GRADUATION CEREMONIES

DECEMBER 2017

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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.

FACULTY OF COMMERCE

ORDER OF PROCEEDINGS

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

The Presiding Officer will constitute the congregation.

The National Anthem.

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

Musical Item.

Welcome by the Master of Ceremonies.

The Master of Ceremonies will introduce the guest speaker, Professor Leon Fine.

Address by Professor Fine.

The graduands and diplomates will be presented to the Presiding Officer by the Dean of the Faculty.

The Presiding Officer will congratulate the new graduates and diplomates.

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

The Presiding Officer will dissolve the congregation.

The procession, including the new graduates and diplomates, will leave the hall. (*The congregation is requested to remain standing until the procession has left the hall.*)

NAMES OF GRADUANDS

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

FACULTY OF COMMERCE

Dean: Professor I Woolard

ADVANCED DIPLOMA IN BUSINESS PROJECT MANAGEMENT

*Ihsaan Adams *Wilhelmina Vulikeni Aindongo Francois William Arendse *Ndeshipanda Magano Ashipala Wayne Phillip Barends Xoliswa Siphokazi Bekiswa *Hansley Bikhari Hendrik Johannes Blignaut Christopher Bothma *Gregg Phelps Butcher *Michael Laurie Cassel *Patricia Chidembo Nokthula Chilengue Memory Bwalya Chirwa Alice Melanie Cudworth Tarin Lee Cupido Sean Marcel Davids Phillip Cyle Austen De Jager *Marius De Lange *Fatiema De Long Daniel Benjamin Denysschen *Phumlani Sikhumbuzo Dlomo *Siyanda Dube *Lindie Du Plessis Graeme David Galloway Viveshnee Ganas Naasief Ganief Harley Dean Gibson Janet Karen Gordon Stojan Gorgiev Dharamlingam Ruthensamy Govender Yegendran Ricky Govender *Erman Grobler *Elde Groenewald *Aavishkar Gungaram Zenelda Hall *Amon Haufiku Edwig Hauwanga *Kerwin Gareth Hendricks Badyn William Holesgrove Inayath Hoosen

*Linekela Jason

*Walimohamed Altaf Jiwa Hazel Kudakwashe Kahari *Sharmal Bupendra Kalyan Elvin Mashanda Kamana *Paulus Muwambu Akhimi Kankara *Philip Dietmar Keil *Juan Keyser *Penelope Ann Kinsman *Martin Eric Krige Fredrick Musaemura Kushata Charles Kaimba Kuyayama Dylan Lavery *Pheello Lekuba Khutso Malesela Phillip Leso *Gregory John Livingston *Kalila Helen Mackenzie *Sibusisiwe Maduneni Adesh Maharai Sohana Maharaj Golden Maiwanga Molatelo Paulinah Malebana Jasmin Ehrel Maletzky Lonwabo Malghas Dinyalo Elias Mampane Thomas Mangolele Jenna-Lee Marco Gwendoline Phetsia Masemola Onkgopotse Loncey Mashigo Mancha Samson Mashilo Respect Jeffrey Mathata Nyameka Gladys Mathiso Thanduxolo Buntu Matshaya Barnard Buzwani Mbaiwa *Arthur Wayne Mc Duling *Shandukani Charlotte Mikosi *Strength Mkonto Zacharia Dinoko Moalahi Jeremiah Mohlakoana Thato Molefi *Banza Adriel Mukeba Pregan Naidoo Stefanus David Naude *Janet Munsaka Ndebele *Samukelisiwe Lucia Ndlovu *Ryno Nel Vuyokazi Innocentia Ngcaku *Konan Dorgeless Nguessan *Deon Ambrose Niekerk *Pieter Jakobus Nieman *Bosede Bisola Nkana Leeza November *Sergio Nunes Lara-Lee Palmer *George Albert Peake Xola Pono *Rowan Ritchie Poole *Thandeka Ignitia Radebe

Tadimo Wiseman Ramaipato Lydia Ndapewameme Nahenda Ramphoma Jason Luke Rieper Mark Robertson *Rufaro Clementine Ruredzo *Leandi Sadie Nhlakanipho Sandile Shange Nozuko Sidali *Neil Andrew Stallard Karen Marais Steenkamp *Christoffel Jasper Stoman Nobuntu Victoria Tintelo Mamakoa Tebogo Tloubatla Dylan Godfrey Townsend *Constantine Vagionakis *Riaan Francis Van Jaarsveld *Brian Arthur Van Zyl *Naaziya Vawda *Gideon Josua Venter *Leon Verheem Sven Von Wildenrath

POSTGRADUATE DIPLOMA IN MANAGEMENT PRACTICE

Kariemah Allie Akhona Octavia Bambata Roger Barendse Jaques Shane Booysen *Owen Merrill Britz-Van Ryneveld Andrei Marthinus Broodryk Andre Coetzee Nerissa Ann David (with distinction) Marika Dreyer (with distinction) Olga Nthabiseng Vuyokazi Fundakubi Samukelisiwe Hlengwa Anton Hougaard Selma Nakashupi Kamati *Christine Lara (with distinction) Josh Lindenberg (with distinction) Jamie Oscar Louw (with distinction) *Laurisa Louw Lulamile Bantubonke Oswald Magqashela Ingrid Sibusisiwe Mangcu (with distinction) Sandile Sydney Masengemu Malekhetho Alphoncina Matsoele Ronnie Mbatsane Michael Joseph Mcneill Daniel Meyer (with distinction) Mveleli Chris Mgogi Rachel Namata Misika Rajendran Moodley Sanet Moore (with distinction) Sizakele Phumzile Mtshali

Mziyanda Mxatule *Boitumelo Nare Povendren Navagar (with distinction) Desmond Nell (with distinction) Sonjia Daphne Nelson Alfred Makhosini Nkosi *Jacob Hendrik Opperman (with distinction) Anneline Abel Pillay (with distinction) Gavin Pillay Preshan Rambridge Rikasha Ramburan (with distinction) Shalen Reddy (with distinction) Marilese Juanita Scheepers-Stoffels Johanah Sesi Sekhosana Ravindra Singh (with distinction) *Nomusa Zibuyile Sithole Adela Bernadette Stone Willem Hendrik Van Wyk *Jean-Paul Watson

POSTGRADUATE DIPLOMA IN MANAGEMENT

In Business Systems & Analysis: Blessing Chibharo (with distinction) Lyle Aurin Collop *Yonela Pauline Dyonase Lesley Kim Johnstone Zimkitha Wendy Makhetha Thembakazi Sive Siko Ntombobabalo Zinzo

In Computer Forensics: Koatjo Simon Pule *Ajith Sookdeo

In Human Resource Management: *H R H Princess Mosley Ntombifikile Zungu

In Information Systems: Lupfumo Badaga Aneez Ebrahim Felicity Feziwe Mhlongo Bongani Given Quwe

