmore College in 2009 in the United States with a Bachelor of Science in Engineering. Following this, she completed her MSc in the Civil Engineering Department of UCT in 2011, researching water and sanitation services in informal settlements.

Sophia Pan's thesis investigates the sustainability and equity of sanitation services in urban informal settlements in three South African cities. The research utilises a comparative case study approach, comparing different approaches to informal settlement sanitation service provision in eThekwini, Johannesburg and Cape Town municipalities. The findings indicate that equity is a critical but often overlooked aspect of sustainability that needs to be incorporated into various stages of service delivery projects in order to achieve universal access to sanitation. Specific recommendations for how to improve informal settlement sanitation services through the incorporation of equity principles are suggested.

Supervisor: Professor NP Armitage (Civil Engineering)
Co-supervisor: A/Professor M van Ryneveld (Civil Engineering)

In Construction Economics and Management:
Sunday Julius Odediran
Thesis Title: *A risk-based entry decision model for South African construction companies venturing into African markets*

Sunday Odediran has a BSc and MSc degree from the Obafemi Awolowo University, Ile-Ife, Nigeria. He is a registered Quantity Surveyor with the Quantity Surveyors Registration Board of Nigeria and is an academic staff member at the Obafemi Awolowo Universty, Ile-Ife.

Sunday Odediran's thesis stems primarily from the view held by scholars that African construction markets are oligopolistic in nature where few foreign firms dominate the major operations on the continent. His thesis aims to develop and refine a combination of theories on internationalisation that reveal how strategic entry decisions are made by construction companies through adequate perception of risks in overseas markets, their resources and capabilities. The synthesis of these theories led to the development of a theoretical framework for the study. Sunday Odediran extends this theoretical framework through a mixed methods research approach, where quantitative and qualitative data were collected from different sources and the model developed was validated using descriptive and inferential statistical techniques. The outcome of the study is a synthesis of theory and practice to aid decision-making in cross-border operations by construction companies. The theory includes prescriptive statements of actions leading to specific outcomes, integrated with empirical evidence of how construction companies can leverage on their resources and capabilities in deciding on an appropriate strategic entry mode that will counteract risks encountered in cross-border African construction markets.

Supervisor: A/Professor AO Windapo (Construction Economics & Management)

In Electrical Engineering:
Asheer Kasar Bachoo
Thesis Title: *Unsupervised maritime target detection*

Asheer Bachoo has a BSc, BScHons and MSc from the University of KwaZulu-Natal in Durban. His PhD research emerged from his work for the South African Navy at the Council for Scientific and Industrial Research (CSIR), Pretoria, from 2010 to 2014.

Asheer Bachoo's thesis proposes unsupervised methods for

detecting maritime targets from video data. Target detection is an important component of surveillance systems, and it is crucial to additional functions such as object tracking and object recognition. Most of the existing maritime image processing methods assume that video data is captured by a static camera, or they require colour or thermal data for target detection when the camera is moving. His work proposes two target detection methods for static or moving cameras that capture monochrome data in maritime scenes. The first method constructs an online region-based texture model of the ocean and classifies outliers of this model as potential targets. A graph cut optimisation is used to improve the foreground detection. The second method uses feature tracking as a means of detecting target features. The advantages of these two approaches are demonstrated through empirical analysis in a number of experiments using real-world video data.

Supervisor: A/Professor F Nicolls
(Electrical Engineering)

Hossein Dehnavifard
Thesis Title: *Development of a scaled doubly-fed induction generator for assessment of wind power integration issues*

Hossein Dehnavifard obtained his bachelor's and master's degrees at Amirkabir University of Technology (Tehran Polytechnic), between 2004 and 2011. He completed his doctoral research in Electrical Machine Design with regards to wind generators in the Electrical Engineering Department at UCT. His research interests are Wind Energy Conversion Systems, Electric Machine Design, and Power Systems.

Hossein Dehnavifard's thesis relates to the design, analysis, prototyping and testing of a scaled doubly-fed induction generator (DFIG) for laboratory-based assessment of wind integration issues. The machine is designed with the same electrical time constants as a large 2MW DFIG, in order to replicate the same dynamic behaviour of the large machine under controlled conditions in the laboratory. The main motivation for the work is the development of a laboratory-based test rig on which prevalent grid integration issues of a DFIG can be assessed, in real-time, and under control conditions.

Supervisor: A/Professor A Khan
(Electrical Engineering)
Co-supervisor: A/Professor P Barendse
(Electrical Engineering)

*Stephen Geoffrey Milborrow
Thesis Title: *Multiview active shape models with SIFT descriptors*

Stephen Milborrow has an MSc(Eng) from the University of Cape Town, a BEng from the University of KwaZulu-Natal, and a Diploma in Fine Arts from the Durban Institute of Technology.

Stephen Milborrow's thesis presents computer vision techniques for locating landmarks in images of human faces, originating from his work in developing commercial software in related applications. A modified Active Shape Model (ASM) is introduced which uses a form of Scale-Invariant Feature Transform (SIFT) descriptor. Multivariate Adaptive Regression Splines (MARS) are used to efficiently match descriptors around landmarks. This modified ASM is fast and performs well on frontal faces. A fully documented open-source version is available which has been used and cited in many international research projects. The model is then extended to handle non-frontal faces, by using multiple ASMs and searching for landmarks with the ASM that best matches the face's estimated yaw. The multiview model is shown to be effective on a variety of datasets. It is currently in use in popular commercial applications.
Supervisor: A/Professor F Nicolls
(Electrical Engineering)

Opeyemi Ayokunle Osanaiye
Thesis Title: *DDoS defence for service availability in cloud computing*

Opeyemi Osanaiye holds a BEng in Electrical Engineering from the University of Ilorin, Kwara State, Nigeria, and an MSc in Telecommunication Engineering from the University of Sunderland, United Kingdom.

Opeyemi Osanaiye's thesis aims to develop a defence technique that mitigates Distributed Denial of Service (DDoS) attack in cloud computing to ensure service availability. This was achieved by first implementing an IP spoofing detector, as a first line of defence, using a passive and active host-based Operating System (OS) fingerprinting to detect the true source of a packet during a spoofed DDoS attack. To cater for the magnitude of data that needs to be processed during a DDoS attack defence in cloud computing, this thesis has presented a feature selection method called Ensemble-based Multi-filter Feature Selection (EMFFS) that pre-processes the data before classification to select important features. This significantly reduces the feature set, thus, reducing the computational complexity, while maintaining or improving the classification accuracy using a decision tree classifier. Finally, this thesis presents a change-point monitoring algorithm to detect the DDoS flooding attack against cloud services, by examining the packet Inter-Arrival Time (IAT). Our method leverages on the fact that most DDoS attacks are automated and exhibit similar patterns. Therefore, when closely examined, they can be distinguished from normal traffic and tracked by using a Cumulative Sum algorithm (CUSUM).

Supervisor: A/Professor M Dlodlo
(Electrical Engineering)

Marc Pienaar
Thesis Title: *On the classification of time series and cross wavelet phase variance*

Marc Pienaar has honours and master's degrees in Archaeology from the University of Pretoria. His PhD emerged from his work in radiometric dating and isotope analysis at the CSIR, where he sought better ways to analyse time series data. Since 2007 he has been working on systems ecology problems by analysing the underlying ecosystem processes. He enrolled in the Electrical Engineering Department at UCT to grow his skills in signal processing.

Marc Pienaar's thesis explores the use of the continuous wavelet transform to characterize multiple time

series by automating the identification of similar frequency patterns. Specifically, he formulates algorithms and methods to match amplitude modulated (AM) and frequency modulated (FM) behaviour common between time series using a unique approach developed by him. By using benchmark time series, comprising multiple classification problems, the approach helps with understanding the underlying relationships common between time series in an explicit way that would be relevant to any real world application. Evidence is submitted that this methodology succeeds in the characterisation of AM and FM behaviour at different wavelet scales, and that this approach comfortably outperforms other classification techniques on large time series classification problems.

Supervisor: A/Professor F Nicolls (Electrical Engineering)

Sanjay Premraj
Thesis Title: *Energy & carbon intensity benchmark establishment in the South African food and beverage sector*

Sanjay Premraj has a BSc(Eng) and MSc(Eng) from University of Durban Westville, and a National Higher Diploma in Supply Chain Management from Optimum Learning Technologies. His doctoral research emerged as a result of working as an engineer responsible for factory performance efficiency improvements in the South African food and beverage sector.

Sanjay Premraj's thesis develops an energy and carbon emission intensity benchmarking process and tool to enable businesses within the South African food and beverage sector to establish benchmarks and improve their energy usage and conversion efficiency and reduce carbon emissions in their production process. With growing concerns around energy security and rapid increases in carbon emissions, his research sets out to implement a practical way for Small and Medium Enterprises (SMEs) to become proactive. The research covers 40 manufacturing sites to establish baseline carbon emission and energy intensities and uses the tool to improve the energy and carbon emission intensity performance of selected sites. The developed tool was designed to be easy to use and implement with a low level of energy management improvement understanding. The benchmark tool developed can be extended to other sectors.

Supervisor: Dr S Chowdhury (Electrical Engineering)

Mohohlo Samuel Tsoeu
Thesis Title: *Electrical Impedance Tomography/Spectroscopy (EITS): a Code Division Multiplexed (CDM) approach*

Mohohlo Tsoeu holds a B. Eng. from National University of Lesotho and MSc (Engineering) from UCT. He has been a lecturer in UCT's Electrical Engineering Department since 2008. His PhD in Electrical Impedance Tomography and Spectroscopy emerged out of interest in developing cheaper and more accessible alternatives for medical imaging and diagnostics.

Mohohlo Tsoeu's thesis exploits Code Division Multiplexing to allow imaging and spectroscopy of fast transient physiological phenomena which cannot be achieved using Time and Frequency Division Multiplexing. Mohohlo develops a high frame rate prototype system and evaluates its performance using phantom systems that mimic human tissue electrical properties. He explores electronic instrumentation and image reconstruction methods that optimize performance of the newly developed system. His findings confirm that Code Division Multiplexing improves the accuracy, speed, excitation energy and provides time-frequency data consistency, addressing the limitations of time and frequency division multiplexing. Results of his research lay groundwork for development of a full-scale, low cost, non-invasive tomography system for use as a mobile, low-cost alternative to Computed Tomography and Magnetic Resonance Imaging (MRI) found in large hospitals. This technology is portable for use in ambulances and provides a unique set of information that cannot be provided by the latter more expensive imaging methods.

Supervisor: Professor M Inggs (Electrical Engineering)

In Geomatics:
Atkeyelsh Gebreegziabher Molla Persson
Thesis Title: *Foreign direct investments in large-scale agriculture: the policy environment and its implications in Ethiopia*

Atkeyelsh Persson has a BA from UNISA, and an MSc and MPH from University of Lund in Sweden. Her doctoral work emerged as a result of her research on development issues and work experience at the United Nations Economic Commission for Africa, where she has been managing various programmes since 2008.

Atkeyelsh Persson's thesis aims to provide empirical evidence that may help the foreign direct investments (FDIs) in large-scale agriculture in Ethiopia to be pro-poor and environmentally sustainable, and thereby advance Ethiopia's development agenda. It also aims to boost current knowledge on FDI in agriculture in Ethiopia. Ethiopia has witnessed a significant influx of FDI into large-scale agriculture since 2007. This influx was due to the 2007 and 2008 global food and financial crises, and the conducive environment in Ethiopia. Critics say that these investments are neither pro-poor nor environmentally sustainable. Existing studies on this issue do not have detailed data. She recognises the problem and conducts multiple case studies on the extent, nature and impacts of such investments in Ethiopia. Evidence shows that the investment policy has a sound basis for supporting pro-poor and environmentally sustainable FDI in agriculture which could contribute to agricultural transformation. However, practical challenges hamper its adequate implementation.

Supervisor: A/Professor J Whittal (Geomatics)
Co-supervisor: Professor M Ramutsindela (Environmental & Geographical Science)

5. FACULTY OF HUMANITIES

Dean: Professor S Buhlungu

DEGREE OF DOCTOR OF PHILOSOPHY

In Classical Studies:
Madhlozi Moyo
Thesis Title: *Fauna in archaic Greek and Kalanga oral wisdom literatures*

Madhlozi Moyo studied Classics to MA level at the University of Zimbabwe, where he is currently a lecturer in Classical Studies. He is also a published poet and fiction writer.

Madhlozi Moyo's thesis compares how animals are deployed as vehicles for ethical instruction and commentary in archaic Greek poetry and Kalanga folklore. It utilises ancient texts alongside unpublished Kalanga materials, much collected through interviews by the author with Kalanga speakers. A review of the key theoretical literature on the use of animals in folklore is followed by a consideration of the species of animals selected within both the Greek and the Kalanga traditions, and the kinds of characteristics and behaviours attributed to them. The study investigates the extent to which these characteristics are derived from the fauna's observable behaviour and modified by cultural assumptions to conform with the respective societies' values. The thesis also focuses on configurations of animals in poetry, proverb and folktales, as signified in a series of ethical fields (mental agility, power-dynamics, economy, and sexual relations). A first-ever comparison of archaic Greek and Kalanga wisdom traditions, Madhlozi Moyo's thesis argues that a living oral African tradition (Kalanga) provides insights into another tradition from the remote past (archaic Greek).

Supervisor: A/Professor C E Chandler
(Literatures and Languages)

Jeffrey Allan Murray
Thesis Title: *Valerius Maximus on Vice: a commentary on Facta et dicta memorabilia 9.1-11*

Jeffrey Murray has BA, BA Hons and MA from the University of KwaZulu Natal, His PhD emerged from an interest in value-systems of the ancient world.

Jeffrey Murray's thesis provides the first detailed historical and historiographical analysis of the treatment of vices written by Valerius Maximus in the genre of Latin exemplary literature. The thesis examines how an author writing in the formative stage of the Roman imperial system employs material predominantly from the earlier Republican period to validate the value-system which the Romans believed was the basis of their world-domination and to justify the reign of the Julio-Claudian family. By detailed analysis of the sources of Valerius' material, of the way he transforms it within his chosen genre and how he frames his exempla, Jeffrey Murray illuminates the contribution of an often-overlooked author to the historiography of the Roman Empire.

Supervisor: Professor D Wardle
(Languages and Literatures)

In Dance:
Gerard Manley Samuel
Thesis Title: *Dancing the other in South Africa*

Gerard Samuel has a UCT Diploma in Ballet and a Master of Arts from the University of Natal. His many creative works were forged during his career with NAPAC Ballet and The Playhouse Company. He has pioneered disability dance for children in Durban and Copenhagen with his LeftfeetFirst Dance Theatre.

Gerard Samuel's thesis makes a highly significant intervention in Dance and Performance Studies in terms of its original argument about how the category of 'age' is used part of 'othering' processes. Its consideration of the intersection of age and othering in South African dance fills a gap in scholarship. Samuel draws on the lived experiences of dancers, choreographers, dance critics and other role players, including his own position within the field, to look at four key areas of concern: notions of cultural inscription and dancing bodies as blank slates; questions of (in)visibility and frailty; wisdom and (in)dependent older dancers; and the ontologies of marginalisation for older dancers within concert theatre dance. Coining the term 'body-space' as a theoretical tool to observe bodies and dancing as states of becoming, Gerard Samuel's thesis suggests that widening body-space reading into a continuum can help in understanding the construction of ageist prejudice in dance.

Supervisor: A/Professor S Swartz
(Psychology)
Co-supervisor: Dr IM Freire
(Educational Sciences, University of Santa Catarina, Brazil)

In Drama:
Sara Philippa Matchett
Thesis Title: *Breath-Body-Self: an exploration of the body as a site for generating images for performance making*

Sara Matchett has BA, BA(Hons) and MA degrees plus a Performer's Diploma from UCT. Her PhD emerged as a result of her practice as a theatre maker as well as her teaching experience in the UCT Department of Drama, where she has been an academic staff member since 2010.

Sara Matchett's thesis investigates the body as a site for generating images for purposes of performance making. It is a methodological study that draws from various traditions, methods and somatic practices. Her study specifically focuses on interrogating the relationship between breath and emotion and between breath and image, and its use in attempts to make performance that is inspired by a biography of the body. It investigates whether breath can be experienced as an embodied element that is sensed somatically by performers, and in so doing can act as a catalyst for activating memories, stories, and experiences held in the body. Using the conceptual framework of somaesthetics, Sara Matchett's study draws from body theory, neuroscience and cognitive philosophy. Through the disciplinary and

conceptual framework of somaesthetics she suggests that performers cultivate a heightened awareness that makes possible what is being proposed as a process of performance making.

Supervisor: Professor M Fleishman (Drama)

In Education:
Dorothy Kyagaba Sebbowa
Thesis Title: *Towards a pedagogical framework for construction of historicity: a case of using Wikis among pre-service teachers at Makerere University.*

Dorothy Sebbowa holds a BA in Education and a master's degree in History Education, both from Makerere University. She also has a Postgraduate Diploma in Information and Communication Technologies in Education from UCT. Her doctoral work was influenced by her 13 years' experience as a secondary school history teacher and as a teacher educator at Makerere University.
Traditionally, history education does not link theory to solving real life challenges. Dorothy Sebbowa's thesis demonstrates how, when educators identify with students' interests and passion by engaging them in dialogical conversations between the past and present, and when they use emerging technologies which students today use, learning history becomes relevant and meaningful to students. Dorothy Sebbowa's research extended this philosophy by testing and evaluating Gadamer's Hermeneutics theory through Design Based Research procedural processes of iterative cycles of implementations. From this work she has developed a theoretically informed pedagogical framework for implementing robust interventions in history education, a framework the design principles of which involve emerging technologies, in particular Wikis. Dorothy Sebbowa's thesis demonstrates the usefulness of emerging technologies to innovate teaching of history for a new generation of learners.

Supervisor: A/Professor D Ng'ambi (Education)
Co-supervisor: Dr C Brown (Centre for Innovation in Learning and Teaching)

Simone Titus
Thesis Title: *Towards a social-constructivist game based learning model: a case of using digital games in sport studies in South Africa*

Simone Titus has a bachelor's in Sport and Recreation Management (cum laude) and a master's in Sport Recreation and Exercise Science. Her doctoral work emanated from her experience as a lecturer in the Department of Sport, Recreation and Exercise Science at the University of the Western Cape, where she developed an interest in teaching with digital games.

Simone Titus observed that, despite apartheid education in South Africa having being outlawed, students still tended to segregate themselves along lines of race, ethnicity and other socio-cultural factors. Her thesis used digital games to disrupt students' unconscious behaviour which produced and reproduced, in the students' minds, the historical apartheid legacies of segregation. Drawing on Giddens' structuration theory, she designed a social-constructivist game-based learning model for teaching with digital games in a Sport Studies classroom aimed at achieving cross-cultural production of knowledge. Simone Titus's theoretical model shows how a leveraging of students' social actions in cross cultural interactions, and the fun of playing digital games, exploits classroom diversity for an enriched learning environment.

Supervisor: A/Professor Dick Ng'ambi (Education)

Shelly Anna Christina Wilburn
Thesis Title: *The social organization of knowledge in eleven South African primary schools*

Shelly Wilburn holds a BA in Education from the University of North Carolina, Wilmington (USA) and an MPhil in Curriculum Studies from UCT. Her PhD evolved from work on a research project in UCT's School of Education that focused on better performing schools in contexts of poverty.

Shelly Wilburn's thesis addresses schooling inequalities in South Africa by investigating how the knowledge resources of teachers and leaders circulate within schools. Her study compares eleven primary schools performing relatively better and worse than expected, all located in under-resourced areas across the Western Cape. Developing a framework based on the work of Durkheim, Bernstein, Douglas, and Weber, Ms Wilburn focuses on social relations between teachers and the circulation of specialised knowledge in these eleven schools. Her findings reveal an association between relatively better academic outcomes and the maximisation of expertise through particular forms of social relations. Her thesis offers a fresh way of thinking and talking about issues of school leadership and teacher collegiality, and explains how instructional change can be made possible, despite demographic odds.