In Purchasing and Materials Management: *Norah Loveness Ngorima

POSTGRADUATE DIPLOMA IN MANAGEMENT IN ENTREPRENEURSHIP

*Matthew David Brakspear Musa Sigcine Madala Khumo Abednego Tsebe

POSTGRADUATE DIPLOMA IN MANAGEMENT IN MARKETING

Veronica Theresa Adriaanse *Zade Deen Bester *Bronson Coverly *Kuei-Mao Huang *Elmada Kemp Camilla Kotze Manga Nawa Shane Robert Opie Haja Randrianarisoa

POSTGRADUATE DIPLOMA IN MANAGEMENT IN SPORT MANAGEMENT

*Marta Andreoli Joel Wayne Carew

POSTGRADUATE DIPLOMA IN PUBLIC SECTOR ACCOUNTING

Zukisani Mpisi

DEGREE OF BACHELOR OF BUSINESS SCIENCE

In Management Studies: Tyrone Lee Stephen

DEGREE OF BACHELOR OF COMMERCE

Tashriq Ahmed Amien *Ncumisa Sisikelelo Bam Louise Bestbier Tyler Jurgen Bodmann *Ryan Jordan Charnley *Lynn-Lee Maree Collins Zixolise Dalasile *Rene Juliana Dass *Ashin Dava Sinoxolo Davimani Tsholofelo Amy Ditlhobolo Uzair Essack Sive Fikelepi Irshaad Alawooddin Firfiray *Ziano Fredericks Viwe Enkosi Gqiba Balungile Octavia Gwente Andrew George Hendricks Brett Michael Jacobs Ageelah Johaar Angelo Diego Kloppers

*Luke Richard Kuhn Anwani Ligunuba Siphesihle Maxwell Collin Magudulela Mageledwane Nancy Mahlo *Batsile Maseng Desire Matabane Luca Antonio Miceli Noluthando Penellope Mngwengwe *Julia Rorisang Moeketsi Mmamokgopane Ntando Mokua *Desigan Moodley Nhlakanipho Thobeka Mshengu Zanele Mthuze Farai Blessed Mukamura Sherwin Naidoo Unamaanda Kenneth Nndwammbi Tracy Norman Tuskan Owen-Thomas *Rohan Pretorius Tshogofatso Putu Olefile Bernet Sedumedi *Denise Tanisha Stubbs Cameron Robert White *Ryan Andrew Wilson

In Actuarial Science: *Marco Lino Lucio De Sousa Sithandiwe Samantha Dube Gugulethu Mary-Anne Ngwenya

DEGREE OF BACHELOR OF COMMERCE (HONOURS)

In Economics: Emily Agnes Asbury Msinje Imelda Banda Victoria Sibusisiwe N Basopo Thabiso Michael Beau Sandulela Asanda Biyana Jade Carla Buckton *Cecily Claassen Isabella De Gouveia Pinto Bonita Georgina Dominion *Timothy Patrick Dommett Nicole Hannah Dunn (first class) *Timothy Milton Evans (first class) Matthew Nicholas Granelli Balungile Octavia Gwente Seamus Byron John Hennessy Mornee Marvin Hoffman *Megan Paige Hudson Shazeaa Hytoolakhan Lal Mahomed Carla Nicole Kirk-Cohen (first class) Namhla Landani Kris Lemon (first class) *Anniken Von Der Lippe Dominic James Peter Long-Innes (first class) Mmabyala Francina Malete

Tanaka Casper Mombeshora Shaunagh Rae Maxine Moodie *Vahiel Moodley Simeme Bohlokwa Sakhelwe Mthembu Siyanda Bulelwa Mzimane Kurtney Naidoo Talia Naidoo *Natasha Nelson Tlotlo Pauline Nkwe Emma Gates Pottinger (first class) Princess Refilwe Puskas *Benedict Vincent Rhodes *Shaun Colin Riley Jesse Rhys Rinquest Sameenah Roomaney Jade Ross Rossouw Chimwemwe Micheal Silutongwe Julia Ann Tatham *Gemma Louise Tennick (first class) *Susanna Yang In Financial Analysis & Portfolio Management: *Hein Maré Badenhorst Benedict James Hutchinson Baigrie *Medjo Bindzi Jesse Elizabeth Carollisen (first class) *Garikai Stan Chigwedere *Fredrick Kunda Chola Cameron Wavne Crawford *James Mathew Day *Nyiko Theo De Beer *Jacob Coenraad De Klerk Chiedzachashe Nicole Dzinotyiwei Amarildo Epalanga Anastasia Heidie Erasmus Thomas Michael Harms *Nicolas James Hellens Steven Albert Hodge Luna Jevremovic Simbarashe Mangwiro *Mukuka Malambo Mapemba Patsy Marwa Kefentse Mamello Matooane Nicola Louise Mills *Reabetswe Peggy Modikwe *Tshwarelo Mohlala *Khamuka Tswelopelo Moloi *Steffanie Louise Moreira Rumbidzai Mujuru *Dean Kenneth Murray Susan Rutendo Muwandi Bridgette Ncube *Nhlakanipho Gift Nyide Akshay Patel Lisa Paterson *Girish Peerthy *Emilio Peretti *Bradwin Petersen

*Michael John Spaans Matthew James Van Den Aardweg In Information Systems: *Bruno Alexandre Alves *Graeme Ampeire Lorian Victoria Barrett (first class) Lester Quinton Basson Rafael Berezowski Kurt Wavne Brevis Trevor Magambe Byaruhanga Randall Stanley Carr *Cuthbert Christian Chidoori Wesley Paul Cieverts Shannon Richard Cole *Ricky Shaun Conn *Shahrain Coovadia Kim Deidre Cupido Tania Juanita Davids Thokozani Fortune Dlamini *Lourena Mariana Do Rosario Kaasiefa Gasant Lara Goldin *Willem Jacobus Griebenouw Dhriven Hamlall Michelle Lee Huggins Trevor David Joubert (first class) *Kevin Kamande Juanitha Jenny Kauejao Derrick Rodger Kladie Ashley Koopman Ultrich Kruger *Mc Guigan Frank Lakay Neto Maape *Sduduzo Lunga Mgwaba Zikhona Shallort Mkoko Mubasshier Mohamed Mandlakazi Ndlela Geoffrey Owen Odonoghue Muhammad Raaziq Parker Shuaib Ahmed Parker Shawn Neal Redmond Zaakirah Roomaney Jasmine Scott Stuart Peter Scott Yazeed Ibrahim Seedat Koliwe Sidloyi *Mannis Stenvert *Mark Tew (first class) *Elna Van Rooyen Richard Scott Walker (first class)

*Kilian Petika Schabort (first class)