Supervisor: A/Professor U. Hoadley (Education)
Co-supervisor: Emeritus Professor J Muller (Education)

In English Literature:
Corinne Shelly Abel
Thesis Title: *Power and transgression: margins, crossings and monstrous women in selected works of Bharati Mukherjee and Angela Carter*

Corinne Abel has BA and MA (Psychology) degrees from the University of the Witwatersrand. She earned the UNISA faculty medal whilst studying Social Work and was joint winner of the English prize for her UNISA Honours degree.

Using the tropes of margins, crossings, and the figure of the monstrous woman as lenses, Corinne Abel's thesis explores the relationship between power and transgression in selected writings of two contemporary female authors, Bharati Mukherjee and Angela Carter. She employs these tropes to highlight unruly women, often situated at society's edges, who dare to challenge hegemony through transgressive, larger-than-life acts. She shows how the writers express the symbolic force of the periphery, suggesting that margins and marginal figures can translate into signifiers of power. She reveals that crossings of

various kinds, metaphoric, literal, textual, foreground a transgressive edge which contests established authority and creates space for a divergent form of ascendancy. She concludes that the 'monstrous' woman can be recuperated from a patriarchal framing to articulate an enlightened set of power relations; and she demonstrates that reading two very different writers side by side affords an encounter with the unexpected, thus generating evocative and illuminating insights into how power and transgression are imbricated.

Supervisor: A/Professor M Samuelson (English Language and Literature)

Portia Mahlodi Phalafala
Thesis Title: *My Name is Afrika: Setswana Genealogies, Trans-Atlantic Interlocutions, and Agential Realism in Keorapetse Kgositsile's life and work*

Portia Phalafala holds BA, BA(Hons) and MA degrees from the University of the Witwatersrand. Her research derives from her passion to fill the gap in black literary production under apartheid caused by the fleeing of South African writers into exile, censorship and/or banning.

Demonstrating how poet Keorapetse Kgositsile weaves oral and literary traditions of both South Africa and black America in his work, Portia Phalafala's thesis reveals a dynamic and complex range of influences between those two literary cultures. Despite oral traditions having largely been excluded from the broader narrative of modernity, Phalafala demonstrates how they continue to shape ideas and aesthetic choices in Kgositsile's poetry. She shows how oral traditions remain alive and are reinvigorated, providing a resource that crosses the Atlantic and is renewed in translation, rather than being left behind to ossify. She demonstrates that oral traditions enable Kgositsile to coin concepts that re-enchant and re-order time to NOW-time; and that his prominent presence in black international periodicals and his collaborations with diasporic figures uncover a more complex relationship between the two geographical sites than does the current positioning of Afro-America as a vanguard on which Africans model themselves.

Supervisor: A/Professor M Samuelson (English Language and Literature)
Co-Supervisors: A/Professor H Garuba (English Language and Literature; African and Gender Studies, Anthropology and Linguistics)
Dr K Mkhize (English Language and Literature)

In Linguistics:
Atikonda Akuzike Mtenje
Thesis Title: *A comparative analysis of the phonology and morpho-syntax of Cisukwa, Cindali and Cilambya*

Atikonda Mtenje has a BA from University of Malawi and an honours degree and MA from the University of Cape Town. Her doctoral work emerged as a result of her interest in investigating questions that remained unresolved in her MA dissertation.

Atikonda Mtenje's thesis aims to describe and compare the grammars of Cisukwa, Cindali and Cilambya (SuNdaLa) – three closely related varieties spoken in the northern region of Malawi. Her findings show that variation among the SuNdaLa varieties exists mainly in the phonological structures, with very few differences in the morpho-syntax. The outcomes of her research and analysis of the SuNdaLa cluster is that they constitute a dialect cluster of one language. Her thesis argues that the SuNdaLa varieties appear as segments of a dialectal continuum, but with Cisukwa and Cindali having a closer relationship with one another and with Cilambya being somewhat apart from the first two.

Supervisor: Dr M Brenzinger (African and Gender Studies, Anthropology and Linguistics)
Co-supervisor: Professor R Mesthrie (African and Gender Studies, Anthropology and Linguistics)

Yolandi Ribbens-Klein
Thesis Title: *To Bry or not to Bry: the social meanings of Afrikaans rhotic variation in the South Cape*

Yolandi Ribbens-Klein holds a BA, BAHons and an MA from UCT. Her doctoral work combines her interest in formal linguistics, especially phonetic analysis, with the social meanings and uses of language.

Yolandi Ribbens-Klein's thesis investigates the social meanings of Afrikaans rhotic variation, focusing on the town of Hountiniquadorp (a pseudonym). The work is unique in its combination of approaches to 'place as location' (traditional dialectology) and 'place as meaning' (sociolinguistics and linguistic anthropology). Her thesis focuses on one particular sound, namely, Afrikaans /r/. Afrikaans phonetics texts describe alveolar-r [r] as standard, and uvular-r ([ʁ] or [ʁ]; bry-r) as a nonstandard, regional feature. During research towards her thesis she investigated how people in Houtiniquadorp use Afrikaans /r/ to index locality and belonging. Her results show that, while uvular-r is an emplaced sound, it also carries non-place meanings that index – inter-sectionally – macro-social categories such as residential status, gender and age. By looking at participants who use both linguistic variations in alternation, Yolandi Ribbens-Klein shows that micro-level linguistic variation allows speakers to index complex and multilayered identities in situated interactions.

Supervisor: Professor A Deumert (African and Gender Studies, Anthropology and Linguistics)
Co-supervisor: Professor R Mesthrie (African and Gender Studies, Anthropology and Linguistics)

In Religious Studies:
Lee-Shae Salma Scharnick-Udemans
Thesis Title: *Religion and public broadcasting in South Africa*

Lee Scharnick-Udemans holds BSocSc, BSocScHons and MSocSc degrees in Religious Studies from UCT. With a background in the television industry, since 2009 she has served as a tutor, a

coordinator of tutors, and a lecturer in UCT's Department of Religious Studies.

Lee Scharnick-Udeman's thesis investigates the role of religion in the history and development of the South African mediascape. Substantial chapters analyse the role of religion in the banning and introduction of television under apartheid, the place of religion in the formulation of new media policy in the democratic era, and the regulatory role of the Broadcasting Complaints Commission of South Africa in dealing with allegations of religious offence, blasphemy, defamation, and incitement to violence. Extending from the 'television controversy' of apartheid South Africa to post-apartheid media policy and practice, Lee Scharnick-Udeman's thesis uncovers issues of religious legitimation, religious regulation, freedom of expression, and freedom of religion in the overlapping configurations of religion, media, and politics. As the first extended study of religion and media in South Africa, her thesis traces the history of the state using religion in public broadcasting as a strategic resource for national projects.

Supervisor: Professor D Chidester (Religious Studies)

In Social Development:
Philip Rudolf Geldenhuys
Thesis Title: *Exploring school dropout among males in the greater Cape Town area, South Africa*

Philip Geldenhuys holds a BA and an MA (cum laude) from Stellenbosch University. His doctoral work emerged as a result of his social work experience in township schools where he works as a practitioner and researcher.

Philip Geldenhuys's thesis focuses on the factors that influence school dropout among males. Through his research he sought to gain an understanding of the phenomenon's complexities. Although more than 50% of learners who enter the school system in South Africa drop out before matriculating, little is known about the reasons why males, in particular, drop out of school. Philip Geldenhuys explored this phenomenon by engaging with male dropouts, their parents, teachers, school principals and representatives from the Western Cape Department of Education. His thesis provides a holistic view of the male school dropout phenomenon and demonstrates, with illustrative evidence, that the primary and most intense influences leading to male school dropout are institutional. His thesis shows that the commonly accepted narrative -- one which emphasises other underlying influences as the driving contributors to the incidence of male school dropouts – is misleading. Rather, Philip Geldenhuys's findings show that, while such other influences exist, they are amplified by practices within institutional contexts, especially within schools themselves.

Supervisor: Dr LHoltzhausen (Social Development)
Co-supervisor: Professor S Stone (University of California, Berkeley School of Social Welfare)

Tolbert Mucheri
Thesis Title: *Social capital and utilization of HIV/ AIDS-related healthcare in rural Matabeleland South Province, Zimbabwe*

Tolbert Mucheri holds a BSc(Hons) from the University of Zimbabwe and an MSc from the University of Pretoria. His doctoral work was inspired by his passion and experiences as a social development practitioner with Higherlife Foundation, a social impact organisation committed to investing in the future of HIV/AIDS-orphaned children in Zimbabwe, Burundi and Lesotho.

Tolbert Mucheri's thesis examines the relationship between social capital and utilisation of HIV/AIDS-related healthcare among people living with HIV. Utilising the Andersen and Newman model of healthcare utilisation and social capital theory, he assesses the predisposing, enabling and need factors that predict utilisation of HIV/AIDS-related healthcare in Zimbabwe's rural Matabeleland Province. He identifies barriers and challenges to optimal utilisation of HIV/AIDS-related Healthcare in rural Zimbabwe. His findings indicate a significant relationship between social capital and utilisation of HIV/AIDS-related healthcare. Other significant predictors include gender, HIV/AIDS-related discrimination and being a household head. Key barriers to utilisation of HIV/AIDS-related healthcare include food insecurity and reliance on informal sources of medication. Tolbert Mucheri's thesis underscores the need to integrate social capital (as an enabling factor) in the design of interventions to improve utilisation of HIV/AIDS-related healthcare in rural areas.

Supervisor: Dr J John-Langba (Social Development)

In Sociology:
B Camminga
Thesis Title: *Bodies over borders and borders over bodies: 'gender refugee' and the imagined South Africa*

B Camminga completed their BA at Rhodes University. Following this they received a Chevening Scholarship to undertake a master's at the Centre for Interdisciplinary Gender Studies (CIGS), University of Leeds. They returned to South Africa as doctoral fellow at the Institute for Humanities in Africa (HUMA) (UCT) in 2012.

B Camminga's thesis deals with the politics of transgender on the continent, with specific reference to the experiences of 'gender refugees' - people who can make claims to refugee status, fleeing their countries of origin based on the persecution of their gender identity. The interrelationships between two journeys lie at the heart of the thesis: on the one hand, the conceptual journeying of the term 'transgender' from the Global North, where it originated, to Africa and South Africa in particular, and on the other hand, the physical embodied journeying of transgender asylum-seekers from countries within Africa to South Africa. This study centres on the narratives of these gender refugees, highlighting how their journeys have been both enabled and constrained by the contested meanings and politics of this emergence of transgender. This thesis explores the radical constitutional-legal possibilities for 'transgender' and the pervasive politics/logic of binary 'sex/gender' within South African society.

Supervisor: Professor D Posel (Sociology)
Co-supervisors: Dr Z Matebeni (Sociology); A/Professor S Levine (African and Gender Studies, Anthropology and Linguistics)

Gabrielle Gita Kelly
Thesis title: *Conceptions of disability and desert in the South African welfare state: the case of disability grant assessment*

Gabrielle Kelly holds a BCom and a PGDip (Management) (Marketing) from UCT. She then completed a master's degree at Stellenbosch University. Her doctoral research was conducted through UCT's Centre for Social Science Research, and her thesis was written whilst she was a Fox Fellow at Yale University.

Amidst high unemployment and almost no unemployment benefits, working-age South Africans often claim disability grants, even when only partially, temporarily or not-at-all disabled. Because disability-benefit assessment-claims processes require bureaucrats to defer to trained medical professionals, South African doctors have become 'street level bureaucrats' implementing public policy. Gabrielle Kelly's thesis contributes to the comparative literature on 'street-level bureaucrats' by examining how doctors perform this role. She shows that doctors' assessments are informed by diverse factors, not all strictly linked to medical disability. Using interviews and observations of doctor-claimant interactions, she shows that doctors act as medical professionals, as moral agents and as gatekeepers. She demonstrates how their face-to-face interactions with claimants leads doctors to defy and subvert their bureaucratic managers' instructions, to insert subjective understandings of disability and deservingness into the assessment process – bending the rules for people they assess as 'deserving', rigidly applying them in 'undeserving' cases – and thus framing disability in varied way.

Supervisor: Professor J Seekings (Sociology)
Co-supervisor: Professor N Nattrass (Sociology)

Takwanisa Machemedze
Thesis Title: *Exploring possible influences of HIV/AIDS-related stigma on risky sexual behaviour and childbearing decisions: Cape Town 2002-2009*

Takwanisa Machemedze is a Data Analyst in UCT's DataFirst Research Data Centre. He holds an MPhil in Demography (UCT) and BScHons Statistics (University of Zimbabwe).

Using survey data to explore HIV/AIDS-related stigma amongst young Cape Town adults, including Khayelitsha residents living with HIV/AIDS (PLWHA), Takwanisa Machemedze's thesis shows a complex relation between PLWHA's attitudes towards sex and reproduction and their experience of stigma. His findings include that (a) Black and Coloured women who stigmatised PLWHA were likely to self-perceive as not-at-risk and thus able to engage in risky sexual behavior; (b) women amongst PLWHA who internalised and perceived stigma did not disclose their HIV status; (c) disclosure of sero-status to sexual partners did not necessarily translate into safe-sex practices; (d) there were high levels of depression/ anxiety amongst those who internalised stigma and those who disclosed their HIV status, with this being associated with inconsistently practising safe sex; (e) the relationship between experienced stigma and child-bearing decisions was complex: while perceptions of stigma in the social environment tended not to affect child-bearing decisions, internalised stigma was associated with a desire to have few children while those who experienced stigma and had a live-in sexual partner tended to want to bear children.

Supervisor: Professor N Nattrass (Sociology)

FACULTIES OF COMMERCE, HEALTH SCIENCES AND SCIENCE

ORDER OF PROCEEDINGS

Academic Procession.
(The congregation is requested to stand as the procession enters the hall)

The Vice-Chancellor will constitute the congregation.

The National Anthem.

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

Musical Item.

Welcome by the Deputy Vice-Chancellor, Professor F Petersen.

Professor Petersen will present Nicola Mulder for the award of a Fellowship.

Professor D Visser will present Peter Folb to the Vice-Chancellor for the award of an honorary degree.

Professor Petersen will invite Ms Nomfundo Walaza to address the congregation.

Address by Ms Walaza.

The graduands and diplomates will be presented to the Vice-Chancellor by the Deans of the faculties.

The Vice-Chancellor will congratulate the new graduates and diplomates.

Professor Petersen will make closing announcements and invite the congregation to stand.

The Vice-Chancellor 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.)

FELLOWSHIP

The election by Senate of a member of the faculty to be a fellow recognises sustained and original contributions through research or creative endeavour.

The fellows in the Faculty of Health Sciences and their years of election are:

2006: F Brombacher
2014: G Hussey
2014: NS Levitt
2006: PN Meissner
1992: TD Noakes
2009: VA Russell
2010: DJ Stein
2013: ED Sturrock
2013: C Williamson
2008: HJ Zar
2015: KUJ Dheda

The following member of the Faculty of Health Sciences has been elected to a fellowship:

Nicola Mulder

Computational Biology Division
Department of Integrative Biological Sciences

Nicola Mulder heads the Computational Biology Division in the Department of Integrative Biomedical Sciences at UCT, and is a Full Member of the Institute of Infectious Disease and Molecular Medicine (IDM). She is the Principal Investigator for H3ABioNet, a Pan African Bioinformatics Network for the *Human Heredity and Health in Africa* (H3Africa) programme, funded jointly by the US National institutes of Health (NIH) and the Wellcome Trust. H3ABioNet includes over 30 African institutions and is playing a leading role in building bioinformatics capacity on the continent.

After completing her PhD in Medical Microbiology at UCT in 1998, Mulder moved into the field of Bioinformatics, and spent the next 8 years working at the European Bioinformatics Institute (EBI) in Cambridge. At the EBI, she served as a Team Leader, and was responsible for the development of Bioinformatics resources at the Institute. At UCT, Mulder's research applies bioinformatics to the study of human and microbial genomics and infectious

FELLOWSHIP (CONTINUED)

diseases. The wide-ranging research programme that she has built since she returned to UCT in 2007 includes employing a systems biology approach in studying pathogens and their interactions with the human host; investigating genetic variation in African populations and the links thereof to diseases; studying microbiomes; and developing visualisation and analysis tools for "big data".

Over the past 10 years, Nicola has published more than 70 papers. These include 2 multi-author papers that were published in *Science* in 2014. According to Google Scholar, the publications that Nicola Mulder has co-authored receive on average 2,000 citations per year. In 2014, she was named as one of just six African scientists (two from UCT, among 195 world-wide in the Biology and Biochemistry category) on the Thomson Reuters Highly Cited list, which identifies scientists who rank among the top 1% most cited for their subject. That year, she was named as one of the "World's Most Influential Scientific Minds 2014" in an article reporting on the Thomson Reuters Highly Cited list. Importantly, Mulder made the Thomson Reuters list again in 2015, being included among an even smaller group of scientists from Africa.

Nicola Mulder's most important contributions have been in the development of new bioinformatics tools for the scientific community and application of these in infectious disease research. New technologies are generating big data in the biomedical sciences at an ever-increasing pace, resulting in a need for new analysis tools. Mulder's research group has identified some of the gaps and has developed methods to fill them. One such tool is a new semantic similarity measure for the Gene Ontology. Together, the publications describing this tool have garnered 62 citations, and the website for this tool has been accessed more than 10,000 times. Other examples include tools for functional analysis and for data visualisation. Functional analysis tools developed by Mulder's team include a graph-based enrichment analysis tool (Geistlinger *et al.*, 2011, 35 citations), and a post-genome-wide association study (GWAS) network analysis tool, ancGWAS (Chimusa *et al*., 2015). An example of a visualisation tool developed by Mulder and colleagues is PINV, which is used for viewing protein-protein interaction networks (Salazar *et al*., 2014; 4 citations).

In addition to developing these tools, Nicola Mulder has also applied these and other tools to research in human diseases. As an example, she has generated interaction networks for *Mycobacterium tuberculosis* (the causative agent of tuberculosis (TB)) and the human host to identify key proteins as potential drug targets in the tubercle bacillus, and to predict host-pathogen interactions in order to refine the drug targets (Mazandu & Mulder, 2011; 24 citations). The TB network was used for function prediction which has contributed significantly to our understanding of the molecular biology of *M. tuberculosis* (Mazandu & Mulder, 2 papers published in 2012, 40 citations, in total). Nicola's group is also investigating the genetic basis of diseases in African populations for diseases such as TB. Through inter-disciplinary collaborations with geneticists, clinicians and medical biochemists, she is working on projects tackling aspects of TB that range from transmission to pathogenesis mechanisms. In a collaborative study on TB susceptibility in the Coloured community, Mulder's PhD student developed and applied new algorithms for analysing admixed populations and identified novel single nucleotide polymorphisms potentially associated with TB (Chimusa *et al*., 2014, 41 citations)

Mulder holds a B3 rating from the NRF which attests to her international standing in the field of Bioinformatics. She has raised over R120m in research grants over the last 10 years, and in 2014, she was promoted *ad hominem* to full professor.

HONORARY DEGREE

Peter Folb

DSc (Medicine) (honoris causa)

Peter Folb established the discipline of Clinical Pharmacology in South Africa and is recognised as a leading authority internationally on the scientific basis of drug development. He is considered a world leader in drug regulation and served as Chair of the South African Medicines Control Council for 18 years, bringing it to a position where it was the World Health Organisation reference and training centre for drug regulation in the developing world.

Peter Folb's internationally recognised research in drug safety is reflected in the series of books and chapters in books that he has written and his contribution for nearly 20 years as co-editor of Meyler's Side Effects of Drugs, the definitive and authoritative international text on clinical, pathogenetic and experimental aspects of drug safety. He initiated boundary-breaking research on medicinal plants in South Africa, the importance of which was recognised by the creation of the South African MRC Traditional Medicines Research Unit in 1997.

Folb has contributed significantly to reducing the burden of malaria and other neglected and poverty-related diseases. He directed the basic and applied research into, and development of, a novel anti-malarial drug, rectal artesunate. Its use as pre-referral treatment of life-threatening severe malaria has been shown to reduce the mortality from malaria in infants and children in malaria endemic countries.

In 1977 the death of Steve Biko while in police detention generated considerable professional and public ethical discussion, as there were clear ethical breaches on the part of the doctors who were responsible for him. Peter Folb, along with three other professors, pursued disciplinary action against the doctors. This case played an important role in sensitising the medical profession to medical ethical issues in South Africa.

He went on to lead the investigation of the Apartheid government's chemical and biological warfare programme for the South African Truth and Reconciliation Commission.

Peter Folb has contributed to the advancement of science, technological innovation and the generation of new knowledge over a period of more than 30 years. In addition to applying his skills and knowledge to improve public health in developing countries, he has facilitated social justice and redress and has ensured that these programmes are sustained through extensive capacity building and health systems strengthening. He is an outstanding scientist and visionary leader.

DECLARATION FOR HEALTH SCIENCES GRADUANDS

AT THE TIME OF BEING ADMITTED AS A MEMBER OF THE HEALTH PROFESSION:

I solemnly pledge to serve humanity

My most important considerations will be the health of patients and the health of their communities

I will not permit considerations of age, gender, race, religion, ethnic origin, sexual orientation, disease, disability or any other factor to adversely affect the care I give to patients

I will uphold human rights and civil liberties to advance health, even under threat

I will engage patients and colleagues as partners in healthcare

I will practise my profession with conscience and dignity

I will respect the confidentiality of patients, present or past, living or deceased

I will value research and will be guided in its conduct by the highest ethical standards

I commit myself to lifelong learning

I make these promises solemnly, freely and upon my honour.

NAMES OF GRADUANDS/ DIPLOMATES

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

1. FACULTY OF HEALTH SCIENCES

Dean: Professor B Mayosi

Before presenting the graduands, the Dean will invite all graduating students in the Faculty to stand and to make the Faculty Declaration. All members of the congregation who treat or will be treating patients are invited to join in affirming or re-affirming their commitment to ethical patient care.

POSTGRADUATE DIPLOMA IN DISABILITY STUDIES

*Penandino Drusilla Kanatjekuina Kandjii
*Zethu Pepuma

POSTGRADUATE DIPLOMA IN HEALTHCARE TECHNOLOGY MANAGEMENT

*Sthembiso Shabalala

POSTGRADUATE DIPLOMA IN PSYCHOTHERAPY

*Andrew McGregor Greenwood

DEGREE OF BACHELOR OF MEDICAL SCIENCE (HONOURS)

In Dietetics:
*Akhona Namhla Tshico

DEGREE OF MASTER OF MEDICINE

In Anaesthesia:
*Deshandra Dass
*Marlize du Preez (with distinction in the dissertation)
Kasandji Freddy Kabambi
Tania Pretorius
*Charles Knight Rumboll
*Theresa Samuel
Nicola Justine Vickery

In Family Medicine:
Colleen Jean Bradfield Hiscock

In Pathology (Virological):
*Aabida Khan (with distinction in the dissertation)

DEGREE OF MASTER OF MEDICINE IN EMERGENCY MEDICINE

*Coenraad Christoffel Groenewald
*Waseela Khan

DEGREE OF MASTER OF MEDICINE IN MEDICINE

*Nnete Nimrod Mokhele (with distinction in the dissertation)
*Gregori Henryk Palkowski
*Erma Poulet (with distinction in the dissertation)
*Colin James Rush (with distinction in the dissertation)
Patryk Zygmunt Szymanski

DEGREE OF MASTER OF MEDICINE IN OBSTETRICS AND GYNAECOLOGY

*Nkosinathi Ncube
*Kim Renate Sonntag
Trevi Alison Olga Spence

DEGREE OF MASTER OF MEDICINE IN OCCUPATIONAL MEDICINE

*Brynt Lindsay Cloete

DEGREE OF MASTER OF MEDICINE IN OPHTHALMOLOGY

*Leonard Goussard Heydenrych (with distinction in the dissertation)
*Sayeed-Hamzak Hamzah Mustak

DEGREE OF MASTER OF MEDICINE IN PAEDIATRICS

*Shehnaaz Yunus Akhalwaya
*Alida Maria Botes
*Julie Copelyn
*Craig Laurence
*Lindsey Nicola Levin
*Shakti Pillay
*Kim Didi Prince (with distinction in the dissertation)

DEGREE OF MASTER OF MEDICINE IN PLASTIC AND RECONSTRUCTIVE SURGERY

Gary Dos Passos

DEGREE OF MASTER OF MEDICINE IN PSYCHIATRY

Jonathan Alan Starke (with distinction in the dissertation)
*John Ross Torline

DEGREE OF MASTER OF MEDICINE IN RADIATION ONCOLOGY

*Heide Hart

DEGREE OF MASTER OF MEDICINE IN SURGERY

*David Johannes De Villiers
*Jennifer Sidwell Downs
Jeremy John Plaskett
*Liana Roodt (with distinction in the dissertation)

DEGREE OF MASTER OF MEDICINE IN UROLOGY

*Malcolm James Dewar

DEGREE OF MASTER OF PHILOSOPHY

In Disability Studies:
Ikechukwu Joseph Nwanze

In Maternal & Child Health:
Tafadzwa Dianah Machipisa (with distinction in the dissertation)

In Neonatology:
*Gerhardus Rossouw (with distinction in the dissertation)

In Nephrology (Adult):
*Jashira Naidoo

In Neuropsychiatry:
Carla Patricia Freeman (with distinction in the dissertation)

In Paediatric Infectious Diseases:
Harsha Lochan (with distinction in the dissertation)

In Public Mental Health:
Ignicious Murambidzi
Nozwelo Ntombizami Ncube

In Sport & Exercise Medicine:
*Demitri Constantinou

DEGREE OF MASTER OF PHILOSOPHY IN EMERGENCY MEDICINE

In Clinical Emergency Care:
*Keneth Opiro
*Pierre Christo Smit
Micheal Suuna
Craig Alexander Wylie

DEGREE OF MASTER OF PHILOSOPHY IN CLINICAL PHARMACOLOGY

Terri Lynne Selles

DEGREE OF MASTER OF PUBLIC HEALTH

Lorna Gillian Dunning (with distinction)
Lelani Hobane
*Seleman Khamis Semvua
Athenkosi Sopitshi
*Catherine Anne White

In Community Eye Health:
*Halimatu Muhammad Bilyamin Aliyu

In Epidemiology:
*Elizabeth Teshura Ernstoff (with distinction in the coursework)
*Llewellyn Ashley Fleurs (with distinction)
Tracy René Glass
Victoria Oluwatoyin Iyun (with distinction in the dissertation)
Nontokozo Langwenya
*Pancho Mulongeni (with distinction in the dissertation)
*Jenna Patterson
*Jessica Price (with distinction)
*Lydia Ann Trupe
Priscilla Ruvimbo Tsondai

In Health Economics:
Renee de Waal (with distinction)
Brenda Nakimuli
Stacy Kwamboka Orangi
*Stella Matutina Umuhoza (with distinction in the dissertation)

In Health Systems:
Gimenne Zwama (with distinction in the dissertation)

DEGREE OF MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

*Leah Elizabeth Morgan
*William Wasswa (with distinction in the dissertation)

DEGREE OF MASTER OF SCIENCE IN MEDICINE

In Biomedical Engineering:
*Stefan Stoeckigt (with distinction)

In Cell Biology:
*Joy-Mari Buys (with distinction)

In Emergency Medicine:
*Megan Elisabeth Banner

In Exercise Science:
David Alexander John Leith (with distinction)

In Genetic Counselling:
*Khalsa Said Al Kharusi
Sinead Amber Ross (with distinction in the dissertation)

In Human Genetics:
Amy Frances Geard (with distinction)
Theresa Ruppelt (with distinction)
Lynn Tyers

In Medical Biochemistry:
Kim Tamara Gurwitz
*Mateen Wagiet

In Medical Virology:
Sherazaan Dineo Ismail (with distinction)

In Medicine:
*Stephen Nzeki Kamuli (with distinction)
Robyn Marie Rautenbach

In Physiology:
Kirsten Blythe Seale

DEGREE OF MASTER OF SCIENCE IN OCCUPATIONAL THERAPY

Robyn Jess Meissner (with distinction)
Caraleigh Otto

DEGREE OF MASTER OF SCIENCE IN PHYSIOTHERAPY

*Oluwakemi Adebukola Ituen

DEGREE OF MASTER OF SCIENCE IN SPEECH-LANGUAGE PATHOLOGY

*Prianka Parusnath (with distinction)
*Katherine Margaret Rossouw

2. FACULTY OF SCIENCE

Dean: Professor A le Roex

DEGREE OF BACHELOR OF SCIENCE

*Gcina Banele Matsebula

DEGREE OF MASTER OF PHILOSOPHY

In Applied Marine Science:
*Gemma Louise Rashley

In Climate Change & Development:
*Emma Ruth Baker

In Environment, Society & Sustainability:
Emmanuel Mogende
James George Sekonya
Bothwell Wachi

DEGREE OF MASTER OF SCIENCE

In Applied Marine Science:
*Bhavnah Komul

In Applied Mathematics:
Ndivhuwo Mariana Musehane

In Archaeology:
Madeline Rae Zhu (with distinction)

In Biological Sciences:
Erica Carla Essig

In Botany:
*Eleanor Ruth Shadwell

In Chemistry:
Stefan Jason Benjamin
*Daniel Andreas Kusza (with distinction)
*Ferdinand Wafula Ndubi (with distinction)
*Tayyibah Tahier

In Climate Change & Development:
Julia Elaine Davies
*Mercy Njeri Gicheru

In Computer Science:
Tresor Vangu Mvumbi
Ayodeji Oluwaseun Olojede

In Decision Sciences & Analytics:
Bernisha Janti Lakhoo Lala

In Environmental & Geographical Science:
Annesley Vivienne Crisp
Sheldon Earl Husselmann
*Lisa Pearce
*Rene Schieritz

In Environment, Society & Sustainability:
Jaime Kay Davidson (with distinction)
Leani de Vries

In Geology:
*Silvio Jose Elias
Tamsyn van Rensburg

In Information Technology:
*Tristan Alan Bunn
Anesh Kalan

In Mathematics:
*Peter Fredrick Faul (with distinction)

In Mathematical Statistics:
Mary Ajibola Familusi

In Molecular & Cell Biology:
*Margaretha de Waal
Romana De Jesus Do Rosario Yanez (with distinction)
*Cynthia Fan
*Michaella Robyn Hulley

In Ocean & Atmosphere Science:
Daniel Eric Schilperoort

In Ocean & Climate Dynamics:
Ramontsheng Sakia Rapolaki

In Physical Oceanography:
*Hazel Jean Little (with distinction)

In Physics:
*Gregory Scott Jackson (with distinction)
*Lidija Radovanovic

3. FACULTY OF COMMERCE

Dean: Professor I Woolard

ASSOCIATE IN MANAGEMENT

*Sesi Betty Gama
*Sizakele Phumzile Mtshali
*Belinda Christine Walker

ADVANCED DIPLOMA IN BUSINESS PROJECT MANAGEMENT

*Sweetness Xoliswa Jonas
*Johannes Makgobane

POSTGRADUATE DIPLOMA IN ACCOUNTING

Rukudzo Chirikumarara
*Ngwako Nondy Kapa
*Tariro Desiree Vera

POSTGRADUATE DIPLOMA IN BUSINESS ADMINISTRATION

*Sholom Levi Davidson
*Fabian Weber

POSTGRADUATE DIPLOMA IN MANAGEMENT

In Business & Systems Analysis:
*Allister Jerome Mars
Eric van Sensie

In Entrepreneurship:
*Janine Ritchie
*Precious Manono Thusi

In Marketing:
*Shonisani Murendeni Masutha

In Organisation & Management:
*Aloysius Kagiso Gaebee
*Jacob Moeketsane Molefe

In Sport Management:
*Jake Klass

DEGREE OF BACHELOR OF COMMERCE

*Robert Themba Hashe
*Azraa Karriem

DEGREE OF BACHELOR OF COMMERCE (HONOURS)

In Accounting:
*Kabelo Mangoba Pule

In Economics:
*Leonard Mamogobo

In Financial Analysis & Portfolio Management:
*Gabriella Joanna Hoogeweegen
Roland Nubiga Lima
*Connor Graham McLeod
*Mxolisi Ndodomzi Siwundla

In Tax Technical & Compliance:
*Siphelo Malinde

DEGREE OF MASTER OF BUSINESS ADMINISTRATION

*Sean Changwe Chibuye
*Mavi Nkosinathi Magagula
Zwelakhe Nsibande
*Christopher Mark Shadwell

DEGREE OF MASTER OF BUSINESS SCIENCE

In Marketing:
Tendai Ramona Mbumbwa

DEGREE OF MASTER OF COMMERCE

In Actuarial Science:
*Thomas Rooney (with distinction in the dissertation and the degree with distinction)

In Applied Economics:
*Scott Hosking
Noxolo Mpotsang Dorothy Mahlalela
*Lauren Lee Ross

In Development Finance:
*Ason Banda
*Edmund Bayen Bayen
Godfrey Kabengele
*Nompumelelo Nokubonga Ngubo

In Economic Development:
*Zara Danielle Christie
David Kapya
*Stanley Kasanga Mutinda
Thembekile Ashley Ncala
*Michelle Christina Roseborough
Lutho Vika

In Finance:
Wilfred Moyo

In Financial Management:
Dalitso Buluma
*Delano Laurie Gallagher
Brian Grimmer
*Michael Barrington Harber
*Constantin Hatzilambros
Pranisha Luckan (with distinction in the dissertation)
*Jake Somerset Trehaeven (with distinction)

In Financial & Risk Management:
*Chu-Kuo Chin
Gertrude Kgalalelo Tsumake
Dylan Ross Weimann

In Information Systems:
Adedolapo Oluwabukunola Akin-Adetoro (with distinction in the dissertation and the degree with distinction)
Nkosinathi Bitsini
Flora Jesse Kundaeli
Cosmas Muchinguri
Unathi Pokwana
Edwin Wanjogu (with distinction in dissertation)
Dickson Lee Lovemore Willie

In Management Practice:
*Margot Christelle Sheldon (with distinction)
*Sizwe Lenox Simelane
Lubabalo Stemele

In Marketing:
Nqobile Umenathi Bundwini

In Organisational Psychology:
*Jeff van Eijk (with distinction in the dissertation)

In South African Taxation:
Miki Brooks
Marthinus Cornelius Fredericks
Leanne Juul
Lindeni Lionell Kalipa
Allenda Glynn Langenhoven
Ivor Wayde Ockhuis
Dustin Wade Rebello

In Statistics:
Nosipho Zamanguni Immaculate Mzimela

In Taxation:
Noel Arnold Bugan
Ame Rebecca Chimbombi

DEGREE OF MASTER OF PHILOSOPHY

In Development Policy and Practice:
*Felix Mwenge
Nkere Gerald Skosana
Lauren Kim Uppink (with distinction)

In Inclusive Innovation:
*Danielle Jaffit
*Francois George Petousis

In Mathematical Finance:
Abby Leigh Davidson
Evan Peter Neville Jackson
Gareth William Schumann (with distinction in the dissertation and the degree with distinction)

In People Management:
Vivian Kaposambo
Hopolang Lolo Mini
Anneke Putter
*Moeketsi Abiel Tlhabanelo
Nokuthula Happy Zama

DEGREE OF DOCTOR OF PHILOSOPHY

In Business Administration:
Beatrice Clarice Adhiambo Addero
Thesis Title: *Investigating entrepreneurship as the nexus to mainstreaming the micro enterprise informal sector: a case study of blue chip companies in the Nairobi Securities Exchange and government organizations tasked with mainstreaming the micro enterprise jua kali sector in Kenya*

Beatrice Addero has a BA and an MBA from the University of Nairobi. Following an extensive career in advertising and marketing in East Africa she was determined to gain a deeper understanding of the limitations that prevent informal traders realise their potential for integration with the mainstream economy.

Beatrice Addero's thesis investigates the processes and policies in integrating the informal and formal economic sectors in Kenya. Adopting a case study approach, she conducted surveys of informal traders in Nairobi's major jua kali markets, blue-chip companies and government officials. This showed that there is little understanding of the economic and social determinants of the jua kali sector, contributing to a cycle of subsistence income, non-compliance of licensing and regulations, and the inability to access services such as electricity, water and retail channels. While government acknowledges that interventions are required, a long-term sustainable structure has yet to be achieved. She provides a basis for understanding the structural constraints and opportunities that may account for the failure to fully integrate the informal and formal economies in Kenya, resulting in a significant constraint on economic development. Her conclusions have wider implications for Africa and elsewhere.

Supervisor: Emeritus Professor M Hall
(Graduate School of Business)

Cecilia Rudo Matanga
Thesis Title: *Unravelling the role of parliament in developing network industries: comparative case of ICT sector reform in Kenya and South Africa*

Cecilia Matanga's doctoral research emerged from her work on the Southern African Development Community Parliamentary Forum (SADC-PF) and the United National Department of Economic and Social Affairs Africa i-Parliaments Action Plan. Her thesis addresses a gap in the literature on Information Communication Technologies (ICT) reforms in public policy where little is said on the role of parliaments.

Cecilia Matanga's thesis examines the roles of parliament in two countries pursuing an orthodox ICT reform model but with different outcomes. It locates parliament as one of a constellation of institutions in a conceptual framework that conceives ICT as a complex ecosystem. The interplay among the institutions influences sector reform outcomes. The comparative case study shows thatparliament is more than a neutral, legal structure in sector reform; it is a significant power-broker that reflects the competing interests at play, sometimes negotiating conflict in the public interest, sometimes serving as an agent for narrower interests of party or industry. The findings provide an understanding of important structural and institutional constraints on parliaments that, though country-specific, can be theorised to explain poor parliamentary outcomes in many developing countries and nascent democracies.

Supervisor: Professor A Gillwald
(Graduate School of Business)

Nadine Mayers
Thesis Title: *Bringing them together: Integrating economic and social-ecological dimensions in corporate decision-making*

Nadine Mayers has a BCom LLB from the University of Stellenbosch, and an MBA from UCT. Her doctoral work emerged from her MBA research, in which she explored the paradoxical tension between stakeholder and shareholder interests in management decision-making.

Nadine Mayer's thesis builds theory on the integration of economic, social and environmental dimensions in corporate decision-making. She addresses a gap in the corporate sustainability literature by exploring how organisations with predominantly economic priorities integrate these three dimensions. Her case study identifies the practices through which organisations manage the tensions between competing and interrelated priorities that emerge during the integration process. She argues that, notwithstanding organisational commitments to corporate sustainability, failure to manage these tensions perpetuates unsustainable corporate behaviour. Her thesis contributes a process-model of economic and social-ecological integration to the literature on corporate sustainability.

Supervisor: Professor R Hamann
(Graduate School of Business)
Co-supervisor: Dr A Smit (University of Stellenbosch Business School)

*Christina Swart
Thesis Title: *Innovation team members: emotive outlook and profiles comparisons*

Christina Swart has a BA, BA(Hons), MA Industrial Psychology and D.Phil from North-West University. As an Industrial Psychologist, her second doctorate emerges as a result of corporate experience since 1979.

Christina Swart's thesis focuses on innovation teams within the financial services industry, achieves further theory development in the field, and produces a novel way for setting up the team composition for innovation project implementation, using the emotive outlook profiles of team members, thereby ensuring higher probability of innovation project implementation success. The experiences and assessment results of innovation sponsors/champions and corporate team members in several African countries are contextualised and combined. She extends an affective neuroscience construct of emotional style into an organisational theory construct of emotive outlook. This synthesis provides a rich platform for practitioners

and, simultaneously, provides a useful approach for business application. The end result is an assessment formula for team composition which can be extended into future research.