In Organisational Psychology: *Laureen Rwatirera

In Taxation: *Karnisia Anesu Rusike

DEGREE OF MASTER OF BUSINESS ADMINISTRATION

In Executive Management: Claude Donald Harvey

DEGREE OF MASTER OF BUSINESS SCIENCE

In Marketing: Muhammed Ziyaad Desai Simone Candace Starkey

DEGREE OF MASTER OF COMMERCE

In Actuarial Science: *Ra'ees Mahmood

In Development Finance: Rayner Fabian Canning *Fadzai Emmah Chitiyo (with distinction in the dissertation) Darlington Tapfumaneyi Dhanah *Sem Dietrich Hasheela (with distinction in the dissertation) Chanda Mulenga Kambobe (with distinction in the dissertation) Chozi Dickens Lungu *Zanele Malumba (with distinction) Jeffrey Themba Mathaba Percy Mathebula Lulama Mboji *Florence Dorothy Mndolwa (with distinction in the dissertation and the degree with distinction) *Mayase Chituwa Simone M'Shanga Yvonne Mutopo Andrew Munsaka Muyaba (with distinction in the dissertation) Ndala Joseph Mwase (with distinction in the dissertation) Tendai Ndemera (with distinction in the dissertation and the degree with distinction) *Simphiwe Emmanuel Ndlovu Simon Tangi Nghipangwa Thabiso Nkosi Londa Selloane Nxumalo (with distinction) *Olawale Olutayo Oyebanjo (with distinction in the dissertation and the degree with distinction) Lebohang Las Leboya Pule Ireen Nunsa Samate *Admire Tongowona (with distinction in the dissertation) *Abiel Tudane Sandiswa Masande Ziphethe-Makola (with distinction)

In Economics:

Biren Amtha (with distinction in the dissertation) *Michael Oded Levin (with distinction)

In Financial Management: Bonga Maliwa Ebrahim Sadien

In Human Resource Management: Janet Helene Tooke

In Information Systems: Tiaan De Jager Nomusa Nomhle Dlamini Zwelithini Mabhena Unathi Viwe Mbekela Nokubonga Msibi Rutendo Moreblessings Mushore (with distinction in the dissertation) Kedibone Charlotte Namane Henry Olatunde Oladimeji (with distinction in the dissertation) Joseph Abiodun Omidosu

In Management Practice: Emily Njeri Mburu

In South African Taxation: Arlene Joseph

DEGREE OF MASTER OF PHILOSOPHY

In Actuarial Science: Ronald David Richman (with distinction)

In Demography: Chido Chinogurei

In Development Policy and Practice: *Hunguka Herbital Maluleke

In Inclusive Innovation: Stephanie de Villiers Anne-Marie Hanna

*Tsakane Magdeline Lesea

*Yael Marantz Yusuf Parak Orly Keit Setton (with distinction)

In Mathematical Finance:

*Rowan Michael Dalton (with distinction in the dissertation and the degree with distinction) Tinashe Alison Dube *Zavier Alexander Haddad Nicole Holder (with distinction in the dissertation and the degree with distinction) Vuyo Takalani Makhuvha *Alexander Nicholas Platts Kwaku Quinton Rwexana Shivan Sookdeo *Dirk Van Heeswijk

In People Management: Aniekah Gamiet Berenize Bianca Titus

In Programme Evaluation: *Petronella Susanna Fourie

DEGREE OF DOCTOR OF PHILOSOPHY

In Actuarial Science: Michael Kateregga Thesis Title: Stable processes: theory and applications in finance

Michael Kateregga holds a BSc in Mathematics from Mbarara University of Science and Technology, Uganda, a Postgraduate Diploma in Mathematical Sciences from the African Institute for Mathematical Sciences, South Africa, and an MSc in Mathematical Finance from Stellenbosch University. Michael joined UCT to pursue his PhD studies in 2013.

Michael Kateregga's thesis explores the theory of alpha-stable distributions, revealing new applications for understanding financial markets. Using real-life data, he discusses three broad market-related problems, including parameter estimation, asset pricing, and risk management. His major findings include, firstly, a precise characteristic function method for estimating parameters of alpha-stable processes that is more accurate than the maximum likelihood method commonly used in the literature. Secondly, he constructs a new pricing approach for commodity futures that is reducible to an easy-to-calibrate latent regression model usually applied in understanding population dynamics. Finally, under a novel framework, Michael Kateregga investigates the sensitivity of prices of complex market instruments, particularly options, demonstrating their behaviour with respect to various

underlying market parameters. Some of this research has been published, and it is relevant to academics and practitioners interested in financial markets.

Supervisor: Dr S Mataramvura (Actuarial Science) Co-supervisor: A/Professor DR Taylor (Actuarial Science)

In Business Administration: Puleng Makhoalibe Thesis Title: Towards design principles for project artistry in exploratory sandpit projects: a design-based research perspective

Puleng Makhoalibe completed her BSc in Computer Science and Statistics at the National University of Lesotho, and obtained a Postgraduate Certificate in Management from MANCOSA, and an MBA from UCT. She worked in the corporate, government and higher education sectors, and began part-time study towards her PhD in 2011.

Puleng Makhoalibe's thesis explores principles drawn from design thinking and creative problem solving that could be applied in the management of exploratory sandpit projects. The outcome of the study is a project artistry framework, which was tested in two real-world iterations in the innovative education space using design-based research. The framework's value proposition is that it is proven to enable diverse teams to shift the participants' orientation from significant ambiguity and uncertainty to the ability to plan action by co-creating project visions with clear objectives and goals. The framework fosters collaboration, co-creation, and creativity, that lead to novelty and contextually relevant solutions to persisting problems.

Supervisor: Professor K Sewchurran (Graduate School of Business) Co-supervisor: A/Professor D Ng'ambi (Education)

Michael Mugabira

Thesis Title: Value chain competitiveness analysis: entrepreneurial behavioural practices determining business success in Uganda's commercial sugar and forestry industries

Michael Mugabira holds a BSc in Industrial Chemistry from Makerere University, a Postgraduate Diploma and a Master's in Management from the Uganda Management Institute. He worked with the Ugandan Government and Investment Authority, and has been at UCT since 2010.

Michael Mugabira's thesis researches entrepreneurial behavioural practices that influence business success. He investigates how the policy and regulatory business environment affects the productivity and competitiveness of firms in Uganda's agri-business value chains, and the distribution of wealth in the country. The study finds that monopolistic policies which favour established sugar factories enrich the few and give rise to wealth inequality, with little transfer of knowledge, skills or appropriate technology to farmers. This skewed wealth distribution contributes to low productivity on local farms, which is low by regional and international standards. Michael Mugabira's findings were used to inform the crafting of the Uganda Draft Sugar Bill 2016 recently presented before Parliament. His research has thus made a contribution to the policy environment in Uganda.