Supervisor: Professor K April (Graduate School of Business)

In Economics:
*Katherine Eyal
Thesis Title: *Follow the child: the effect of an unconditional cash transfer on adolescent human capital and mental health*

Katherine Eyal has a BSc, BComHons and an MSc in Economics from the University of Cape Town. She is a lecturer in the School of Economics, and her research focuses on the economics of mental health and education.

Katherine Eyal's thesis examines the impact of South Africa's child support grant on adolescent educational achievement and mental health. Although the grant raises the probability that a teenager is enrolled in school, with a fairly large effect size, it has no measurable impact on the number of years of schooling attained. The grant is also found to have a substantial impact on the intergenerational transmission of depression, largely reducing the probability that depression in parents will be transmitted to teens. Although mothers are the most obvious channel of influence through which the grant may be affecting teen outcomes, this does not appear to be the case. Neither maternal mental health nor bargaining power are affected on receipt of the grant, implying that the positive impacts of child support grants are felt through the direct effect of grant receipt on adolescents. This implies that as envisioned by the original Lund commission, the grant is following the child.

Supervisor: Professor J Burns (Economics)

Elizabeth Nakakeeto Kasekende
Thesis Title: *Financial innovation and money demand in sub-Saharan Africa*

Elizabeth Kasekende holds a BA and MSc in Economics from University of North Texas, USA, and worked for the Bank of Uganda from 2006 to the start of her PhD programme.

Elizabeth Kasekende's thesis focuses on financial innovation and money demand in Sub-Saharan Africa, a topic that not only contributes to academic debate, but is also important for Central Banks and policymakers. While empirical studies of financial innovation have been undertaken for industrialised countries since the 2007/2008 financial crisis, few developing country studies exist. This is despite the fact that important innovations have taken place in Africa, particularly the development of mobile money (M-PESA). This technology was first developed in Kenya and enables individuals to transfer, deposit and save money using cell phones without necessarily having a bank account. She shows that financial innovation is important in explaining money demand in the region and that this specific type of innovation, mobile money, has played a crucial role in determining the demand for money. Her research also finds evidence that mobile money has an effect on the household consumption behaviour that could potentially have important implications for economic development.

Supervisor: Professor JP Dunne (Economics)
Co-supervisor: A/Professor E Nikolaidou (Economics)

In Information Systems:
Rene Winifred Albertus
Thesis Title: *Public private partnership contract management failure in information technology service delivery: a qualitative inquiry into the South African Department of Labour ERP Implementation Project*

Rene Albertus holds a CIS from the International Institute of Chartered Secretaries, an HDip in South African and International Tax from North West University, and a PGDM and MBA degree from the University of the Witwatersrand. Her doctoral work followed a 25-year corporate career in Finance, Taxation and Enterprise Systems Implementation.

Rene Albertus' thesis investigates the failure of a Public Private Partnership (PPP) IT service delivery project in a South African government department. Using an agency theory framework and a multi-method approach she conducts three empirical investigations into the failed project. Important findings are that: (1) robust institutional policies and governance mechanisms specific to PPPs for IT service delivery are necessary but not sufficient to combat risks of failure without performance monitoring and penalties for shirking. (2) Public sector managers need specialised knowledge to manage private partners in IT PPP contracts; over-dependence on private partners increases project failure risk. (3) Transparent governance and public accountability are needed to maintain public support and combat opportunistic behaviour by both private and public partners in such projects.

Supervisor: Professor O Ngwenyama (Information Systems)
Co-supervisor: Professor I Brown (Information Systems)

*Bojelo Esther Mooketsi
Thesis Title: *The impact of contextual factors on the implementation of the E-education policy in previously disadvantaged areas in Cape Town: the teacher's perspective*

Bojelo Sehuhula-Mooketsi has a BA, PGDE, and Certificate in School Librarianship from the University of Botswana and a BIBL (Hons), MLIS and MPhil IT (UCT). Her doctoral research emerged as a result of seeing contradicting perceptions about the success of the implementation of the white paper in e-education.

Bojelo Mooketsi's thesis explores the impact of contextual factors such as residential segregation on the implementation of the white paper on e-education in schools in previously disadvantaged areas in South Africa. Her findings show that the implementation context, the history of the implementers,

interactions between the policy actors and other issues that are in no way related to the implementation process, affected the implementation process and its outcomes. Furthermore, the implementation process was wrought with high degrees of ambiguity which is typical in public sector ICT policy implementation. The study also shows that there is need to have measures to evaluate ICT policy implementation which take into consideration the context in which the project exists and the perception of the intended recipients about the success or failure of the implementation.

Supervisor: Professor W Chigona
(Information Systems)

Kennedy Odiwuor J Okong'o
Thesis Title: *Public value of e-Government investments in the developing countries: An empirical exploration of the public sector in Kenya*

Kennedy Okong'o holds a BSc (Geomatics & Geo-Information Systems), an MSc (ICT Policy) Jomo Kenyatta University, an MBA (Information Systems), University of Nairobi, and an MA (Diplomacy), Moi University Kenya. His thesis is borne out of his experience as e-Government Project Manager for 1st Phase of Kenya's US$114.4M World Bank Transparency and Communications Infrastructure Program.

Kennedy Okong'o's thesis sets out to examine public value outcomes of e-Government investments in developing countries. The theories and methods informing the thesis are drawn upon public economics, public administration, political science and education technology. It contributes to theory by linking public value concept with e-Government investments to form a value model, useful in assessing e-Government value logic. It attempts to model the relationship between investments in e-Government and size of public sector where a well-fitted model is realised. It benefits from a user conference approach in converging preliminary results to validate the overall findings, which can aid address Kenya's dilemma of unsustainable size of public service that is threatening to cripple national development. To the best of his knowledge, this is one of pioneer value researches in e-Government investments, examined using a multi-disciplinary theoretical stance, from a developing country perspective, therefore avenues for possible lines of future research are discussed.

Supervisor: Professor M Kyobe
(Information Systems)

Hiranjali Ramburn Gopaul
Thesis Title: *A systematic analysis of ERP implementation challenges and coping mechanisms: The case of a large, decentralised, public organisation in South Africa*

Hiranjali Ramburn Gopaul holds a BBusSc and an MBusSc from UCT, and is a member of the academic staff in the Department of Information Systems. Her research and teaching interests include enterprise systems, organisational change, knowledge management and business analysis.

Hiranjali Ramburn Gopaul's thesis provides a holistic view of the ERP implementation process. The research reports on the challenges faced by organisations during their ERP implementations and analyses the interrelated nature of the challenges. In conjunction, this study identifies the coping mechanisms that can help organisations mitigate their implementation challenges. Key research contributions comprise the development of both descriptive and explanatory knowledge. The research findings disclose numerous ERP implementation challenges resulting in the emergence of a taxonomy of organisational, management, project management, change management, technical and knowledge challenges. The major contribution, underpinning the originality of this research, epitomises an explanatory theory, which offers rich insights into the dynamic and complex nature of the implementation process. The systemic model portrays how the complex interactions of implementation challenges and coping mechanisms influence the implementation process and allows both researchers and practitioners to theorise the different conditions that can influence the implementation outcome.
Supervisor: A/Professor L Seymour
(Information Systems)

4. FACULTY OF HEALTH SCIENCES

Dean: Professor B Mayosi

DEGREE OF DOCTOR OF MEDICINE

In Medicine:
*Ntobeko Ayanda Bubele Ntusi
Thesis Title: *Studies in Cardiomyopathy: Looking beyond the familiar*

Ntobeko Ntusi holds a BSc(Hons) degree in Molecular and Cell Biology from Haverford College, Pennsylvania, USA, and an MBChB from UCT. He was awarded a DPhil from the University of Oxford in the United Kingdom in 2015 for studies of inflammatory heart disease by cardiac magnetic resonance imaging.

Ntobeko Ntusi's MD thesis examines the familial aggregation, molecular genetics, magnetic resonance imaging features and outcome of dilated, peripartum, and hypertrophic cardiomyopathy in Cape Town. He shows for the first time that 25% of African patients with dilated cardiomyopathy have familial disease which also accounts for about 10% of patients with peripartum cardiomyopathy. In addition, a comprehensive screen of 15 genes implicated in hypertrophic cardiomyopathy revealed a disease-causing mutation in only 20% of African cases (compared to 80% elsewhere in the world), suggesting that there remains a large pool of genetic causes of cardiomyopathy to be discovered in Africa. Furthermore, cardiac magnetic resonance imaging of founder families with hypertrophic cardiomyopathy revealed a correlation between genotype and the cardiac imaging abnormalities. Finally, the presence of persistent symptoms despite good medical treatment in patients with cardiomyopathy was the strongest predictor of death. This information which is available without a need for testing should lead to the early referral of cases for life-saving interventions such as heart transplantation.

Supervisor: Professor BM Mayosi
(Medicine)

DEGREE OF DOCTOR
OF PHILOSOPHY

In Anatomical Pathology:
Anelisa Jaca
Thesis Title: *Investigating the relationship between miRNA expression and Epithelial Mesenchymal transition in colorectal cancer.*

Anelisa Jaca completed her MSc degree in the Division of Anatomical Pathology at UCT and continued to pursue her thesis investigating molecular changes in cancer.

Anelisa Jaca's doctoral research determined the association between miRNA (miRNA-21 and miRNA-34a) expression levels and Epithelial-mesenchymal transition in colorectal cancer and then correlated this data with clinicopathological features. Her study involved the profiling of miRNA using qPCR and immunohistochemistry. Anelisa showed that EMT markers, E-cadherin, N-cadherin, and vimentin were down-regulated in her study cohort. Furthermore, increased miRNA-21 expression was significantly associated with grade, lymph node metastasis and the age of patients. This investigation showed an inverse association between miRNA (miRNA-21 and miRNA-34a) expression and two EMT (N-cadherin and snail-1) markers in this colorectal cancer cohort. This study demonstrates how basic science together with clinical data can be translated to improved patient management.

Supervisor: A/Professor R Naidoo (Pathology)
Co-supervisor: Dr M Locketz (Pathology)

Pumza Samantha Magangane
Thesis Title: *Biomarker identification in HIV and non-HIV related lymphomas*

Pumza Magangane completed her MSc(Med) in UCT's Division of Medical Biochemistry, and joined the Division of Anatomical Pathology to pursue a PhD.

Pumza Magangane's research involved the use of cutting edge proteomics technology. MALDI-Imaging was used to identify and determine the distribution of proteins/peptides in both HIV and non HIV related diffuse large B-Cell lymphoma (DLBCL). Whilst many biomarkers for DLBCL exist, they are not in clinical use due to low sensitivity and specificity. In addition, these biomarkers have not been studied in the HIV context. Pumza's research identified a cluster of proteins that were differentially expressed between the two cohorts, including GAPDH, heat shock protein (Hsp) 70, histone proteins and ribosomal proteins. The expression of one of the proteins, Hsp70, was confirmed on a separate cohort of samples using immunohistochemistry. Hsp70 expression correlated with poor prognosis in the HIV negative cohort. Whilst the study found that DLBCL from HIV negative and HIV positive patients is clinically similar, there was differential expression of selected proteins. The proteins identified may be useful as diagnostic and prognostic biomarkers for HIV and non-HIV associated DLBCL.

Supervisor: A/Professor Richard Naidoo (Pathology)
Co-supervisor: Dr R Sookhayi (Pathology)

In Anatomy:
Petra Maass
Thesis Title: *A statistical shape analysis of the neurocranium and long bones*

Petra Maass has BSc, BSc(Med)(Hons) and MSc degrees from UCT. Her doctoral thesis emerged as a result of her experiences while working on forensic cases concerning skeletal remains with the South African Police Service and Forensic Pathology Services since 2012.

Petra Maas' thesis aims to quantitatively describe the morphological variation in the neurocranium and long bones of South African adult individuals by statistically analysing the association of morphological variations with demographic information such as sex and ancestry. Her study used the unique ability of three-dimensional geometric morphometric statistics to separate size and shape components of morphological variation to show how both genetics and environmental influences may influence skeletal morphology. The study showed that differences between sexes and ancestry groups exist in both the cranial bones and long bones, allowing estimations of these demographic parameters to be made for unknown individuals even in the complex South African population. The end result is not only applicable in biological anthropology but also in a forensic setting.

Supervisor: Dr LJ Friedling (Human Biology)

In Bioinformatics:
Chacha Marwa Issarow
Thesis Title: *Modelling the transmission of Tuberculosis*

Chacha Issarow has a BSc in Chemical Engineering from the University of Dar es Salaam and an MSc in Mathematical Sciences from the African Institute for Mathematical Sciences (AIMS), South Africa. His doctoral work was undertaken in the Department of Integrative Biomedical Sciences at UCT.

Chacha Issarow's thesis aims to model the transmission of tuberculosis at various locations in a community. Mathematical modelling is an important computational tool that can be used to predict the transmission of airborne infectious diseases and suggest preventive measures. Chacha Issarow developed several mathematical models, including a modification of the Wells-Riley model and subsequent versions of the model using carbon dioxide as a surrogate of exhaled air. Additional factors were considered to obtain a flexible but sensitive mathematical model that predicts the risk of airborne infectious diseases under steady and non-steady state conditions. Applying experimental data from in vivo studies to the model, the probability of exposed guinea pigs acquiring TB infection in these studies

was predicted, and the number of infective organisms required to reach the alveolar to establish infection quantified. The model may be used to predict TB transmission in congregate settings, such as public transport, prisons and health care settings.

Supervisor: Professor N Mulder
(Integrative Biomedical Sciences)
Co-supervisor: Professor R Wood
(The Desmond Tutu HIV Centre)

In Biomedical Engineering:
Muhammad Gulamabbas Saleh
Thesis Title: *Real-time motion and magnetic field correction for GABA editing using EPI volumetric navigated MEGA-SPECIAL sequence: Reproducibility and Gender effects.*

Muhammad Saleh obtained his BSc and MSc (with distinction) degrees from the University of Cape Town.

Muhammad Saleh's doctoral research emerged from a long-standing interest in investigating the mechanisms of learning deficits in children with prenatal alcohol exposure by measuring changes in γ-aminobutyric acid which is the primary inhibitory neurotransmitter in the brain. Unstable levels of γ-aminobutyric acid are associated with neurological diseases as well as cognitive deficits. Muhammad Saleh's thesis aims to set-up, implement, refine and optimise the MEGA-SPECIAL magnetic resonance spectroscopy sequence for robust measurement of brain GABA levels. His thesis describes the technology implemented to achieve real-time motion and shim correction followed by in vivo experiments to examine reproducibility and gender effects. Muhammad Saleh's work facilitates further investigation of cognitive deficits associated with foetal alcohol syndrome and HIV, and provides a framework for testing the efficacy of intervention strategies.

Supervisor: Professor E Meintjes
(Human Biology)
Co-supervisor: Dr A Alhamud (Human Biology)

In Cell Biology:
Jerolen Naidoo
Thesis Title: *Functional miRNA-based phenotypic screening as a tool to delineate HIV-host interactions and facilitate novel drug discovery*

Jerolen Naidoo obtained a BSc in Biological Sciences and graduated cum laude in both his honours and MSc degrees, also at the University of Kwa-Zulu Natal. His doctoral work emerged as a result of the need to develop high content screening (HCS) capabilities within the CSIR Biosciences unit.

Jerolen Naidoo's thesis aimed to establish a microscopy-based high content screening platform that could be utilised to delineate HIV-host interactions through both RNA interference and compound based screens. He developed and optimised the experimental protocols and operating procedures that now constitute the CSIR Biosciences HCS platform. This platform was used to screen a panel of human miRNA-based molecules to characterise human miRNAs that are functionally relevant to HIV replication. The molecular targets and functional pathways associated with these miRNAs allowed for the identification of central vulnerabilities in HIV-host interactions which may be exploited for therapeutic gain. Secondary drug-based screening, advised by miRNA targets, lead to the discovery of novel anti-HIV activity for a number of FDA-approved drugs. The end result was the characterisation of over 80 human miRNAs and 30 small molecule inhibitors as novel modulators of HIV replication which may be further developed as therapeutic agents.

Supervisor: Professor F Brombacher
(Integrative Biomedical Sciences)
Co-supervisors: Professor MM Mhlanga (Department); Dr S Barichievy (Innovative Medicine, Astrazeneca, Sweden)

In Clinical Pharmacology:
Jill Michelle Combrinck
Thesis Title: *The role of Haem in the mechanism of action of antimalarials in Plasmodium falciparum*

Jill Combrinck completed her BSc and BSc(Med)(Hons) degrees at the University of Cape Town before spending almost ten years in industry. Her PhD project forms part of an effort aimed at understanding the mechanism of action of antimalarial drugs.

Jill Combrinck's thesis reports the development of assays to measure the concentrations of haemoglobin, haem and haemozoin or malaria pigment in the malaria parasite. The assays are validated and then applied to various clinical and experimental antimalarial compounds. This work has provided the first direct evidence that chloroquine inhibits haemozoin formation and causes an increase in intracellular free haem in the malaria parasite, the putative mechanism by which the drug kills the parasite. Several experimental compounds were shown to have the same effect. The work provides an invaluable tool for probing the mechanism of action of newly discovered antimalarial compounds as well as providing important new insights into old medicines.

Supervisor: Professor T J Egan
(Chemistry)
Co-supervisor: A/Professor P J Smith
(Medicine)

In Clinical Science & Immunology:
Laura Mary Lenders
Thesis Title: *Microbiological, genomic and transcriptomic analyses of human tuberculosis lung cavities*

Laura Lenders has a BSc, BSc(Med) (Hons), and MSc (Medicine) from UCT. Prior to commencing her PhD, she worked at the Lung Infection and Immunity unit, and also at the healthcare innovation company, Antrum Biotech.

Laura Lender's thesis reports the genomic variability and drug-susceptibility profiles of drug-resistant Mycobacterium tuberculosis isolates, and host transcriptomic profiling, in tuberculosis cavities obtained from

surgically explanted human lungs. Host protective immunity and pathogenesis of cavitation in these patients is poorly understood. New insights are needed for the design of an effective vaccine that possibly targets cavitation. Furthermore, until now, there has not been a detailed whole-transcriptome-based pathophysiological map of TB lung cavities. The data has important implications for understanding the pathogenesis of failed host immunity, and the transcriptomic map uncovered several, hitherto, unrecognised pathways and TB-targets that may be useful for the design of vaccines, host-directed therapies, and transmission-prevention.

Supervisor: Professor K Dheda (Medicine)
Co-supervisors: Dr M Davids (Medicine); Professor R Warren (Medical Biochemistry, University of Stellenbosch) and collaborator Professor T Gumbo (Baylor Research Institute, Dallas, Texas)

In Emergency Medicine:
*Enrico Dippenaar
Thesis Title: *Standardisation and validation of a triage system in a private hospital group in the United Arab Emirates*

Enrico Dippenaar is an emergency care practitioner who attained an NDip and then a BTech in Emergency Medical Care from the Cape Peninsula University of Technology. This was followed by a MSc in Emergency Medicine from UCT.

Enrico Dippenaar's thesis research aimed to investigate the reliability and validity of diverse international triage systems used in the emergency centres of a private hospital group in the United Arab Emirates. It was necessary to design, standardise and validate a single locally appropriate triage system that can be used to accurately and safely assign triage priority in adults and children in this emergency care environment. The research required a systems development approach using action research methodology to analyse the patient demographic characteristics and the existing triage systems performance, to design and test a novel triage system that would be most appropriate for a low acuity emergency setting. The research resulted in the development of a novel triage system that can be implemented in the emergency centres of this private hospital group and transposed to other similar emergency centre settings.

Supervisor: Dr SR Bruijns (Surgery)
Co-supervisor: Dr AJW Oliver (Mediclinic Middle East)

In Exercise Science:
Linet Huchu
Thesis Title: *The association between cardiorespiratory fitness and performance in a submaximal stepping test standardised for external workload.*

Linet Huchu has a Diploma in Education from the University of Zimbabwe, a BSc in Physical Education and Sport from the Zimbabwe Open University and an MSc from Bindura University of Science Education. Her doctoral research emerged from the need for an effective submaximal cardiorespiratory fitness test.