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

Zal Phiroz

Thesis Title: *Hierarchical decisionmaking patterns for the placement of physical supply chain entities*

Zal Phiroz holds a BCS and BSc(Hons) from the University of Windsor, and an MBA from Wayne State University. His doctoral work emerged from his prior exposure to Supply Chain Management, and his academic experience in teaching at Harvard University and the University of Southern California.

Zal Phiroz's thesis attempts to quantify and measure location

supply considerations in chain management and develop and define a decision-making hierarchy for the placement of physical supply chain entities. Optimisation of supply chains has long been accepted as a vehicle for competitive advantage in commerce, with substantial prior research focusing on the evaluation of a conceptual framework and its application to industry. Zal Phiroz extends this framework by evaluating the causes of placement decisions statistical analysis of primary quantitative and qualitative data. The result is a pattern of prescriptive traits leading to specific interpretations and perceptions, suggesting a synthesised decision making culture and hierarchy. Empirical evidence offers an extension of accepted definitions of supply chain management, and provides insights into non-traditional methods of extracting competitive advantage within a supply chain.

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

In Economics: Francis Leni Anguyo Thesis Title: *Monetary policy in low income countries: the case of Uganda*

Francis Anguyo holds a first-class honours BA degree in Economics from Makerere University, Uganda and an MSc degree in Economics from the University of North Texas (USA). He worked at the Bank of Uganda before joining the School of Economics at UCT in 2014 for his PhD studies.

Francis Anguyo's thesis addresses interrelated issues that influence the implementation of monetary policy in Uganda. These include the role of inflation persistence, financial frictions, and the potential impact of regime changes and large shocks. The findings suggest that inflation persistence has become more entrenched, and the study proposes that the central bank consider using an alternative measure of core inflation. His small open-economy dynamic stochastic general equilibrium (DSGE) model that utilises Bayesian techniques for parameter estimation suggests that the Ugandan central bank currently responds to financial market developments. His investigation also suggests policymakers should respond slightly more aggressively to macroeconomic developments. A Markov-switching DSGE model is used to consider the possible effects of regimeswitching behaviour and the impact of large shocks. The results suggest that the central bank's reaction function has not remained constant over time, and that these models should be used for forecasting purposes.

Supervisor: Dr K Kotze (Economics) *Co-supervisor:* Professor R Gupta (Economics, University of Pretoria)

Arden Jeremy Finn

Thesis Title: *Economic mobility in South Africa: evidence from household survey data*

Arden Finn holds BSocSc and BCom(Hons) degrees from UCT, and an MSc from the University of Oxford. After spending several years working at the Southern Africa Labour and Development Research Unit (SALDRU), he began his PhD studies in 2013.

Arden Finn's thesis focuses on economic mobility in South Africa. He uses four waves of longitudinal data from the National Income Dynamics Study which tracks 28,000 South Africans and has been running since 2008, with the latest wave in 2014-2015. He begins by suggesting a method to detect the presence of fabricated survey data, and then goes on to investigate how the presence of such data may impact our understanding of economic mobility. He then uses these data to investigate how and why South Africans are leaving, entering or remaining in poverty. Finally, he extends his analysis to an intergenerational setting, and uncovers the importance of educational attainment in driving earnings persistence from parents to children at the bottom and top of the wage distribution.

Supervisor: Professor M Leibbrandt (Economics) Co-supervisor: Professor V Ranchhod (Economics) Mary Muthoni Karumba Thesis Title: Socio-economic analysis of community based micro-hydro schemes in Kenya

Mary Karumba holds BA and MA degrees in Economics from Kenyatta University, Kenya. She works as an Economist in the Economic Planning Department of the Government of Kenya.

Mary Karumba's thesis addresses three socio-economic successful microimpediments to hydroelectricity projects in Kenya. Using data collected from households who jointly own nine micro hydroelectricity schemes, she investigates the service quality such schemes provide. She finds that consumers prefer community ownership of the schemes, and grid-like electricity. She investigates the role of institutional and other arrangements in the sustainability of these schemes, which benefit from having highly cooperative members, more users, and better quality institutions. Lastly, she conducts an impact evaluation of electrification. She finds that micro-hydroelectricity reduces kerosene consumption, and lowers hours of evening studies by children and mobile phone battery recharging expenditure per month. The study recommendations for implementing and sustaining a renewable source of electricity, while demonstrating why such schemes now form an essential component of rural electrification delivery models.

Supervisor: Professor E Muchapondwa (Economics)

Rethabile Francis Masenyetse Thesis Title: *Firm growth, survival and productivity in South Africa*

Rethabile Masenyetse has a BA and MSc in Economics from the National University of Lesotho. He is an economist at the Central Bank of Lesotho. He enrolled in the PhD programme in the School of Economics at UCT in 2011.

Rethabile Masenyetse's thesis studies the relationship between firm growth, survival, and productivity in South Africa. He uses data collected on companies listed on the Johannesburg Stock Exchange (JSE) from 2000 to 2010. The objectives of the study are achieved, firstly, through analysing the changing firm size distribution and concentration rates, and reasons for non-survival. Secondly, he examines factors that drive firm survival. Finally, he assesses the influence of finance on firm productivity. The results indicate that the industrial structure in SA is fairly healthy, with smaller firms growing faster than large ones. Survival rates are low among smaller firms. Besides firm size, financial development is found to be important for firm survival. There is also a strong influence of financial development on total factor productivity, suggesting the existence of an effective productivity channel.

Supervisor: Professor J P Dunne (Economics) Co-supervisor: Professor A Black (Economics)

Onkokame Mothobi Thesis Title: *Essays on telecommunications demand and regulatory policies*

Onkokame Mothobi holds a bachelor's in Economics and Statistics, and a master's degree in Economics from the University of Botswana. His doctoral research emerged from an interest developed during his studies at UCT.

Onkokame Mothobi's thesis uses demand models to provide empirical evidence of the implications of demand and competition in the mobile telecommunication industry. His work shows that mobile phones benefit people by improving access to financial services. The thesis further demonstrates that mobile number portability - allowing mobile phone subscribers to keep their numbers when changing operators, increases price elasticities, but does not have any effect on mobile retail prices. Onkokame Mothobi's findings dispute the conventional 'waterbed effects' theory that a regulation which pushes down wholesale prices (termination rates) earned by providers causes them to increase retail prices charged to phone users. Instead it supports a glide path termination rate policy, which requires mobile operators to reduce termination rates over time.

Supervisor: Professor L Grzybowski (Economics) Co-supervisor: Professor A Black (Economics) Boscow Odhiambo Okumu Thesis Title: *Economic analysis of participatory forest management in Kenya*

Boscow Okumu has a BSc in Applied Statistics from Maseno University, and an MA in Economics from the University of Nairobi in Kenya. He works as an economist for the Department of State for Planning and Statistics in the Government of Kenya.