Linet Huchu's thesis aims at developing a novel submaximal test of cardiorespiratory fitness (VO2max) that caters for diversity in age, sex and levels of physical activity. A series of studies contributes to the theoretical development of the step test protocol. Reliability, validation and cross-validation studies quantify the accuracy of the test. These studies show the step test is repeatable for most variables measured, and the "noise" of each measurement is comparable to the smallest detectable difference for the measurement. The main part of the thesis develops the equation which predicts VO2max using age, body mass, body fat %, metabolic equivalent, heart rate recovery, maximum heart rate and average heart rate during the test. This equation explains about 76% of the variance between predicted and measured VO2max. The standardised step test can predict VO2max in a diverse population and offers a practical, inexpensive solution to measuring fitness in the community.

Supervisor: Professor M Lambert (Human Biology)

In Health Communication:
*Warren Hickson
Thesis Title: *An interdisciplinary study exploring how health communication can most effectively explain Antiretroviral Medication (ART) and motivate adherence among young people.*

Warren Hickson has an MA from the Kent Institute of Art and Design, and an honours degree from Canterbury Christ Church University. His doctoral work emerged as a result of his visiting a HIV ward in South Africa while he was exploring research possibilities.

Warren Hickson's thesis aims to explore factors contributing to the success of health communication strategies and supporting visual communication tools designed to explain antiretroviral treatment (ART) adherence, and motivate young people who live with HIV to adhere to treatment. Warren Hickson develops a new theoretical understanding: first, concerning how young people become motivated to learn about treatment and adhere to it, and second, concerning how information about treatment can best be communicated to them. This substantive theory contributes knowledge relevant to how ART adherence is communicated to young people. The research included the development and testing of a prototype animation designed to support young people's learning about treatment, and the production of a film that shows a case study of a young person's journey to successful adherence.

Supervisor: A/Professor P Mayers (Health and Rehabilitation Sciences)
Co-supervisor: Dr H Newing (Independent Consultant)

In Human Genetics:
Dineo Gift Pule
Thesis Title: *Study of genetic modifiers of Fetal Hemoglobin and mechanisms of Hydroxyurea-induced-globin expression in sickle cell disease*

Gift Pule has a BSc and BSc(Med)(Hons) from UCT. While completing his MSc and PhD in nearly three years, he published 10 peer-reviewed articles and presented his work at 15 national and international conferences.

Gift Pule's thesis aimed to investigate selected genetic variants associated with the disease-ameliorating foetal haemoglobin (HbF) in Sickle Cell Disease (SCD), elucidate a microRNA-mediated regulatory pathway for HbF production following treatment with hydroxyurea, and lastly to provide a perspective on the prevalence and distribution of the sickle mutation in Southern Africa. In this multifaceted thesis, Gift Pule reports on the strong association of two erythroid-specific enhancer polymorphisms in BCL11A (rs1427407 and rs7606173) to HbF in Cameroonian SCD patients, and provides evidence of the complexity of validating novel HbF-promoting loci in African patients He examines the post-transcriptional mechanism, through microRNA, of hydroxyurea induction of HbF production, by down-regulating negative regulators; BCL11A, KLF-1 and MYB, with miR-26b at the core of MYB silencing. Finally he shows the increasing burden of SCD in adult patients in Cape Town and the importance of studying Southern African populations to understand the evolutionary dynamics of Bantu population genomes under the selective pressure of malaria.

Supervisor: Professor A Wonkam (Pathology)
Co-supervisors: Dr S Mowla (Haematology); Professor N Novitzky (Haematology)

In Medical Biochemistry:
Ru-pin Alicia Chi
Thesis Title: *Investigating a novel small molecule inhibitor of nuclear import as an anti-cancer approach*

Alicia Chi completed a BSc and a BScHons in Molecular and Cell Biology at UCT, and then enrolled for an MSc which was subsequently upgraded to a PhD.

Alicia Chi's thesis investigated the role of nuclear transport in cancer therapy, and in particular, explored a compound, INI-43, which was previously identified in their laboratory with nuclear import inhibitory effect. Using cultured cancer cells and a mouse experimental model, Alicia showed that INI-43 reduced cancer growth both in culture and in mice. She then explored the use of INI-43 in combination with a currently used chemotherapeutic drug, Cisplatin. She found that when used in combination, INI-43 and Cisplatin induced greater cancer cell death compared to the added effects of either drugs when used alone. Furthermore, the molecular alterations associated with greater cancer death observed in the combination treatment were examined. The results obtained in Alicia's research work prompts further investigation of the nuclear transport machinery in cancer, and warrants further testing and development of INI-43 which could potentially be a future class of anti-cancer drugs.

Supervisor: A/Professor V Leaner (Integrative Biomedical Sciences)
Co-supervisor: A/Professor D Hendricks (Integrative Biomedical Sciences)

Tariq Ahmad Ganief
Thesis Title: *A network analysis based proteomic and transcriptomic investigation into HIV-Tat induced neuronal dysfunction and the neuroprotective effect of lithium*

Tariq Ganief holds a BSc(Med)(Hons) and MSc (with distinction) in Biochemistry from UCT. He has been studying towards a PhD degree at UCT since 2009 in the Division of Chemical & Systems Biology.

Tariq Ganief's thesis lies in the field of neurodegenerative disease and is specifically concerned with identifying the molecular origins of HIV-associated neurocognitive disorders and evaluating the mechanistic effects of plausible therapeutic agents. His thesis thus describes the in vitro differential, quantitative analysis of the expressed protein complement (the 'proteome') of proliferating human neural cells in the presence or absence of the HIV transactivator protein, Tat, and lithium. Through this mass spectrometry-based proteomic study, Tariq Ganief identifies a set of significantly dysregulated proteins that collectively describe an HIV Tat-induced altered state for the human neural cells, thereby providing a plausible model for HIV-driven neurodegeneration in vivo. The methods and data that Tariq Ganief develops in this study will enable the in vitro evaluation of new, more selective therapeutic interventions in HIV-associated neurocognitive disorders, thus informing future clinical trials to determine optimal clinical management of this disease.

Supervisor: Professor JM Blackburn (Integrative Biomedical Sciences)

Erin Louise Strydom
Thesis Title: *Investigating Karyopherin B1: Small molecule interactions for cancer therapy*

Erin Strydom has a BSc from the University of Western Australia and MSc from the Open University, UK. She joined UCT as a doctoral student in March 2011.

Erin Strydom's research was aimed at investigating the effects on a novel small molecule, Inhibitor of Nuclear Import-43 (INI-43), on cancer cell biology and its potential to bind the nuclear transport protein, KpnB1. KpnB1 had previously been identified in the laboratory as a potential cancer biomarker and therapeutic target. Erin's research focused on the potential of INI-43 to inhibit cancer proliferation and its ability to bind KpnB1 using purified protein in drug binding studies including circular dichroism and isothermal calorimetry. Her research provides evidence that INI-43 kills cancer cells, most probably by interfering with KpnB1 associated nuclear import pathways. It also shows the INI-43 interferes with the nuclear localisation of KpnB1 itself and biophysical assays provide evidence for possible KpnB1-INI-43 interactions. Small molecules such as INI-43 present as promising tools for studying the potential of KpnB1 as an anticancer target.

Supervisor: A/Professor V Leaner (Integrative Biomedical Sciences)

In Medical Microbiology:
*Shima Mohammed Abdulgader
Thesis Title: *Nasopharyngeal carriage with Staphylococcus aureus in healthy children during the first year of life - The Drakenstein Child Health study*

Shima Abdulgader has BSc and Honours degrees from the El-Neelain University, Sudan. She joined the University of Cape Town as an MSc student in 2011 and upgraded to PhD in 2014.

Shima Abdulgader's thesis describes colonization, by the bacterium Staphylococcus aureus, of the nasopharynx of healthy infants and their mothers participating in a South African birth cohort. Nasopharyngeal (NP) swabs were collected from 137 mother-infant pairs at birth and two-weekly from infants during the first year of life. S. aureus isolates were characterized by antibiotic susceptibility testing, detection of the mecA and Panton-Valentine Leuckocidin genes, and typed by targeting the Staphylococcal protein A locus. S. aureus NP carriage occurred from birth, peaked by four weeks of age and declined thereafter. Male gender, higher socioeconomic status, maternal carriage, large family size and hospitalization were risk factors for carriage. This study demonstrates the importance of strain genotyping to determine carriage dynamics; the incidence rate of acquisition was significantly higher at the genotype level compared to the species level. Using the genotype diversity measure we found that persistent carriage is rare during infancy. We report a very low prevalence of methicillin-resistant strains and a strong relationship between the clonal complexes and antimicrobial resistance phenotypes. We also noted a shift in the resistance patterns over time within the same genotype carried by the same infant.

Supervisor: Professor M Nicol (Pathology)

In Medical Virology:
Rubina Bunjun
Thesis Title: *The effect of HIV co-infection on the T cell response to Mycobacterium tuberculosis*

Rubina Bunjun completed her BSc and BSc(Hons) in Molecular and Cell Biology at UCT. In 2010, she joined the Division of Medical Virology in the Department of Pathology as an MSc student, and subsequently upgraded her degree to a PhD in 2012.

The HIV and tuberculosis (TB) co-epidemic is a major public health crisis and a more effective TB vaccine is urgently needed. Rubina Bunjun's thesis characterises the effect of HIV on immunity to TB with a focus on the lungs. She reports on HIV viral load, lymphocyte infiltration and an altered soluble cytokine milieu in the airways in the presence of HIV infection. She demonstrates lower frequencies of TB-specific CD4+ responses, in both blood and the lungs during HIV infection. Rubina finds that TB-specific responses in blood are distinct from those in the airways, suggesting compartmentalisation of these responses, which has implications for TB vaccine evaluation. She also describes a previously unappreciated, high frequency CD4 T cell population producing the cytokine IL-22 in response to mycobacteria, that is defective during HIV infection. Thus, this thesis provides new insights into TB immunity during latent TB infection and HIV co-infection.

Supervisor: Dr WA Burgers (Medical Virology)
Co-supervisor: Dr C Riou (Medical Virology)

Shivan Chetty
Thesis Title: *The development of novel HIV-1 vaccines using modified recombinant BCG*

Shivan Chetty has a BSc (Biomedical Science) and MSc (Virology) from the University of KwaZulu-Natal. His doctoral work focused on the development of safe and immunogenic HIV-1 vaccines using novel rBCG vectors.

Shivan Chetty's thesis aimed to characterise the safety and immunogenicity of several genetically modified rBCG vectored HIV-1 vaccines when used as part of a heterologous prime boost regime in the murine model. He firstly performed a longitudinal study, tracking the development of vector mediated pathology to inform on vaccine safety following priming with different rBCG vaccines expressing HIV-1 Gag. This was followed by an assessment of vaccine induced immunogenicity where he measured and compared the induction of HIV specific T cell responses. Lastly, in order to determine the molecular basis of observed differences in pathology and immunogenicity, he performed real-time gene expression arrays. This led to the development of systemic and molecular models of pathology and immunogenicity associated with each different strain of rBCG when used as vaccine vector. Shivan Chetty is currently developing and commercialising the next generation of South African biotechnology based diagnostics and therapeutics for multiple diseases.

Supervisor: Professor A-L Williamson (Integrative Biomedical Sciences)
Co-supervisor: Dr R Chapman (Integrative Biomedical Sciences)

In Medicine:
*Kwezikazi Mkentane
Thesis Title: *Human scalp hair: geometry, biochemistry, growth parameters and mechanical characteristics*

Kwezikazi Mkentane has a BSc and an MSc from the Nelson Mandela Metropolitan University in Port Elizabeth. Her doctoral research emerged as a result of her fascination with the morphological variation of human hair.

Human hair is described in scientific literature using racial terms (such as Asian, European and African), in spite of significant within group variation. For example European hair ranges from straight to tightly curly. Biochemistry (especially lipid content) is thought to influence hair curl. Hair lipid content may influence incorporation and interpretation of lipid-soluble drug levels in hair. Kwezikazi Mkentane's thesis aims to use geometry to objectively group hair

curl variation and then measure various characteristics to investigate correlation with hair curl. Geometric measurements showed inter- and intra-assessor reliability for six hair curl groups. The end result has potential relevance for the use of hair as a testing substrate in Medicine, Forensic and Cosmetic Science.

Supervisor: A/Professor N Khumalo (Medicine)
Co-supervisor: A/Professor L Davids (Human Biology)

Melissa Nel
Thesis Title: *Identifying the molecular genetic basis for treatment resistant Ophthalmoplegia in a subset of Myasthenia Gravis patients of African ancestry*

Melissa Nel completed her MBChB at UCT in 2008. After her obligatory internship and community service she returned to pursue a career in clinical research. She registered with UCT initially to complete a Master in Science (by dissertation) and then upgraded to a PhD two years ago. She is interested in functional genomics and committed to translational research which will be relevant at the bedside.

Melissa Nel's thesis focuses on dissecting the pathogenesis of a neuromuscular complication that appears to occur almost exclusively in individuals with African genetic ancestry who develop a relatively uncommon autoimmune disease, myasthenia gravis. This work has afforded her the opportunity to become skilled in a wide range of laboratory techniques in molecular biology and genetics as well as develop a solid foundation in bioinformatics. She has already presented and published some of her work nationally and internationally. Her aim is to further her interest in African genomics by doing a postdoctoral fellowship in bioinformatics and functional genomics.

Supervisor: Professor J Heckmann (Medicine)
Co-supervisor: Professor S Prince (Human Biology)

Mahmoud Umar Sani
Thesis Title: *Characteristics and outcomes of acute heart failure in sub Saharan Africa*

Mahmoud Sani has an MBBS from the Ahmadu Bello University Zaria, Nigeria, and is a Fellow of the West African college of Physicians. His doctoral research emerged as a result of his collaborative research experience with UCT's Department of Medicine.

Mahmoud Sani's thesis aims to investigate the clinical characteristics, predictors of readmission and death, as well as the prognostic role of conventional and novel biomarkers in acute heart failure (AHF). This thesis was based on 2 studies - a sub Saharan African (SSA) prospective multicentre AHF registry (THESUS-HF), and a randomised clinical trial of combination of hydralazine and isosorbide dinitrate versus placebo in AHF (BA-HEF). The end result is a project that defines the profile and predictors of outcome of AHF patients in SSA. This will be useful to physicians from SSA for risk stratification of their patients, as well as paying more attention to the high risk patient for better outcomes. It also reveals that the novel biomarker, galectin-3 is a good predictor of outcome in AHF. This is a novel finding in SSA and this information can be used to develop bedside diagnostic kits for triaging patients.

Supervisor: Professor K Sliwa (Hatter Institute for Cardiovascular Research in Africa, Department of Medicine, UCT)
Co-supervisor: A/Professor G Cotter (Visiting Professor Hatter Institute for Cardiovascular Research in Africa, Duke University & Momentum Research Inc. USA)

In Nursing:
Tania de Villiers
Thesis Title: *Engaging male university student leaders in the adaptation process of the One Man Can Intervention (OMCI) to inform sexual violence prevention strategies in student residences: A case study*

Tania de Villiers holds a BSc and an MSc in Nursing from UCT. She also has Postgraduate Diplomas in Paediatric Nursing Science, Nursing Education and Nursing Administration. Her doctoral work emerged from her participation in research with her supervisors on prevention of sexual violence.

Tania de Villiers' thesis aimed to develop a primary prevention intervention for prevention of sexual violence in university residences, as a response to the current problem of sexual violence within the university community. In her thesis she used process evaluation and a series of qualitative research methods such as focus group discussions, direct observation and reflections to engage undergraduate male student leaders in residences in a process of adapting and implementing Sonke Gender Justice's community-based intervention for men, known as One Man Can. Data analysis of this adaptation process resulted in development of a university-specific primary prevention intervention for sexual violence, known as Men With Conscience. The Men With Conscience sexual violence prevention intervention is the first to be developed in a South African university setting. It can be extended to other higher education institutions to engage male students as partners in the prevention of sexual violence.

Supervisor: A/Professor S Duma (Health and Rehabilitation Sciences)
Co-supervisor: Professor N Abrahams (Medical Research Council, Gender Health Unit)

Miriam Atieno Wagoro
Thesis Title: *A grounded theory of the Kenya human interaction model for mental health nursing practice*

Miriam Wagoro has a BScN and MScN from the University of Nairobi, Kenya and a PGDip (International Research Ethics) from UCT. Her doctoral research emerged as a result of the lack of a mental health nursing model to guide practice in Kenya, where she works as a mental health nurse practitioner and educator.

Miriam Wagoro's thesis aims to develop the Kenya model for mental health nursing practice, using a Grounded Theory approach for collection and analysis of qualitative

data from mental health nurses on four major metaparadigms of a nursing theory, including human being, environment, mental health nursing and mental health. The core phenomenon that emerged from qualitative data is the human interactions and the causative condition is the bio-psycho-socio-spiritual human being who is at risk for or experiences mental illness. The emerged Kenya Human Interaction Model for Mental Health Nursing Practice describes different dimensions of the environment as the intervening conditions; nurses' biographies and experiences as the contexts for mental health nursing practice and other conditions and strategies that are necessary for optimum mental health outcomes for patients, families and communities in Kenya. The model can be extended to other nursing practice settings.

Supervisor: Professor S Duma (Health and Rehabilitation Sciences)
Co-supervisors: Professor P Mayers (Health and Rehabilitation Sciences); Professor Chitere (Sociology)

In Physiotherapy:
Roline Yvette Barnes
Thesis Title: *An investigation into the nature and prevalence of musculoskeletal conditions among women attending a community clinic, and the effectiveness of an intervention programme for these patients*

Roline Barnes has a BSc Physiotherapy, a Tertiary Education Diploma and MSc in physiotherapy from the University of the Free State, where she has been a member of the academic staff since 1990.

Roline Barnes' thesis documented the development and testing of a non-pharmacological biopsychosocial intervention program which included exercise and health education for women between the ages of 40 to 64 years with musculoskeletal disorders attending a clinic in a poorly resourced area of the Free State Province in South Africa. The development of an appropriate intervention was informed by several sub-studies. Systematic reviews on the use of exercise and health education in adults with chronic diseases of lifestyle and their impact on Health Related Quality of Life (HRQOL), function and participation were completed. A facility-based study determined the prevalence and nature of musculoskeletal disorders in this group. The information was then used to develop an intervention program tailor made for these patients. Finally, an experimental randomized, controlled trial was undertaken to determine the effectiveness of the intervention programme compared to usual care. The intervention programme was feasible, acceptable to the community and resulted in a significant improvement in HRQOL. Roline Barnes suggests that the programme be incorporated into the routine management of similar patients attending the clinic.

Supervisor: Professor J Jelsma (Health and Rehabilitation Science)
Co-supervisor: A/Professor RE Parker (Health and Rehabilitation Science)

In Psychiatry:
*Jacobus Ockert Coetzee
Thesis Title: *Caregiving experiences of South African mothers of adults with intellectual disability who display aggression: clinical case studies*

Ockert Coetzee has a BA and MA in Clinical Psychology from North-West University. His doctoral work emerged from his clinical experiences as a psychologist and psychotherapist in different intellectual disability services in South Africa and Ireland.

In a field of research that has received scant attention in South Africa, Ockert Coetzee's thesis explores the use of cognitive-behaviour therapy to develop a clinical understanding of the distressing caregiving experiences of a group of South African mothers whose children have intellectual disability (ID) and persistent displays of severe aggression. Existing research has found that the parents of children who have ID and behavioural difficulties report higher levels of parental stress and symptoms of depression when compared with parents whose children have ID without significant behavioural problems. The themes that emerged from the study describe the accumulative impact of negative caregiving events on parents who are required to provide prolonged caregiving because of the high behavioural and care support needs of their children. The study's findings and emphasis on psychotherapy process and contextual factors make an original contribution to research with clinical implications to clinicians who work in similar contexts.