Boscow Okumu's thesis contributes to an understanding successful participatory of forest management implementation, and its implications for more inclusive, equitable and sustainable forestry in Kenya. He assesses the value of forest ecosystem services for local communities, and how the preferences of those communities inform incentive design mechanisms when forest management is devolved to them. He examines the impact of existing participatory forest management incentives on biodiversity and on the welfare of communities adjacent to forests. Finally, he investigates the role of institutional arrangements in achieving sustainable participatory forest management. The thesis highlights the need for policy-makers to understand local communities' attitudes, values, and preferences, before deciding how to devolve forest management. It also stresses the importance of equity in the access and management of forest resources to ensure their sustainability, and the need for a more robust diagnostic approach in the devolution of forest management.

Supervisor: Professor E Muchapondwa (Economics)

Jose Antonio Pedrosa Garcia Thesis Title: *Essays on the economics of foreign aid in Niger*

Jose Pedrosa Garcia holds a Licenciatura in Business Administration from Universidad de Valencia, an MA in International Business from Institut Supérieur du Commerce, and an MA in Economics from Yale University. His doctoral research was motivated by his work with the United Nations in Niger.

Jose Pedrosa Garcia's thesis aims to enrich the debate on aid effectiveness in Niger. The existence of and reasons for moral hazard are analysed through a case study of the country and the International Monetary Fund (IMF). Niger's requests for assistance are accompanied by promises to undertake reforms. However, once aid is disbursed, these undertakings rarely materialize. Despite this record, IMF aid continues. This engenders perverse incentives and moral hazard. His thesis also analyses whether foreign aid is associated with poverty reduction. He finds that changes in poverty levels of aid-recipient households do not differ significantly from those of households receiving no assistance. He also shows that households benefiting from aid under-performed those who benefited from other types of projects. Lastly, his study shows that households do derive utility from the public goods delivered by aid, but that other development projects are more useful than those delivered only through aid.

Supervisor: A/Professor A Leiman (Economics) Co-supervisor: A/Professor M Sarr (Economics)

Joanna Norah Ryan Thesis Title: *Examining land reform in South Africa: evidence from survey data*

Joanna Ryan has a BSocSci (PPE), two honour's degrees (FAPM and Economics), and an MCom (Economics) from UCT. Her doctorate resulted from her work in the Southern Africa Labour and Development Research Unit (SALDRU).

Joanna Ryan's thesis contributes to the land reform debate in South Africa by providing much-needed quantitative evidence on the household welfare, food security, and social justice outcomes of the land reform policy. Her work includes the development of a new multidimensional food insecurity index. This index is used to develop a detailed profile of household food insecurity in South Africa and to examine the food security impacts of land receipt. An innovative behavioural experiment explores the limits to the broader notions of fairness and social preferences for redistribution. While the welfare outcomes of land redistribution are not encouraging, strong preferences for redistribution and fairness are observed, which highlights the social justice potential of land restitution. The dual functions of land should not be conflated: While land may be a valuable tool for the redress of historical wrongs, it is not necessarily an effective means to improving household welfare.

Supervisor: Professor M Leibbrandt (Economics) Co-Supervisor: A/Professor P Piraino (Economics)

Fredrick Masinde Wamalwa Thesis Title: Formation of children's human capital in Kenya: the role of teachers, private schools and the family

Fredrick Masinde Wamalwa holds a BA in Education (with Economics majors) and an MA in Economics from University of Nairobi (Kenya). He worked as an Economist at the World Bank before enrolling in the AERC Collaborative PhD programme in 2013.

Fredrick Wamalwa's thesis addresses human capital formation amongst children in Kenya. He examines the influence of teachers on language and mathematics learning of grade 4 students. He finds that learning is driven by teachers' subject and pedagogic knowledge, and teachers' time spent and practices in class. He investigates the effect of private school attendance on basic literacy and numeracy of lower primary learners in Kenva. Applying econometric techniques, he finds significant positive effects of private schools on learning. Lastly, he explores the effect of gender and birth order on intra-household investments in, and educational outcomes of, children in Kenya. Female siblings are found to be likely to complete more years of education and to progress through school faster. First-borns are shown to be more likely to be enrolled in private schools, complete more years of education, and progress faster through school.

Supervisor: Professor J Burns (Economics)

In Finance:

Eric Nzibonera Thesis Title: *Efficacy of corporate* governance on corporate disclosure in developing economies: a comparative study of companies listed on selected stock markets in Sub Saharan Africa

Eric Nzibonera has a BCom (Accounting) and an MSC (Accounting & Finance) from Makerere University, Kampala. His doctoral work emerged from his teaching and research experience in the Department of Accounting and Finance at Makerere University, where he has been a member of the academic staff since 2007.

Eric Nzibonera's thesis develops a corporate governance model to enhance the disclosure of information by listed companies in developing economies. Corporate disclosure provides information required by shareholders to make investment decisions, and ultimately boosts economic growth and development. His study uses agency theory to approach the resolution of conflict and information asymmetries between corporate managers and shareholders. The study focuses on listed companies in selected stock markets in Sub-Saharan Africa. It examines the influence of specific corporate governance attributes applicable to the disclosure of financial, governance and corporate social responsibility information in developing economies. It provides empirical evidence specific corporate governance on attributes required to develop a model for strengthening the governance systems of listed companies. Finally, it shows how these attributes significantly influence the disclosure of corporate information in these economies.

Supervisor: Professor E Uliana (Finance and Tax) Co-supervisor: Dr G Akileng (Makerere University)

In Information Systems: Kasky Bacishoga Bisimwa Thesis Title: Mobile phone use for empowerment in the context of social exclusion: an ethnographic study of urban refugees in South Africa

Kasky Bisimwa is a refugee from the Democratic Republic of Congo currently

living in South Africa. He holds an MCom in Information Systems from UCT, and began full-time study towards his PhD in 2011.

Kasky Bisimwa's thesis uses a critical ethnographic method to investigate whether the use of mobile phones by refugees in South Africa creates opportunities for their empowerment. He finds that mobile phone use enables urban refugees to participate in the information society, and to engage with wider networks, and gives them the capability to manage their challenges. He finds, however, that these opportunities are contingent on power relations between social structures and individual agency. He proposes a dynamic framework for theorising and explaining the mechanisms that shape mobile phone use and the possibilities it provides for empowerment. The findings could contribute to policy formulation by the government and organisations seeking to assist urban refugees, by facilitating intervention strategies.

Supervisor: Professor K Johnston (Information Systems) *Co-supervisor:* Professor I Brown (Information Systems)

Moegamat Zane Davids

Thesis Title: *The use of social media by organisations when engaging with their online community: the collective storytelling phenomenon*

Moegamat Davids holds a BSc and BCom(Hons) from the University of the Western Cape, South Africa. He graduated from UCT with an MCom in Information Systems in 2009, and in 2012 started his PhD studies. He works in the IT field.