Supervisor: Professor C Adnams (Psychiatry and Mental Health)
Co-supervisor: Professor L Swartz (Psychology, Stellenbosch University)

In Public Health:
Deborah Ann Constant
Thesis Title: *Strengthening medical abortion in South Africa*

Deborah Constant has a BSc (Physiotherapy), MSc and MPH from UCT, where she has been a member of the academic staff from 1991-2002 in the Department of Human Biology, and since 2010 in the School of Public Health and Family Medicine. Her doctoral work emerged from her experience in women's health research.

Deborah Constant's thesis aims to strengthen medical abortion in the South African public health-care sector through novel interventions to support task sharing individual components of abortion care. Medical abortion has the potential to improve access to care and can safely be provided at primary care level or partly self-managed. Deborah Constant's research evaluates approaches that support a decentralised model of health-care delivery, supplemented by simple technology for use by community health workers or by women themselves. In combination, these approaches hold potential for expanding safe, accessible and quality abortion care in the South African public sector and in other similar low-and middle income settings.

Supervisor: A/Professor J Harries (Public Health and Family Medicine)
Co-supervisor: Professor L Myer (Public Health and Family Medicine)

In Surgery:
Angela June Dell
Thesis Title: *Global Surgery: socioeconomic and geographic maldistribution of surgical resources*

Angela Dell has a BSc and MBChB from UCT. She is currently a registrar specialising in General Surgery, and her doctoral research emerged as a result of guidance from her supervisor, who encouraged her interest in Global Surgery.

Angela Dell's thesis aims to quantify some of the specific surgical resources as identified by the World Health Organization and the Lancet Commission on Global Surgery. South Africa's surgical resources fall far below international recommendations, as well as high income countries such as the United Kingdom and United States. Surgical resources are concentrated in metropolitan areas, which results in inequity and marginalisation of rural communities. This research indicates how surgical providers and basic infrastructure are distributed in South Africa, and has provided much needed data on the resources which are currently available. It will allow stakeholders and policymakers to implement policies which better cater for the surgical needs of patients. This may influence critical decision-making about funding distribution, resource and training post allocations, and address inequalities in service delivery. There is a need to acknowledge the major shortage of healthcare providers with the planned implementation of the National Health Insurance.

Supervisor: Professor D Kahn (Surgery)

Henrietta Refiloe Mofokeng
Thesis Title: *The biochemical analysis of mucus and mucins in respiratory diseases with a focus on tuberculosis*

Henrietta Mofokeng holds a BSc, BSc(Hons) and MSc in Biotechnology from the University of Western Cape.

Henrietta Mofokeng's thesis aimed to characterise respiratory mucus in tuberculosis (TB). Respiratory diseases are a major cause of death in South Africa, with TB being one of the major respiratory illnesses, against a background of HIV infections. The respiratory tract is lined by a layer of mucus gel which protects the airways and lungs from injury by foreign agents. The viscous nature of this gel is due to its mucin (mucous glycoprotein) component with MUC5AC and MUC5B being the predominant respiratory tract mucins. Little is known of the association between respiratory mucins and TB. Henrietta Refiloe Mofokeng's study found that there was an upregulation of MUC5AC and MUC5B in TB and a novel mucin MUC2, more in patients with TB and other respiratory diseases. This suggests the presence of a thicker gel lining the respiratory tract, in response to infection but with the possible compromise of airway function. Mucins contained sialic acid, the negative charge of which contributes to the highly viscous nature of expectorated material. Different core structures of oligosaccharides were found in mucins in TB alone compared with TB and HIV.

Supervisor: Professor A Mall (Surgery)

*Richard Spence
Thesis Title: *Implementation of a structured surgical quality improvement programme*

Richard Spence holds an MBChB from UCT. He thereafter completed an MPhil in Public Health from Cambridge University, on the Mary Gray Scholarship to St John's College. After completing his master's degree, he returned home to commence formal general surgical training at UCT. He was awarded the Discovery Health Academic Fellowship, the Netcare Trauma Fellowship and a research fellowship at the Codman Center for Clinical Effectiveness in Surgery at Massachusetts General Hospital, Harvard University. This gave him the necessary support to complete his PhD.

Richard Spence's thesis aimed to examine surgical outcomes in the Cape Metro. The paucity of reliable surgical outcomes data is a recurring limitation to improving the quality of surgical care in Low to Middle Income Countries. Addressing this in his thesis, he hypothesised that emerging m-Health technology, defined as medical and public health practices supported by the use of mobile devices, could provide a solution to close such data gaps. Various m-Health applications were used to develop three databases, describing the outcomes of major surgery performed within the Cape Metro West health district. Using these de novo databases, his thesis addresses, which perioperative variables should be collected, how best to collect them, how to analyse these data, and the ideal quality metric in our setting.

Supervisor: Professor A Nicol (Surgery)
Co-supervisors: Professor E Panieri (Surgery), Professor DC Chang (Surgery Harvard University).

5. FACULTY OF SCIENCE

Dean: Professor A le Roex

DEGREE OF DOCTOR OF PHILOSOPHY

In Applied Mathematics:
Mebratu Fenta Wakeni
Thesis Title: *Stable algorithms for generalized thermoelasticity based on operator-splitting and time-discontinuous Galerkin finite element methods*

Mebratu Wakeni has a bachelor's degree from Bahir Dar University, and an MSc from Addis Ababa University, Ethiopia. He became interested in PhD research in Applied Mathematics as a result of his experience at the African Institute of Mathematical Sciences (AIMS), where he obtained a Postgraduate Diploma in Mathematical Sciences.

Mebratu Wakeni's thesis aims to develop and analyse efficient computational algorithms for solving coupled problems that describe different physical phenomena arising in mechanics and engineering, with particular emphasis on generalised thermoelasticity. Such algorithms involve physically motivated splitting of the coupled problems into simpler sub-problems which are easier to handle computationally. The numerical methods treat space and time in a single finite element framework, and are effective in capturing the qualitative behaviour of solutions of such problems.

Another aspect of Mebratu Wakeni's thesis is the formulation and numerics of a thermodynamically consistent coupled, nonlinear model of generalised thermoelasticity, which is capable of accounting for a wave mechanism of thermal transportation in pure crystalline solids. The generalised thermoelastic model can potentially be used to explain anomalous behaviour involving thermal conduction.

Supervisor: Professor BD Reddy (Mathematics & Applied Mathematics)
Co-supervisor: Dr AT McBride (Infrastructure and Environment, University of Glasgow)

In Archaeology:
Tawanda Mukwende
Thesis Title: *An archaeological study of the Zimbabwe culture capital of Khami, south-western Zimbabwe*

Tawanda Mukwende has a BA (Hons) from Midlands State University and an MA from the University of Zimbabwe. His experience as a Heritage Manager with the National Museums and Monuments of Zimbabwe motivated his doctoral research.

Tawanda Mukwende's thesis focuses on understanding the material culture of the Zimbabwe Culture capital of Khami. Special emphasis is on developing a tight chronology of the site using a combination of material culture evidence and radiocarbon dates. Khami is the second largest dry-stone walled site in southern Africa and a lack of understanding of its archaeology in the past has resulted in scholars often disregarding its contribution and role in the development of state systems in the region, and regarding it as an off-shoot of Great Zimbabwe. Tawanda Mukwende's thesis fills this gap and shows that Khami was an important centre that developed in south-western Zimbabwe, independent of happenings at Great Zimbabwe. Similarity in material culture across the site also suggests that relations amongst the inhabitants were not dichotomised, as has been suggested in the past.

Supervisor: A/Professor S Chirikure (Archaeology)
Co-supervisor: A/Professor S Hall (Archaeology)

In Astronomy:
Keoikantse Moses Mogotsi
Thesis Title: *The star formation and dynamics of nearby galaxies*

Moses Mogotsi has a BSc from Rhodes University, as well as a BScHons in Astrophysics and Space Science and an MSc in Astrophysics from UCT. For his doctoral work, he studied galaxies from the MHONGOOSE sample that will be observed at radio wavelengths by MeerKAT, the South African precursor instrument of the Square Kilometer Array (SKA).

Moses Mogotsi's thesis looks at a scaling relation between the surface density of star formation and gas in the disks of galaxies, which has become the basis of our understanding of extragalactic star formation on scales of hundreds of parsecs and larger. This is an empirical law but star formation is a complex process - the presence of gas at sufficiently high densities to collapse and form stars depends on a wide variety of physical processes. These processes can be thought of in terms of the stability of galaxy disks, which is a balance between the gravitational force and competing forces such as the outward force due to pressure. In this study, Moses Mogotsi explores how star formation is related to galaxy dynamics in the central regions of galaxies.

Supervisor: Professor C Carignan (Astronomy)
Co-supervisors: Professor E de Blok (The South African Research Chairs Initiative); Professor G Meurer (The International Centre for Radio Astronomy Research - ICRAR)

In Biological Sciences:
Hayley Susan Clements
Thesis Title: *Multi-scale, social-ecological influences on private land conservation in South Africa*

Hayley Clements has BSc and BSc (Hons) degrees in Zoology from UCT, and an MSc in Zoology from Nelson Mandela Metropolitan University. Her doctoral research was inspired by an interest in private land conservation that she developed while working on a private game reserve.

Hayley Clements' thesis aims to advance social-ecological systems theory through an analysis of the socioeconomic and ecological interactions that drive the management of private land conservation areas (PLCAs). Despite the recent global increase in commercially-operated, privately-owned conservation areas, little is known about the industry and whether society can rely on it to conserve biodiversity into the future. Hayley Clements interviewed 72 PLCA managers in the Eastern and Western Cape Provinces of South Africa, obtaining information on PLCA objectives, management strategies and characteristics. She showed that diverse business models have been adopted by managers, with important consequences for financial viability. Managers' financial objectives influence their ecological management strategies, with emergent trade-offs between managing for short-term financial gain and longer-term ecological sustainability. Hayley Clements' thesis makes a novel contribution to our understanding of the interactions between managers and ecosystems by showing how the decisions made by natural resource managers influence the eventual success of conservation efforts.

Supervisor: (Professor G Cumming) (Biological Sciences)
Co-supervisor: (Professor T Hoffman) (Biological Sciences)

*Alistair Mcintyre Mcinnes
Thesis Title: *Fine-scale drivers of African Penguin prey dynamics in Algoa Bay, South Africa, and their impacts on penguin foraging ecology*

Alistair McInnes has a diploma and BTech in Nature Conservation from the Tshwane University of Technology and an MSc in Zoology from the University of KwaZulu-Natal. Selection of this thesis compliments his experience in applied conservation biology and the need to better understand complex ecological systems.

The purpose of Alistair McInnes' thesis is to assess the extent to which bio-physical processes influence the foraging ecology of endangered African

Penguins. He studies how oceanography and commercial fisheries influence the availability of pelagic fish around two of the penguin's largest colonies in Algoa Bay, St Croix and Bird islands. He identifies the fish aggregations targeted by penguins and models their availability as a natural control to demonstrate the impacts of resource competition between purse-seine fishing operations and African Penguins. His research concludes with recommendations for the management of the small pelagic fishery, including the need to integrate dynamic spatio-temporal factors into its management.

Supervisor: Professor P Ryan (Biological Sciences)
Co-supervisors: Dr L Pichegru (Biological Sciences) (now at NMMU); Dr M Lacerda (Statistical Sciences)

Gregory Lilgee Mutumi
Thesis Title: *Geographic variation in the phenotypes of two sibling horseshoe bats Rhinolophus simulator and R. swinnyi*

Gregory Mutumi comes from a background in forestry in Zimbabwe and received his MSc in Zoology from UCT. His doctoral research emerged from his interest in the evolutionary processes responsible for the enormous diversity of life.

Gregory Mutumi's thesis aims to tease apart the relative roles of natural selection and random genetic drift in shaping the diversity of mammals in southern Africa. He answers this question through a comparative study of the morphological and echolocation variation in two species of horseshoe bats (Rhinolophidae) of similar distribution and body size, but with different echolocation calls. He shows that natural selection, rather than drift, is responsible for phenotypic divergence within each species and that the selection pressures faced by each species are influenced by the differences in their echolocation. This suggests that acoustic signals can play a major role in lineage diversification, through which biodiversity is generated.

Supervisor: A/Professor DS Jacobs (Biological Sciences)
Co-supervisor: Dr H Winker (South African National Biodiversity Institute)

Gareth John Tate
Thesis Title: *Exploring the maintenance of plumage polymorphism in the Black Sparrowhawk*

Gareth Tate has a BSc and a BScHons from UCT. In 2014 he upgraded his master's degree to a PhD at the Percy FitzPatrick Institute.

Gareth Tate's thesis explores the mechanisms behind the maintenance of colour polymorphism in an African raptor, the black sparrowhawk. His study affords us exciting new insight into the role of animal colour in facilitating concealment of predators from their prey, contributing an important piece to the evolutionary puzzle of how animal colour is shaped by natural selection. The implications of the findings presented in Gareth's research extends far beyond his study system and help us better understand how colour polymorphism facilitates the successful colonisation of different environmental conditions, demonstrating why polymorphism is frequently associated with rapid evolution and accelerated speciation rates and showcases how polymorphic species may be better equipped to cope with future global climate change and range shifts.

Supervisor: Dr A Amar (Biological Sciences)
Co-supervisor: Dr J Bishop (Biological Sciences)

In Botany:
Abubakar Bello
Thesis Title: *Taxonomy and evolutionary studies on the genus Psoralea L. (Psoraleeae, Fabaceae)*

Abubakar Bello has a BSc (2005) and MSc (2011), both from the Usmanu Danfodiyo University Sokoto, Nigeria.

Abubakar Bello's thesis investigates evolutionary relationships among the species in the legume tribe Psoraleeae and revises the taxonomy of the pinnate-leaved species of the genus Psoralea. The Psoraleeae have a widespread distribution, with centres of diversity in the Cape, as well as in subtropical areas of North America and Australia. The predominantly Southern African genera (Psoralea and Otholobium) have a common ancestor origination in the late Miocene and have rapidly diversified in the fynbos biome, leading to over 130 species. This rapid diversification has involved multiple independent origins of species surviving fire episodes as seed, with such seeding species common in fynbos vegetation growing on mountain seepages. As a consequence, species identification and delimitation has been difficult, hence the taxonomy of the pinnate-leaved Psoralea species is revised to recognise 25 species, among which 14 are formally described as part of this study.

Supervisor: A/Professor AM Muasya (Biological Sciences)
Co-supervisor: Dr SBM Chimphango (Biological Sciences)

Annalie Melin
Thesis Title: *An assessment of the floral resources used to support managed honeybees and its implications for understanding ecosystem services related to crop pollination*

Annalie Melin has an MSc in Conservation Science from Imperial College, UK, which included a research project on sustainable resource use. Her doctoral work arose from an interest in South African ecological systems and an opportunity to look at honeybee pollination services for agriculture.

Annalie Melin's thesis aims to understand the role played by different landscape elements for sustaining managed honeybee hives that provide pollination services to agriculture in the Western Cape. Her research was done within the socio-ecological context of the placement of apiary sites at a regional scale, decisions regarding hive numbers at a landscape level, and resource use by honeybees within apiary sites. She achieved this by proposing an expanded ecosystem services conceptual model and testing her ideas using a combination of beekeeper interviews, landscape analysis of apiary sites and DNA analysis of pollen loads at the hive level. Overall, her thesis provides insights into the importance of different floral resource-types and demonstrates the complexity of understanding how South African landscapes are used to support managed

honeybees. In particular, her thesis shows that honeybees in the Western Cape rely on both natural and human-modified habitats.

Supervisor: Professor J Donaldson (Biological Sciences and South African National Biodiversity Institute)
Co-supervisors: Professor M Rouget (School of Agricultural, Earth and Environmental Sciences, University of KwaZulu-Natal,); Professor J Midgley (Biological Sciences)

In Chemistry:
Ana Andrijevic
Thesis Title: *New methodology for the synthesis of chiral, non-racemic α-tertiary amine centres: Application to the synthesis of the marine Alkaloid Lepadiformine*

Ana Andrijevic, originally from Serbia, has made South Africa her home for the past 16 years. She holds BSc and BScHons degrees in Chemistry from UCT.

Ana Andrijevic's thesis in synthetic organic chemistry has achieved a novel methodology for modifying naturally occurring α-amino acids by substituting the α-hydrogen atom by a carbon group, while retaining handedness of the molecule. The resultant synthesised entity represents an important structural motif in many bioactive natural products, and is also present in synthetic building blocks for drug-discovery, a good example being α,α-disubstituted quaternized amino acids in peptidomimetics. The usefulness of the new chemistry developed was demonstrated in the synthetic construction of the chiral quaternary α−tertiary amine centre of the anti-cancer marine alkaloid Lepadiformine, in which an advanced intermediate towards the total synthesis of the alkaloid was achieved. Overall, the new methodology provides access to a range of bioactive natural-product-like structures of interest to drug-discovery programmes in medicinal chemistry.

Supervisor: Professor R Hunter (Chemistry)

Gurminder Kaur
Thesis Title: *A medicinal chemistry approach to drug repositioning in the treatment of Tuberculosis and Malaria*

Gurminder Kaur has a BSc from Punjab University, Chandigarh (India) and an MSc from Guru Nanak Dev University, Amritsar (India).

Gurminder Kaur's thesis emerged as a result of the need to find novel chemotherapeutics for the treatment of tuberculosis (TB) and malaria, diseases that remain leading causes of deaths, especially in Sub-Saharan Africa. Drug resistance and other challenges associated with existing TB and malaria treatments have necessitated the development of novel agents. The process of new drug development can potentially be accelerated by applying the drug repositioning approach, an approach where a drug active in one disease can be synthetically derivatized to obtain analogues active in another disease. Gurminder Kaur's thesis focuses on repositioning of two drugs in the field of TB and malaria. These drugs were used as potential templates and subjected to chemical synthesis. The resulting new derivatives were biologically evaluated and structure-activity relationship studies were conducted. The biological results of synthesized derivatives presented in her thesis highlight the importance of this approach for the development of anti-TB and antimalarial drugs.

Supervisor: Professor K Chibale (Chemistry/Institute of Infectious Disease & Molecular Medicine/South African Medical Research Council Drug Discovery and Development Research Unit)

Vaughan Jean Maurel
Thesis Title: *Beneficiation of selected pesticides and an antihyperlipidemic agent via cyclodextrin complexation and co-crystallization*

Vaughan Maurel was educated in Mauritius, where he completed the International Baccalaureate Bilingual Diploma Programme. He subsequently attained a BSc (Chemistry and Biochemistry) and a BSc(Hons) in Chemistry from UCT.

Vaughan Maurel's thesis demonstrates the efficacy of modifying the physicochemical properties of selected bioactive molecules by employing supramolecular chemistry techniques. Specifically, it describes the synthesis and physicochemical characterisation of multi-component crystalline solids obtained by reacting the bioactive molecules (two pesticides and a lipid-lowering drug) with suitably chosen organic partner molecules. Within the resulting multi-component crystalline solids, the components are linked by relatively weak, non-covalent connections (hydrogen bonds, van der Waals interactions), ensuring that the bioactive components maintain their inherent pesticidal and pharmacological activities. On dissolution in water these multi-component systems display modified aqueous solubilities relative to those of the untreated bioactive materials. Similarly, on heating the multi-component systems, they display melting points that differ from those of the untreated materials. Such fine-tuning of these physical properties can be exploited in formulating the pesticides for safer, localised application and the drug for more efficient in vivo delivery and prolonged shelflife.

Supervisor: Emeritus Professor MR Caira (Chemistry)
Co-supervisor: Professor SA Bourne (Chemistry)

Carina Alicia Renison
Thesis Title: *The design and development of GPU accelerated algorithms for ab initio integrals and integral derivatives illustrated on ab initio quantum and hybrid QM/MM dynamics*

Carina Renison completed her undergraduate training at North-West University, with honours in Chemistry and Applied Mathematics. In addition, she obtained an MSc in Chemistry from the University of Johannesburg. She started her doctoral studies in the Scientific Computing Research Unit (SCRU) at UCT in 2012.

Carina Renison's thesis is principally involved with the development

of algorithms for Hybrid Quantum classical simulations that are designed for Graphical Processing Units (GPUs). Her algorithms and computer code form part of a library of routines that make up a package called the Quantum Supercharger Library (QSL) that is being developed in SCRU at UCT. Her doctoral research delivers the capability to QSL to run ab initio quantum dynamics on realistic chemical models on commodity hardware. This innovation provides computational chemists, chemical biologists, materials scientists and engineers with increased ability to more accurately and more easily model fundamental and complex chemical processes. Her innovative algorithms make it possible to undertake high performance computations that were previously the domain of supercomputers, on computer hardware that is affordable and accessible to researchers in university laboratories.

Supervisor: Professor KJ Naidoo (Chemistry)

Ian Lloyd Rogers
Thesis Title: *Measuring the effects of reaction coordinate and electronic treatments in the QM/MM reaction dynamics of Trypanosoma cruzi trans-Sialidase*

Ian Rogers has BSc, BSc(Hons) and MSc degrees from UCT. His majors in Chemistry and Biochemistry sparked his interest in applying scientific computing methods to problems at the interface of chemical reactivity and biology.

Ian Rogers' thesis investigates the predictive value as well as the limits of the state-of-the-art computational methods possible in enzymology. The specific focus of his thesis is computational reaction dynamics methods (FEARCF) developed in the laboratory of Professor Kevin Naidoo. He achieves this through a systematic exploration of the enzymatic mechanism of Trypanosoma cruzi trans-sialidase. The enzyme's catalytic reaction mechanisms are assessed within the framework of transition state theory, the discovery of transition state structures, and the description of drivers of selectivity. Here for the first time a detailed analyses of multidimensional free energy reaction profiles and the underpinning sampling has been performed on a complex enzyme system. This resulted in a novel chemical insight into the catalytic mechanism and the reaction selectivity of the glycosyltransferase. Ian makes a valuable technical innovation by the parallelization of FEARCF ab initio quantum reaction dynamics calculations. In so doing this work has facilitated the accurate computations of enzyme reactions.

Supervisor: Professor KJ Naidoo (Chemistry)

Manare Molahlegi Dorothy Semenya
Thesis Title: *Non-neuroleptic antitubercular and anticancer therapeutics through rational drug remodelling of phenothiazines and related antipsychotics*

Dorothy Semenya obtained BSc and BScHons degrees from UCT, and subsequently upgraded her MSc to PhD.

Dorothy Semenya's thesis is established in the concept of drug remodelling. That approach has garnered significant research interest in the light of dwindling new drug candidates for resistant forms of tuberculosis. Various clinically-approved non-antibiotics, including phenothiazines, hold promise as novel classes of therapeutics in other indications, such as tuberculosis and cancer. However, in addition to inherent neuroleptic properties, phenothiazines and related antipsychotics elicit adverse side-effects at clinically relevant doses, thus precluding their extensive clinical application. Herein, it is postulated that the selectivity of phenothiazines and related drugs for non-neuroleptic indications could be enhanced through rationalized structural remodelling. Phenothiazine and related neuroleptics are known to have a common structural requirement for neuroleptic effects. Rational deviation from this structure is expected to decrease potential for neuroleptic effects, but not necessarily antimicrobial and anticancer effects. Therefore, the remodelling strategies involved introduction of novel functionalities that are somewhat dissimilar to native phenothiazine structures. After biological evaluation, Dorothy Semenya reports that it is possible to abolish neuroleptic effects of phenothiazines through rationalized structural manipulation and still retain bio-activities of interest. Overall, this study presents a novel subclass of phenothiazines that hold promise as non-neuroleptic agents in tuberculosis and cancer treatment.

Supervisor: Dr A Jardine (Chemistry)

John Geoffrey Woodland
Thesis Title: *Insights into the mechanism of action of quinoline antimalarials against Plasmodium falciparum revealed by novel fluorescent analogues and chemical proteomics*

John Woodland completed his BSc and BSc (Hons) degrees at UCT. His PhD research arose from a need to understand the cellular localisation of antimalarials in the malaria parasite.

John Woodland's thesis reports the design and synthesis of fluorescent derivatives of quinine, quinidine and chloroquine for live cell imaging. The photophysical, physico-chemical and antiparasitic activities of these compounds are evaluated and they are used in imaging of live malaria parasites using both confocal microscopy and super-resolution microscopy. Finally, the intermediates prepared for the synthesis of these fluorescent analogues are also used to attach to support beads and employed to bind target proteins from the parasite. A single target parasite protein of these three drugs is identified using proteomic techniques. The work provides important new insights into the cellular localisation and targets of these antimalarial drugs.

Supervisor: Professor TJ Egan (Chemistry)
Co-supervisor: Professor R Hunter (Chemistry)

In Computer Science:
Sindiso Mpenyu Nleya
Thesis Title: *Design and optimisation of a low cost Cognitive Mesh Network*

Sindiso Nleya graduated from the National University of Science and Technology (NUST) in Zimbabwe with

a BSc (Hons) in Applied Physics and an MSc in Computer Science in 2003 and 2007 respectively.

Sindiso Nleya's doctoral thesis is premised on spectrum sharing being a major factor in increasing the capacity supply in the near future. He extends this research by leveraging on analytic optimisation approaches, such as game theory, Lagrange multipliers and genetic algorithms, in order to design a low cost cognitive radio community mesh network. The end result low cost Cognitive mesh network is best suited for rural and remote areas, where smaller populations exist. The network also has implications in both highly populated rural and urban areas, as it is an enabler of Internet of Things (IoT), making it possible for machine-to-machine communications, as well as the smart city applications.

Supervisor: Dr M Keet (Computer Science)
Cosupervisor: A/Professor AB Bagula (University of the Western Cape, Computer Science)

In Conservation Biology:
Julia Baum
Thesis Title: *The influence of location on the structure and functioning of private land conservation networks in the Western Cape province of South Africa*

Julia Baum studied at the universities of Bayreuth, Uppsala and Karlsruhe. She graduated in 2011 with a Diploma (MSc) in Genecology, focusing on land use change and its impact on biodiversity and ecosystem services provision in Mediterranean France, and subsequently moved to Cape Town to conduct her PhD research.

Julia Baum's thesis develops an approach for identifying the dominant influences on private land conservation. Treating private protected areas as linked social-ecological systems, she uses resilience theory and data from 70 different private protected areas to explore how private conservation areas respond to perturbations. Her research focuses particularly on the role of spatial patterns and relationships as influences on protected area sustainability. She assesses the system identity of private conservation areas in the Western Cape province based on four elements system components, relationships among components, sources of continuity, and sources of innovation. Location and connectivity influence each of these elements. Her thesis offers a synthesis of theory and practice for understanding and managing the resilience of conservation areas. She also discusses options for building desired resilience in social-ecological systems, and highlights the opportunities her research offers and its practical implications for conservation both within and beyond South Africa's borders.

Supervisor: Professor GS Cumming (Biological Sciences)

In Environmental & Geographical Science:
Jacqueline Kariithi
Thesis Title: *Developing responsible nature-based tourism in the Mount Elgon region of Kenya: integrated approaches*

Jacqueline Kariithi has an honours degree in Environmental Sciences from the University of East Anglia, and an MSc in Business Strategy & Environmental Management from the University of Bradford, both in the UK. She further advanced her interests as a lecturer and researcher at the School of Environmental Studies, Kenyatta University, Kenya.

Jacqueline Kariithi's thesis aims to develop a conceptual framework for understanding integrated approaches and their implications for the triple bottom line of economy, environment and society in the context of developing responsible nature-based tourism. The protected areas of the Mount Elgon ecosystem of Kenya are used as a case study to tease out these processes. The significance of the research is that it contributes new knowledge that can be potentially useful to the Mount Elgon region as a tourism destination. The findings indicate that integrated approaches can be applied to understand the roles of the primary stakeholders in building or enhancing tourist destinations, local participation, environmental preservation and conservation and market sustainability of tourism enterprise development. The intention is to create a mechanism that will go beyond providing recommendations for Mount Elgon region stakeholders to embrace responsible nature-based tourism, and that allows researchers to adopt this methodology in similar environments and destinations.

Supervisor: Professor M Meadows (Environmental & Geographical Science)
Co-supervisor: Dr F Eckardt (Environmental & Geographical Science)

Nicholas Philip Simpson
Thesis Title: *A capabilities approach to environmental assessment - Enhancing the integration of human development and well-being considerations in participatory environmental decision making*

Nicholas Simpson holds a BA(Hons) degree in Geography from Rhodes University, plus a PGCE and an MPhil degree in Environment, Society and Sustainability from UCT.

Nicholas Simpsons' research develops an evaluative framework for public participation in environmental assessment (EA), building on the capabilities approach of Nussbaum and Sen. His research emphasises the effectiveness and equity imperatives of participation to enhance human development and well-being. He advances the consilience of the capabilities approach and EA with emphasis on the principles of justice in participatory decision making. A mixed methods approach evaluates five South African cases using a discourse analysis of EA reports, and Likert and Q methodology surveys of stakeholders. The findings highlight the stakeholder's ability, opportunity and constraints to participation. The research contributes to the praxis of EA through a theoretical framework that focuses on the ethical imperatives for meaningful participation. The research recommends that practice consider stakeholders' freedoms to choose environmental futures that can reasonably be considered valuable, and highlights the rich empirical context for the development of a more robust sustainability-orientated capabilities approach.

Supervisor: Dr RC Hill (Environmental and Geographical Science)

In Molecular & Cell Biology:
Valera Lucena Dias
Thesis Title: *Investigation of the effect of a probiotic-supplemented diet on the haemocyte proteome of the abalone Haliotis midae*

Valera Dias has a BSc in Marine Biology from Eduardo Mondlane University, Mozambique and a MSc of Applied Science (Marine Environment) with Honours from the University of Tasmania, Australia.

Since climate change can be expected to increase the susceptibility of farmed abalone to infectious disease, Valera Dias' thesis employs a proteomics approach to identify proteins that respond to microbial probiotics that have been shown to stimulate the immune system of farmed abalone. Her study identifies a number of haemocyte proteins that are differentially expressed in response to probiotic-supplementation of abalone feed which function in metabolism, apoptosis, the immune response, and in response to stress. One of the proteins, putatively identified as Ras-related protein Rab 1A, was significantly down-regulated in both the membrane and cytoplasm of haemocytes sampled from probiotic-fed abalone. This is the first time a high-throughput proteomics approach has been used to investigate the effect of probiotic-supplementation on the immune response of Haliotis midae. The data obtained from this study reflect the complexity of the abalone immune system and provide an important resource for the discovery of molecular biomarkers that could potentially be used to monitor the health of farmed abalone.

Supervisor: A/Professor V Coyne (Molecular and Cell Biology)

Lovemore Kunorozva
Thesis Title: *PERIOD3 variable number tandem repeat genotype associations with performance, injury, illness and re-entrainment*

Lovemore Kunorozva obtained his BSc, BScHons and MSc in Molecular and Cell Biology from UCT.

Lovemore Kunorozva's thesis investigates whether the performance or likelihood of injury and illness in professional rugby players travelling between Australia, New Zealand and South Africa were impacted differentially depending on their PERIOD3 (PER3) variable-number, tandem-repeat polymorphism genotype. PER3 plays a role in the body's internal circadian clock and this polymorphism has been linked to one's preference for morning or evening activity and sleep pressure. Circadian rhythms affect athletes' performance at particular times of day, impacting on scheduling of events and adjustment following travel across time zones that causes jet lag. Jet lag can have a negative impact on travelling athletes, and recovery time varies significantly between individuals. The players were recruited from the SA rugby teams participating in the Super 15 Rugby tournaments in 2011 and 2012. The effect of blue-enriched light on phase-shifting circadian rhythms was assessed in healthy, low physically-active male participants in a simulated jet-lag study. The PER3 genotype appears to explain some of the variations in an individual's match performance, injury and illness incidence rates in the Super Rugby competition, as well as re-entrainment following time zone travel. Results from this study suggest that PER3 genotype underlies some of the inter-individual variation in jet lag recovery.

Supervisor: A/Professor LC Roden (Molecular and Cell Biology)
Co-supervisor: Dr DE Rae (Human Biology)

Rafe Lyall
Thesis Title: *Regulation of desiccation tolerance in Xerophyta seedlings and leaves*

Rafe Lyall has BSc and BScHons degrees from the University of Cape Town.

Rafe Lyall's thesis set out to decipher the genetic basis of desiccation tolerance (DT) in the leaves of the resurrection plant, Xerophyta humilis, which can recover from almost complete water loss. His thesis tests two alternate hypotheses, namely whether DT evolved from activation of seed master gene regulators in response to water loss, or from an indefinite extension of the window when germinating seedlings are DT. RNA-Seq technology is used to assemble the transcriptome of X. humilis from desiccating leaves, to test the first hypothesis. Whilst many seed- maturation genes are expressed in X. humilis during desiccation, the seed master gene regulators were silent. He presents an alternative hypothesis that a suite of transcription factors, best known for responding to mild water loss in desiccation sensitive plants, activates the seed maturation genes. Rafe Lyall measures DT in Xerophyta seedlings to evaluate the second hypothesis. Whilst the survival rate declines temporarily at the earlier stages of germination, this dip can be eliminated by priming the seedlings prior to desiccation. It remains to be shown whether DT in germinating Xerophyta seedlings is activated by different sets of transcriptional regulators on either side of this dip.

Supervisor: Professor N Illing (Molecular and Cell Biology)
Co-supervisor: Dr R Ingle (Molecular and Cell Biology)

In Ocean & Atmosphere Science:
Sarah-Anne Nicholson
Thesis Title: *Intra-seasonal variability of Southern Ocean primary production: the role of storms and mesoscale turbulence*

Sarah-Anne Nicholson completed a BScHons and MSc in Physical Oceanography at UCT. Her PhD is a joint degree between UCT and l'université Pierre et Marie Curie (UPMC) in Paris. Her doctoral work falls under an international collaborative project SOCCLI (The role of Southern Ocean Carbon cycle under Climate change) supported by the Marie Curie Actions fellowship.

Sarah-Anne Nicholson's thesis work seeks to advance the understanding of the drivers of intra-seasonal variability of Southern Ocean primary production, a research area with important impetus toward constraining uncertainties in the global carbon budget. To this end, she uses state-of-the-art high-resolution numerical ocean-biogeochemical models to simulate the passage of storms over a mesoscale turbulent ocean. These model experiments demonstrate that intra-

seasonal storm-linked physical supplies of dissolved iron in summer play a considerably more active and influential role in explaining sustained summer productivity than previously believed. This is through two important insights: Storm-eddy interactions may strongly enhance the magnitude of upper-ocean vertical mixing in both the surface mixed layer as traditionally understood, as well as in the subsurface ocean. Storm initiated inertial motions may reinforce vertical advective supplies of dissolved iron for weeks after a storm.

Supervisor: A/Professor M Vichi (Oceanography)
Co-supervisors: Dr P Monteiro (Oceanography); Dr S Swart (Oceanography);
Dr M Levy (UPMC, LOCEAN)

*Marie Elizabeth Smith
Thesis Title: *The use of reflectance classification for chlorophyll algorithm application across multiple optical water types in South African coastal waters*

Marie Smith has a BSc, BScHons and MSc from UCT. Her doctoral thesis emerged as a result of her honours and master's work in ocean colour remote sensing, where much of her research has focussed on the assessment and utility of various satellite data products in coastal waters.

Marie Smith's thesis aims to characterise the bio-optical variability in the coastal waters of South Africa through fuzzy c-means cluster analysis of in situ, synthetic and extracted satellite reflectance data. The resulting clusters, representing various optical water types, are used to identify water type appropriate chlorophyll a algorithms to be used in a satellite reflectance classification and algorithm application procedure, capable of assigning and seamlessly blending water type appropriate algorithms on a per-pixel basis. The classification framework is applied to ten years of satellite data, demonstrating the great value of this approach for characterising the spatial and temporal bio-optical variability of the region. The resulting classification and algorithm blending framework provides an improvement on standard satellite applications with the capability to seamlessly apply and blend water type appropriate algorithms into a single optimised output product that is capable of retrieving highly dynamic ranges of concentrations across many optical water types.

Supervisor: A/Professor M Vichi (Oceanography)
Co-supervisors: Dr S Bernard (Oceanography); Dr M Matthews (CyanoLakes)

In Physics:
Angus Craig Comrie
Thesis Title: *A new compact neutron spectrometer*

Angus Comrie completed a BSc with majors in Computer Science and Physics, followed by a BScHons and MSc in Theoretical Physics from UCT. He also spent a year at KU Leuven doing MSc coursework in solid state physics.

Angus Comrie's thesis describes the development and proof-of-principle testing of a new compact, mobile and direction-sensitive neutron spectrometer detector. The device is based on modern plastic scintillators coupled to silicon photomultipliers, and a digital implementation of pulse shape discrimination is used to separate events associated with neutrons from those associated with gamma rays. The spectrometer is suitable for use over a wide neutron energy range (1–100 MeV), and was tested using neutrons from radioisotopic sources, 14 MeV neutrons from a D-T fusion neutron generator, and high neutron beams at the iThemba LABS cyclotron facility. The spectrometer will find use in many applications, including radiation safety, security monitoring and smart farming. In particular, there is an urgent need for compact instrumentation for dosimetry at high altitudes and in space, where a significant proportion of the radiation dose results from high-energy neutrons produced from interactions of cosmic rays in the atmosphere or body of the aircraft or spacecraft.

Supervisor: Professor A Buffler (Physics)

*Luis Alberto Hernández
Thesis Title: *Hadronic matter: from vacuum to extreme temperature in the presence of magnetic fields*

Luis Alberto Hernandez has BSc and MSc degrees from National University of Mexico. He was motivated to carry out his doctorate in order to provide the best models to explain successfully the fundamental forces and hence better understand visible matter and its behavior.

In his PhD thesis Luis Hernandez explores the behaviour of matter at extreme temperatures, as prevalent shortly after the Big Bang creating our Universe, as well as in nuclear collisions at the Large Hadron Collider (LHC) at CERN, in Switzerland, and at the Relativistic Heavy Ion Collider (RHIC) at the Brookhaven National Laboratory in the USA. He also examines the behaviour of matter in the presence of enormous magnetic fields, achievable at the collision point in the LHC, as well as in the core of neutron stars and magnetars. This work contributes to our understanding of the nature of the forces between quarks, currently the most elementary known particles in the Universe.

Supervisor: Emeritus Professor CA Dominguez (Physics)
Co-supervisors: A/Professor H Weigert (Physics); Professor K Schilcher (University of Mainz, Germany)

Serges Zambou
Thesis Title: *Electrical performance and use in logic of printed current switching transistors employing nanostructured silicon*

Serges Zambou, has BSc, BSc(Hons) and MSc degrees in physics from the University of Yaounde 1, Cameroon. He further completed a Postgraduate Diploma in Mathematical Sciences at the African Institute for Mathematical Sciences (AIMS) before joining the Physics Department in 2012 for his PhD, specialising in nanoscience.

Serges Zambou's thesis falls in the field of printed electronics, focusing on the conception, production and characterisation of current switching

transistors (CST) capable of working both in DC and AC current, with the capability to operate at very low temperature. He uses various morphological, electrical and cryogenics characterisation techniques to show that milled silicone can be used as active material to produced printed flexible transistors, and logic gate. The main finding of this research shows that (i) printed current switches using silicon as active material, are very reliable and stable to current/voltage bias, and therefore can be used for an extended period of time; (ii) printed CST shows improved electrical characteristics at cryogenic temperature, therefore offering the opportunity to be used in low-temperature environment; (iii) printed flexible components can be easily used as independent building block for much more complex circuits.

Supervisor: A/Professor M Blumenthal (Physics)
Co-supervisors: Emeritus Professor DT Britton (Physics); Emeritus A/Professor M Härting
(Physics)

In Statistics:
Gregory Brett Distiller
Thesis Title: *A continuous-time formulation for spatial capture-recapture models*

Gregory Distiller holds a BBusSc, BComHons and an MSc from UCT. He has been a member of staff since 2004 and made the decision prior to starting his PhD to conduct research in the area of Statistical Ecology.