Moegamat Davids' thesis investigates the use of social media by organisations to engage with their online community. The findings show that organisations enter a collective storytelling process with their online community. Risk to reputation and the need for online community engagement are identified as reasons for this. Challenges during the collective storytelling process lead to organisations experiencing social media use failures. To overcome these failures, organisations implement education interventions. An evolving, supportive

social media strategy that provides formal guidelines for social media use ultimately leads to a reduction in the risk to these organisations' reputations, and an improvement in online community engagement, identified as the reasons why organisations decide to use social media.

Supervisor: Professor I Brown (Information Systems)

Samuel Muhanguzi

Thesis Title: *The alignment of business* strategy, work practices, and mobile technology applications in Small and Medium Enterprises in Uganda

Samuel Muhanguzi holds a Bachelor's in Business Administration from Daystar University, an MBA from the University of Hartford, and an MSc from the University of Maryland. His PhD research is an attempt to assist Small and Medium sized Enterprises (SMEs) leverage mobile technology applications to improve work practices.

Samuel Muhanguzi's thesis examines how SMEs can align their business strategies, work practices, and mobile technology applications to improve their business performance. Samuel adopted a configurational approach (the Gestalts perspective) to identify combinations of factors that yield better business performance. He undertook a survey of 176 SMEs, which included interviews, cluster analysis and thematic analysis. The results revealed that highperforming SMEs optimise work practices by aligning basic mobile applications with strategies that improve customer services and productivity. The gestalts approach was useful in investigating the complex relationship between mobile technology, productivity, and customer service in the SME environment. The study makes a practical contribution by providing recommendations for the building of productive workplaces.

Supervisor: Professor M Kyobe (Information Systems)

Paul Wando Mungai Thesis Title: *Causal mechanisms that enable institutionalization of open government data in Kenya*

Paul Mungai holds a Bachelor of Business and Information Technologies (BBIT) degree from Strathmore University, and an MPhil in Information and Communication Technologies from UCT.

Paul Mungai's thesis investigates the mechanisms and forces that enable the institutionalisation, that is, the long-term entrenchment and sustainability, of Kenya's Open Data Initiative (KODI). KODI supports open government data which is aimed at making Kenya's government more transparent and accountable but also allow for data-driven innovation. He collected data through observation at open data events, interviews with stakeholders, and documentary materials from websites and policy documents, and used a comprehensive thematic analysis process. The findings are presented in the form of a case study, which describes past and present institutionalisation challenges. It also identifies the supporting mechanisms, describes how they manifest themselves, and explains their role and interconnectedness. KODI supporting mechanisms include policy and legislation, demand, awareness, buyin and ownership, advocacy, and planning, and coordination and capacity building. This study will assist policy-makers in establishing or enhancing existing support mechanisms.

Supervisor: Professor JP Van Belle (Information Systems)

FACULTY OF HEALTH SCIENCES

ORDER OF PROCEEDINGS

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

The Presiding Officer will constitute the congregation.

The National Anthem.

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

Musical Item.

Welcome by the Master of Ceremonies.

The Master of Ceremonies will introduce the guest speaker, Dr Judy Dlamini, Chairperson of Mbekani Investment Holdings Limited and Aspen Pharmacare Limited.

Address by Dr Dlamini.

The graduands and diplomats will be presented to the Presiding Officer by the Dean of the Faculty.

The Presiding Officer will congratulate the new graduates and diplomates.

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

The Presiding Officer will dissolve the congregation.

The procession, including the new graduates and diplomates, will leave the hall. (*The congregation is requested to remain standing until the procession has left the hall.*)

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. A dagger † denotes that the degree will be awarded posthumously.

FACULTY OF HEALTH SCIENCES

Dean: Professor B Mayosi

POSTGRADUATE DIPLOMA IN HEALTHCARE TECHNOLOGY MANAGEMENT

*Noluthando Khiya

POSTGRADUATE DIPLOMA IN HEALTH PROFESSIONAL EDUCATION

Fatima Peters

POSTGRADUATE DIPLOMA IN PALLIATIVE MEDICINE

*Michelle Patricia Flowers (with distinction)

POSTGRADUATE DIPLOMA IN PAEDIATRIC RADIOLOGY

*Luvo Gaxa

DEGREE OF BACHELOR OF SCIENCE IN AUDIOLOGY

Lamees Allie Danielle Blasl (with distinction) Kirsty Lee Campodonico Richard Matthew Clarke Simone Delo Tara Lee Fahrenfort Wildine Marion Greeff Chloé Megan Heunis Amy Hillier Senzo Jerry Hlophe Jastelle Elizador Hugo Shannon Justine Jepthas *Tayla Shannon Karsten Aisha Khan Talia Lifson Kayla Marsden Nomhle Mbele Nompilo Mkhize *Given Mphoentle Mmokwa *Bopane Godwin Mothemela Tanava Naidoo Lindiwe Ncube Claire Kirsten Potgieter Mercedes Seemann Lisa Jade Shand (with distinction) Sanelisiwe Sibanda Vuyokazi Sithole Lerato Santa Smata Camilla Grace Spracklen Nikki Tromp

DEGREE OF BACHELOR OF SCIENCE IN MEDICINE

Nokulunga Guliwe *Milisa Millicent Sokatsha

DEGREE OF BACHELOR OF SCIENCE IN OCCUPATIONAL THERAPY

Aamina Allie Tasneem Arend Heidi Elsa Berger (with distinction) Nicole Bernfield Pertunia Bopape Erica Ann Bourn Snothile Promise Buthelezi Nicola Miré Cilliers (with distinction) Yolande Mary Clothier Jennifer Mary Connock (with distinction) Kirsten De Reuck (with distinction) Sibahle Siphelele Dladla Amzolele Feyisi Naseema Gangat Zaheera Gangat Olwethu Gumede Khaohelo Nontsikelelo Hebe Dominique Marie Jamie Nomonde Irene Jumba Saneliso Kotobe Gerlinde Krux Jamie Le Roux May Katherine Pin Hsuan Li Simon Maboya Ngale Arnold Mahlaba Qaadirah Manuel

Maphefo Yvonne Masegare Kgopotso Maserumule Dimpho Karabo Mathibe Camagu Mayosi Carin Misrole Gugulethu Favourite Mlotshwa Tayla Leigh Mouton Mosima Tebatso Mphela Winnie Mutavhatsindi Sharon Felicity Nolwazi Ndukuva Nonkululeko Sibongiseni Nembula Sithembelenkosini Beauty Ngcobo Tinyiko Pela Pertunia Khomotso Rametse Yashmita Ramsundar Domonique Michelle Reagon Graham Arthur Roberths Sachan Tami Robinson (with distinction) Relebohile Prudence Shai Nobulali Alexia Shude Maxine Khumo Jade Sibanyoni Ashira Singh (with distinction) Angela Gcina Thabo Tahirah Timol Angela Violet Tucker Yanelisa Tunywa Stefanie Amanda Vieler (with distinction) Andrea Williams Chantal Daisy Wilmot Zizipho Xeketwana

DEGREE OF BACHELOR OF SCIENCE IN PHYSIOTHERAPY

Carryn-Rose Alexander *Raygaanah Alexander Stacey-Leigh Carryn Amsterdam Lauren Kim Angelil Jason Arendse Danielle Jaide Austin Cloudia Rose Barr Gillian Jennifer Bedwell (with distinction) Megan Elizabeth Bezuidenhout Smilo-Michael Bovula Thabile Precious Dladla Cebo Minenhle Dlamini Juliet Heather Mary Forsyth (with distinction) Tracey-Lee Gough Jessica Lee Hawkridge Anusch Hendricks Louise Magdalen Hichens (with distinction) Naa-Ilah Jacobs

Simphiwe Emanual Khanyile Chandra Kim Knowles Caron Lisa Louw Zimkhitha Lihle Luhlaza Mojabeng Confidence Majara Siposethu Makhaza *Thapelo Maxwell Malepe Ashley Tyla May Camilla Alice McGrath Nozinhle Patricia Mkhize Kgopotso Molamu Thobile Ngobile Ngcobo Nomaxabiso Emihle Nqwena Wezi Nyimba Kate Emma Pretorius Vhuhwavho Ramulwela Courtney Ravell Melissa Paige Rijs Samantha Kate Rule Megan Schapiro Caleb Lindsay Schultz Tyla-Jade Spike Chantalle Steenkamp Mishka Suliman Tylla Tyne Thomas Trish Ventura Kate Margaret Vlok (with distinction)

DEGREE OF BACHELOR OF SCIENCE IN SPEECH-LANGUAGE PATHOLOGY

Aqueelah Abdullah Waseema Abdullah Aqeelah Adams (with distinction) Jena Lea Ascough (with distinction) Zakeera Bholat Charlize Chapman Georgina Amy Chmielewski Kimara Christopher Amirah Daniels Jessica Carmen Dean (with distinction) Phetego Chrissen Dibakoane Caitlin Mary Fisher Herlaine Adrian Fynn *Amakhoe Catrin Jenkins Goabas Rita Goqwana Thaaniyah Gydien Tara Rose Hock *Cari Jean Klipp (with distinction) Phylicia La'el Laloo *Roxi Blu Laroque Raquel Sharon Le Roux (with distinction) Silindokuhle Penelope Mafuya Morwesi Gaopalelwe Mogatusi Nicole Claire Motani

Jordan Rae Nash (with distinction) Thiani Pillay Sheridan Leigh Pollet Sharné Rheeder Meghan Ann Roderick Michaela Anne Shurrie *Megan Wendula Taylor Camryn Claire Terblanche (with distinction) Ashleigh Claire van Eden Tayla Vanessa Viviers Cecile Kathleen Watkins Jessica Anne Williams Natasha Leigh Wood

DEGREE OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

Magali-Erika C. T Adjovi (with distinction in the clinical sciences) Nana Serwah Adofo-Ansung Mathew Dean Alexander Kurt Allie K.Jibran Allybokus Yusuf Ameen Litha Bakumeni Andrew Thomas Beeton (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Jessica Kate Beningfield (with distinction in the clinical sciences and the degree with first class honours) Richard Joseph Burman (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Mohamed Zaahid Cassim Tariqsha Nand Chanderbally (with distinction in the clinical sciences and the degree with honours) Nkateko Chauke Renuga Devi Chetty Robert George Cloete (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Tarryn Ann Collings (with distinction in the basic sciences and clinical sciences and the degree with first class honours) *Laylah Waradeya Da Costa Leighlind Jeandre Daniels Elise Andrea de Kock (with distinction in the clinical sciences and the degree with first class honours)

Marvin Samuel De Villiers Gugu Nokuthula Dhlomo (with distinction in the clinical sciences) Wesley Paul Du Plessis (with distinction in the clinical sciences and the degree with honours) Jeantelle Du Preez Lileko Chuma Echun Daniel James Stadler Egan Emma Maria Fagan Matthew Mark Fehrsen Lauren Sarah Fernandes Luke James Fletcher (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Naledi Lady Fodo Emily Ariane Fogel (with distinction in the clinical sciences) James Peter Francis Rabiah Ibnatoe- Ebrahim Gabriels Rachelle Ariele Gietzen Daniel James Gildenhuys (with distinction in the clinical sciences and the degree with honours) Michaela Joan Grimbly (with distinction in the clinical sciences and the degree with honours) Sharon Bronwyn Guy Tamsyn Hangone Jason Leigh Harry Emile Ayanda Hlophe Tamzyn-Jade Huisamen (with distinction in the clinical sciences and the degree with honours) Chloe Oriete Ile Ragiba Ismail (with distinction in the clinical sciences and the degree with first class honours) Megan Harriet Jacobs Umar Jacobs Brigid Maureen Jelsma Mithra John (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Margaret Amber Johnston (with distinction in the clinical sciences) Amahle Jongile Yandisa Manduleli Jordan Quinta Joubert (with distinction in the basic sciences and clinical sciences and the degree with honours) Kathleeen Murugi Kabuya (with distinction in the clinical sciences) Yasmin Kahn Morne Frank Kahts (with distinction in the basic sciences and clinical sciences and the degree with honours)

Athenkosi Kema Phethego Evelyn Kgatla Basanta Khatry-Chhetry (with distinction in the clinical sciences and the degree with honours) Kele Kholoane (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Ronald Mbonisi Khumalo Edmund Richard Buti Kivingi Kibuuka Carolyn Sian Kitchin (with distinction in the clinical sciences) Augusta Abena Kodua-Agyekum Nicholas Koen Melissa Kube David Henry Langford (with distinction in the basic sciences and clinical sciences and the degree with honours) Min Kyu Lee (with distinction in the basic sciences and clinical sciences and the degree with honours) Mahlatse Jonas Lekokotla Jordan Luke Leppan Mohlalefi Charles Letuka Ziyaad Mohammed Limalia (with distinction in the clinical sciences and the degree with first class honours) Tara Ludwig Akho Lupuwana (with distinction in the clinical sciences and the degree with honours) Liyabona Luthuli Mbongeni Reuben Mabanga Charmaine Xapiro Machimana Zizipho Noluthando Madikizela Nsika Andile Madonsela Thandanani Ayanda Madonsela Siphesihle Khanya Mahanjana (with distinction in the clinical sciences and the degree with honours) Sohil Verandhra Maharaj (with distinction in the clinical sciences and the degree with honours) Unathi Mandaba Kgaugelo Manyane Jani Maritz (with distinction in the clinical sciences and the degree with honours) Georgina Zanele Masawi Mmapelo Mogodisi Mashamba Tumelo Mashishi Similo Nandi Gracehope Mathenjwa Zikhona Matyesini Nokuthula Sibusiso Mayaba Nalisu Zanethemba Mazubane