Gregory Distiller's thesis develops the first analytic framework for spatial capture-recapture (SCR) surveys operating in continuous-time. SCR methods have become the industry standard for estimating and modelling animal distribution and density from capture-recapture data. To date, all SCR models have been based on discretizing time, which requires aggregation of continuous time into discrete occasions. Historically, discrete occasion models have been adequate, but SCR surveys are increasingly conducted using devices that sample continuously in time and which "capture" individuals virtually, without physically holding them. Greg's research develops the first continuous-time framework for SCR surveys with such devices. It enables researchers to use detection time information to draw inferences about how animal activity patterns change over time – something that cannot be done when time information is lost due to aggregation. The framework also leads to an estimator for the case in which detectors or traps are taken out of action by catching animals.

Supervisor: Emeritus Professor L Underhill (Biological Sciences)
Co-supervisors: Dr B Erni (Statistical Sciences); Professor D Borchers (Mathematics and Statistics, University of St Andrews)

Etienne Alexander Denault Pienaar
Thesis Title: *Non-linear diffusion processes and applications*

Etienne Pienaar has a BSc from the University of Johannesburg and a BScHons and Postgraduate Diploma in Actuarial Science from UCT.

Diffusion processes are defined in terms of systems of stochastic differential equations. Using these systems of equations, it is possible to formulate compact models of real-world phenomena. Unfortunately, the dynamics of such models are analytically intractable for all but a few simple models. Etienne Pienaar's thesis focuses on developing methods for performing inference and analysis on various classes of time-inhomogeneous non-linear diffusion models, ranging from pure diffusion processes to jump diffusion processes with state-dependent and stochastic jump mechanisms. The research also covers non-linear first passage time problems for diffusion processes. Throughout, a number of software packages are developed for R -- a statistical computing language -- where the methodology is applied to a suitably general class of models, making it possible to analyse non-linear diffusion models accurately and efficiently, without having to construct complex algorithms.

Supervisor: Dr M Varughese (Statistical Sciences)

In Zoology:
Marc Sebastian Burman
Thesis Title: *Citizen science reveals complex changes in barn swallow phenology in South Africa over three decades*

Marc Sebastian Burman has a BSc and a BSc(Hons) in Biological Sciences from UCT. After graduating, he worked in technical writing, manufacturing, and finally as a data analyst, returning to UCT in 2012 to pursue deep interests in nature and the ecological effects of climate change.

Marc Burman's thesis explores the impact of climate change on the timing of the annual cycle of a migratory bird which breeds in Eurasia and migrates to Africa. The barn swallow Hirundo rustica is the iconic harbinger of spring in the northern hemisphere. This research project uses citizen science data collected by bird ringers over the past 30 years, a period during which the timing of spring has shifted earlier by varying amounts across Eurasia. The project explores changes in the timing of two life-cycle processes, feather moult and pre-migratory weight gain, in South Africa. Barn swallows from the entire breeding range, from Ireland to east of the Urals in Asian Russia, migrate to South Africa. The research shows that proportions of swallows migrating from different sections of Eurasia to various regions of South Africa vary enormously. This information helps understand the complex patterns of change in the timing of moult and weight gain observed in the South Africa data.

Supervisor: Emeritus Professor LG Underhill (Biological Sciences)
Co-supervisors: A/Professor R Altwegg (Statistical Sciences); Dr B Erni (Statistical Sciences);
Dr M Remisiewicz (Biological Sciences, University of Gdansk)

*Katrina Jane Campbell
Thesis Title: *Factors influencing the foraging behaviour of African Penguins (Spheniscus demersus) provisioning chicks at Robben Island, South Africa*

Katrina Campbell has a BSc from McGill University, in Montreal, Canada. She

worked as a Wildlife Technician for Environment Canada before coming to South Africa to research African Penguins at the Robben Island colony. Her passion for the research led her to upgrade from an MSc to a PhD.

Katrina Campbell's thesis aims to extend our knowledge of endangered African Penguins. It further develops morphological indicators for sex determination and body condition. African Penguin tracking data provide indications of foraging effort. This thesis investigates penguin foraging behaviour with the concurrent monitoring of local prey abundance around the island and of chick condition. These provide snapshots of the ecological dynamics at a west coast colony. Katrina Campbell's investigations demonstrate the importance of local prey resources for African Penguins during chick-raising. The findings of the thesis provide support for ecosystem management, conservation and continued monitoring.

Supervisor: Emeritus Professor L Underhill (Biological Sciences)
Co-supervisors: Dr R Crawford (Biological Sciences); Dr R Sherley (Biological Sciences); Dr A Steinfurth (Biological Sciences)

Eulália Domingos Mugabe
Thesis Title: *Aspects of the biology, ecology and fishery of the beaked clam Eumarcia paupercula (Holten, 1802), in Maputo Bay*

Eulalia Mugabe has a BSc with honours from the Eduardo Mondlane University in Mozambique, and an MSc from the Federal University of Santa Catarina in Brazil. She has been a researcher and member of the academic staff of the School of Marine and Coastal Sciences in Mozambique since 2007. Her doctoral project resulted from the capacity-building plan of the academic staff and researchers working in Marine Sciences in the Western Indian Ocean.

Eulalia Mugabe's thesis investigates the population structure, growth, reproduction and exploitation of the beaked clam Eumarcia paupercula in Maputo Bay. Her study highlights that temporal population dynamics are influenced by fishing and reproductive patterns of the species. She reports that, although clams are an important source of income and food for artisanal fishers, fishing management is absent in Mozambique. Findings of her study have relevance and application for the livelihood of the collectors, as well as the sustainability of the E. paupercula stock, by providing a basis for fishery governance. She suggests setting a daily bag limit and establishing rotational closed areas for fishing as the major measures to ensure sustainable exploitation of this stock.

Supervisor: Emeritus Professor CL Griffiths (Biological Sciences)

Jennifer Margaret Olbers
Thesis Title: *Taxonomy, biodiversity and biogeography of the brittle stars (Echinodermata: Ophiuroidea) of South Africa*

Jennifer Olbers holds a BSc from the University of Johannesburg, and an honours and MSc from the University of KwaZulu-Natal. Her doctoral thesis materialised after recognising the need for echinoderm taxonomists in South Africa while working as a marine ecologist for Ezemvelo KZN Wildlife, where she has been based since 2007.

Jennifer Olbers' thesis aims to supplement our understanding of the biodiversity of South Africa's marine invertebrates. She adds 28 new species to the South African fauna, has established that 33 species of brittle star are endemic to the region and has recorded 28 taxonomic changes to the group. She also evaluates the biogeographic patterns of the brittle stars within South African waters and extends the distribution ranges of 23 species. Her greatest contribution to marine science is an illustrated field guide to the brittle stars of South Africa, a first for this group in South Africa.

Supervisor: Emeritus Professor CL Griffiths (Biological Sciences)

Robert Nicholas Vause Raw
Thesis Title: *The role of echolocation in communication in a high duty cycle echolocating bat, Rhinolophus clivosus (Chiroptera: Rhinolophidae): an experimental approach*

Robert Raw has a BScHons and MSc from UCT. His postgraduate academic career started in the terrestrial environment, working on chameleon movements, moved to marine studies of shark population demographics and finally to the air, working on bat acoustic communication.

Robert Raw's thesis uses an experimental approach to investigate the role of echolocation in interspecific communication in multispecies bat assemblages. He tests the Acoustic Communication Hypothesis, which proposes that in multispecies assemblages, multidimensional acoustic space is partitioned, so that each species occupies a discrete acoustic space despite overlap in single parameters. The investigation uses a three tier experimental approach: firstly, testing their ability to discriminate between echolocation calls of heterospecifics with either discrete or overlapping call frequencies, secondly, to investigate which call components are involved in discrimination by using synthesised calls to manipulate individual acoustic parameters and finally, to investigate preference, based on echolocation, during the mating season to calls of the opposite sex and between individuals with differing body conditions. Robert Raw's study provides the first experimental evidence of call components, other than frequency, that may play a role in species discrimination and questions earlier reports that bats use echolocation in mate choice.

Supervisor: A/Professor DS Jacobs (Biological Sciences)
Co-supervisor: Dr A Bastian (Biological Sciences)

Kelly Ellen Patricia Vlieghe
Thesis Title: *The ecology of Namibian fairy circles and the potential role of sand termites (Psammotermes allocerus Silvestri) in their origin*

Kelly Vlieghe has BSc and BScHons degrees from UCT. Her doctoral research was inspired by a project begun in her honours year, and was upgraded from an MSc project.

Kelly Vlieghe's thesis investigates the origin, nature and ecology of the enigmatic bare, circular patches in the Namib Desert known as fairy circles, and provides evidence that they are the result of the foraging patterns of the Sand termite in the vicinity of their subterranean nests. Evidence to support this hypothesis is derived from comparisons of spatial characteristics, environmental responses and soil properties of fairy circles with those of termite nests. Spatial correlates of termite abundances on circles are linked to the developmental progression of fairy circles. Experimental herbivory trials with Sand termites demonstrates a mechanism for grass mortality on the circles. The thermal biology of Namibian grasses is linked with soil temperatures to eliminate this possible mechanism of grass death on circles, and modelling is used to estimate circle longevity and identify environmental factors influencing circle density and size.

Supervisor: A/Professor M Picker (Biological Sciences)
Co-supervisor: Dr B Erni (Statistical Sciences)

ACADEMIC DRESS

OFFICERS OF THE UNIVERSITY

CHANCELLOR

The Chancellor wears a gown made from dark blue silk. The front of the gown has facings down each side made of dark blue velvet embroidered with a gold floral design. The gown and sleeves are lined with pale blue silk and the sleeves are looped up in front with a gold cord and button. The yoke of the gown is edged with gold cord. The gown is worn with a square blue velvet hat with a soft crown and gold tassel.

VICE-CHANCELLOR

The Vice-Chancellor wears a gown made from bright blue silk. The front of the gown has facings down each side and sleeve-linings of pale blue silk. The sleeves are looped up in front with a gold cord and button and the yoke of the gown is edged with gold cord. The gown is worn with a black velvet bonnet with a silver cord.

DEPUTY VICE-CHANCELLOR

A Deputy Vice-Chancellor wears a gown made from dark blue silk. The gown has closed sleeves with an inverted T-shaped opening at the level of the elbow to free the arms. The front of the gown has facings of light blue down each side. The sleeves are lined with light blue and the yoke of the gown is edged with silver cord. The gown is worn with a black velvet bonnet with a silver cord.

CHAIR OF COUNCIL

The Chair of Council wears a gown, of the same pattern as that worn by the Vice-Chancellor, made from light blue silk. The front of the gown has facings down each side and a yoke of dark blue. The sleeves are lined with dark blue and the facings and yoke are trimmed with gold cord. The sleeves are looped up in front with a gold cord and button. The gown is worn with a black velvet bonnet with a gold tassel.

MEMBERS OF COUNCIL

Members of Council wear graduate-pattern gowns made from black silk. The front of the gown has 10cm wide, light blue facings down each side trimmed with dark blue cord. The gown is worn with a black velvet bonnet with a blue cord.

REGISTRAR

The Registrar wears a gown made from black silk. The front of the gown has 10cm wide facings of blue silk down each side. The gown is worn with a black velvet bonnet with a white cord.

PRESIDENT OF CONVOCATION

The President of Convocation wears a gown made from black silk and has long closed sleeves with an inverted T-shaped opening at the level of the elbow to free the arms. The front of the gown has facings down each side and sleeves of blue silk. The gown is worn with a black velvet bonnet with a blue tassel.

ACADEMIC DRESS (continued)

GOWNS

A plain black gown styled after the pattern of the Oxford scholar's gown is worn by diplomats, and Bachelor's, Honours and Master's graduands. Senior doctoral graduands wear a scarlet gown, with facings the colour distinctive of the faculty in which the degree is awarded. PhD graduands wear a scarlet gown without facings.

HOODS

The hood is particular to the qualification and the faculty. Diplomates and Bachelor's grdauands wear a black hood lined with white and edged with the colour distinctive of the faculty. Master's graduands wear a black hood lined with the colour distinctive of the faculty and edged with white, except in the case of the hood for the MMed degree, which is edged with red. Senior doctoral graduands wear a hood of the colour distinctive of the faculty and a black velvet bonnet with a cord of the colour distinctive of the faculty in which the degrees is awarded. PhD graduands wear a hood of scarlet lined with black and a black velvet bonnet with a cord of the colour distinctive of the faculty in which the degree is awarded.

DISTINCTIVE COLOURS

Faculty of Commerce	Yellow
Faculty of Engineering and the Built Environment	Green
Faculty of Health Sciences	Red
Faculty of Law	Old gold
Faculty of Humanities	Blue
Faculty of Science	Purple

VALUES OF THE UNIVERSITY

The University is a community of scholars, teachers, students and staff. A community implies the shared acceptance by its members of common values. The concept of values implies not only rights but also obligations, for the community itself and for its individual members.

This statement of values provides a framework that informs and governs what is considered by the University community to be appropriate and acceptable behavior. The statement also serves as the foundation for a range of University policies and guides the management of particular aspects of University life.

As a community, the University commits itself, and expects all its members, to exemplify and uphold these values and to reflect them not only in institutional and personal relationships, but also in all other aspects of University life, including work, sport, recreation, and cultural, intellectual, religious and other activities.

As a values-based community, we aspire to an encompassing ethos which

- promotes academic excellence and the attainment of the institutional goal of becoming a world-class African University;
- preserves what is valuable in the history of the institution and of this country, and responds to the challenges posed by past injustices and unfair discrimination;
- achieves social transformation, empowerment and participative governance;
- affirms and protects the fundamental human rights enshrined in the Constitution; and
- encourages the institution and all its members to accept responsibility for the welfare of the community and for behaving in accordance with these community values

VALUES

We commit ourselves to

- truth, fairness, consistency, and integrity in both academic and other work, and in all personal and institutional relationships;
- compassion, generosity and concern for the needs and aspirations of others, and in particular for the challenges faced by the less privileged in our society;
- respect and tolerance for cultural, religious, political, and other differences and acknowledgement of the value of diversity in society;
- respect for individual privacy, dignity, and the right to personal choice;
- intellectual honesty, rigour in debate, openness to alternative ideas and respect for other views, beliefs and opinions;
- commitment to high standards, personal fulfillment and the pursuit of excellence;
- the protection and responsible use of the University's assets and resources;
- concern for the personal safety, health and welfare of all members of the community; and
- the protection and conservation of the environment and our natural resources.

VALUES OF THE UNIVERSITY (continued)

ACTIONS

In the context of our recent history, we recognize the importance of affirming this ethos and promoting these shared values. Accordingly, we undertake collectively and individually

- to promote and protect academic freedom;
- to oppose and take steps to prevent racial, gender or other forms of unfair discrimination, harassment, violence or abuse;
- to actively promote social justice and equity;
- to nurture a culture of learning, which is supportive of students, scholars and teachers;
- to refrain from speech or conduct that demeans or humiliates others;
- to encourage our members to enjoy life; to laugh, to love, to appreciate and take full advantage of the wealth of opportunities available to us in academic endeavour, in making friends, and in social, cultural and sporting activity;
- to advance the principle of open governance and to be fully accountable for our actions, decisions, and the stewardship of the University's resources and mission; and
- to nurture and empower our members.

HISTORICAL SKETCH

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.

MISSION STATEMENT OF THE UNIVERSITY OF CAPE TOWN

UCT aspires to become a premier academic meeting point between South Africa, the rest of Africa and the world. Taking advantage of expanding global networks and our distinct vantage point in Africa, we are committed, through innovative research and scholarship, to grapple with the key issues of our natural and social worlds. We aim to produce graduates whose qualifications are internationally recognised and locally applicable, underpinned by values of engaged citizenship and social justice. UCT will promote diversity and transformation within our institution and beyond, including growing the next generation of academics.

Foundation statement underpinning the mission statement
Our research-led identity is shaped by a commitment to:

- academic freedom as the prerequisite to fostering intellectual debate and free injury;
- ensuring that research informs all our activities including teaching, learning and service to the community;
- advancing and disseminating knowledge that addresses the key challenges facing society – South African,
- continental and global;
- protecting "curiosity driven" research;
- nurturing and valuing creativity in the sciences and arts including the performing and creative arts;
- stimulating international linkages of researchers and research groupings.

We strive to provide a superior quality educational experience for undergraduate and postgraduate students through:

- providing an intellectually and socially stimulating environment;
- inspired and dedicated teaching and learning;
- exposure to the excitement of creating new knowledge;
- stimulating the love of life-long learning;
- the cultivation of competencies for global citizenship;
- supporting programmes that stimulate the social consciousness of students;
- offering access to courses outside the conventional curricula;
- attracting a culturally and internationally diverse community of scholars;
- guaranteeing internationally competitive qualifications;
- offering a rich array of social, cultural, sporting and leadership opportunities;
- providing an enabling physical and operational environment.

In advancing UCT as an Afropolitan university, we will:

- expand our expertise on Africa and offer it to the world;
- extend our networks on the continent, along with our global connections and partnerships;
- promote student and staff exchanges and collaborative research and postgraduate programmes;
- engage critically with Africa's intellectuals and world views in teaching and research;
- contribute to strengthening higher education on our continent.

We strive to provide an environment for our diverse student and staff community that:

- promotes a more equitable and non-racial society;
- supports redress in regard to past injustices;
- is affirming and inclusive of all staff and students and promotes diversity in demographics, skills and backgrounds;
- offers individual development opportunities to all staff;
- is welcoming as a meeting space for scholars from Africa and around the world.

THE UNIVERSITY OF CAPE TOWN DONOR ROLL

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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Note:
As of January 2015, the levels of individual donors' giving circles have changed as follows:

- Chancellor's circle: formerly R250 000+, now R500 000+;
- 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.

Please note that these changes only affect donations received after 1 January 2015. All donors who were members of particular circles prior to January 2015, will continue to be recognised in their original circles, until the rolling five-year giving period has elapsed.

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.

A full list of UCT donors is also available at www.uct.ac.za/dad/giving/donor_recognition.

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Daniel Petrus Visser, B Juris LLB LLD *Pretoria* Dr Iuris *Leiden* LLD(hc) *Edinburgh* Advocate of the High Court, Fellow of the University of Cape Town

Deans of Faculties

Commerce:	Ingrid Denise Woolard, BSc *Natal* BA(Hons) *Unisa* PhD *Cape Town*
Engineering & the Built Environment:	Alison Emslie Lewis, PrEng BSc(Eng)Chem MSc(Eng) PhD *Cape Town* FSAIChE FSAIMM MASSAf FSAAE
Health Sciences:	Bongani Mawethu Mayosi, BMedSc MBChB *UKZN* DPhil *Oxon* FCP *SA* FRCP *London* FESC FACC MASSAf OMS
Humanities:	Sakhela Maxwell Buhlungu, BA *Transkei* BA(Hons) *Cape Town* MA PhD *Witwatersrand*
Law:	Penelope Elizabeth Andrews, BA LLB *Natal* LLM *Columbia*
Science:	Anton Powter le Roex, BSc *Stell* BSc(Hons) PhD *Cape Town*

Dean of Higher Education Development
Suellen Butler Shay, BA *Lincoln* MA *Illinois* PhD *Cape Town*

Director of the Graduate School of Business
Geoffrey Norman Charles Bick, BSc(Eng)Elec *Cape Town* BCom *UNISA* MBA *Berkeley* D Phil *UJ* CM (SA) (Acting)

Registrar
Royston Nathan Pillay, BA HDE BEd Executive MBA *Cape Town*

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.

Updates can be done on the web – http://www.uct.ac.za/dad/alumni/update/
- or by writing to the Alumni Office, UCT, PB X3 Rondebosch 7701
or by contacting us on (27) (21) 650 3746.

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!