Carla Mckenzie (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Nkosinathi Thabiso Mdlalose Noxolo Nokwazi Mdlalose Laurie Kate Milligan Siyathuthuka Mnqobi Mkhize Kgomotso Mocumi Kgomego Miranda Mogane Asmaa Khanya Mohamed (with distinction in the clinical sciences) Poloko Lesedi Moloi Kehlin Moodley (with distinction in the clinical sciences and the degree with honours) Mamotente Precious Moraswi Kgothatso Mankwe Mothapo Palesa Motjuwadi Kagiso Kg Mphachoe Lerato Bridget Mponya Sphesihle Nonzuzo Mthembu Kate Elizabeth Muckart (with distinction in the clinical sciences and the degree with honours) Allison Lynne Muller Onkgopotse Neo Mvumvu Sinenhlanhla Noxolo Mvuyana Nomasiko Benedicta Myeni Aarefa Nagia (with distinction in the clinical sciences) Azele Anne Naicker (with distinction in the clinical sciences and the degree with first class honours) Riashen Naidu Nimesh Naran (with distinction in the clinical sciences and the degree with honours) Vusumzi Ncapayi Simphiwe Ndaba Zamandlazi Princess Ndlazi Michael Francois Nel (with distinction in the clinical sciences and the degree with honours) Portia Thobeka Ngcobo Bongani Emmanuel Nghondzweni Simphiwe Nothando Ngwenya Kristin Stacey Nieuwenhuys Nasiphi Njomeni Ngwanatheko Tshegofatso Nkopodi Simphiwe Bongekile Nkwanyana Sivuyile Simiselo Ntete Thembelihle Sinegugu Nxasana Patricia Nyabinge Omwansa Sarah Shafika Parker (with distinction in the clinical sciences) Aimeé Lee Parsons

Sameera Patel (with distinction in the clinical sciences and the degree with honours) Avusiwe Pefile Tahlia Megan Perumal (with distinction in the clinical sciences and the degree with honours) Tayla Jordan Phillips (with distinction in the basic sciences and clinical sciences and the degree with honours) Murray David Polkinghorne (with distinction in the clinical sciences and the degree with honours) Amber Polley (with distinction in the clinical sciences) Tendai Michael Ponde Storm Ann Ouinlan (with distinction in the clinical sciences) Sheryl Rajpaul (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Tshepiso Antonette Ramafuthole Ashmika Rampersad (with distinction in the clinical sciences) Suanne Rankwana Kavil Reddy (with distinction in the clinical sciences and the degree with honours) Cesca Roberts (with distinction in the clinical sciences and the degree with first class honours) Keryn Ainslee Roberts Kiera Caitlin Robertson Muhammad Riyaad Salamut Anesa Salie Ilhaam Samaai (with distinction in the clinical sciences) Erin Nicole Sampson (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Frank Dean Sanan Karen Ruth Schuster (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Alex John Scott (with distinction in the clinical sciences) Karabo Mmapitso Sebopa Dineo Rethabile Rejoice Sefoloko Zainul-abidin Shaik (with distinction in the clinical sciences) Nontuthuko Samukelisiwe Shandu Zolelwa Sifumba Hloniphile Sihlali

Sidharth Ajith Singh (with distinction in the clinical sciences) Anelisiwe Anathi Sokanvile Simoné Nicole Solomon (with distinction in the clinical sciences and the degree with honours) Abiola Ayobambo Soniyi Jonathan Paul Spanos (with distinction in the clinical sciences and the degree with honours) Gabriella Nadine Stein (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Akhona Stemela **Richard Charles Sturrock** Nazim Subrottee Tessa Kirsty Suttle (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Gladys Aba Swatson Mogamat Arshad Taliep Hassan Ali Tariq Mampe Tema Edson Salomoa Tembe Kaveer Thejpal (with distinction in the clinical sciences and the degree with honours) Julie Kate Thomas (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Sibongile Tito Tshepile Tlali (with distinction in the clinical sciences) Hamza Van Der Ross Eldi Van Loggerenberg Servaas Daniël Verster (with distinction in the clinical sciences and the degree with honours) Danell Visser (with distinction in the clinical sciences and the degree with honours) Ulrich Albert Vogeli (with distinction in the basic sciences and clinical sciences and the degree with honours) Naadiya Waggiet Kendra Jodie Wilson (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Kristen Withey (with distinction in the basic sciences and clinical sciences and the degree with first class honours) Zipo Bridgette Woji

Olivia Wootton (with distinction in the clinical sciences and the degree with first class honours) Kirstie Leigh Wright Stephanie Jane Wright (with distinction in the clinical sciences) Jimmy Ken Lim Yap-San-Min Chad Michael Young

DEGREE OF MASTER OF NURSING IN CHILD NURSING

Tiyamike Narley Nkhoma

DEGREE OF MASTER OF PHILOSOPHY IN EMERGENCY MEDICINE

In Clinical Emergency Medicine: †Garth van Niekerk

In Patient Safety & Clinical Decision-Making A: Kirsten Lesley Cohen

DEGREE OF MASTER OF SCIENCE IN NURSING

Israel Olatunji Gabriel (with distinction)

DEGREE OF MASTER OF SCIENCE IN PHYSIOTHERAPY

*Henriette Oosthuizen

DEGREE OF DOCTOR OF PHILOSOPHY

In Biomedical Engineering: *Keri Jane Woods Thesis Title: Parietal dysfunction in children with prenatal alcohol exposure

Keri Woods has a BCom from Rhodes University, and a BSc(Hons) and MSc in Computer Science from UCT. Her doctoral research emerged as a result of her work as a research assistant in the Biomedical Engineering Department at UCT.

Keri Woods' thesis examines the effect of prenatal alcohol exposure in children on parietal activation during number processing and place learning, using functional magnetic resonance imaging. These functional domains were investigated using tasks of proximity judgment and exact addition to assess neural correlates of symbolic number processing, non-symbolic number comparison at various difficulties and place learning in a virtual environment. During all number processing tasks, children with prenatal alcohol exposure showed impaired activation of the right horizontal intraparietal sulcus which is involved in the mental representation and manipulation of quantity. In boys only, prenatal alcohol exposure was associated with poorer place learning and reduced activation during place learning in the precuneus and posterior cingulate. These results confirm that boys and girls use different navigation strategies relying on different brain regions, suggesting that regions used by boys are more susceptible to alcohol damage, while regions used by girls are relatively spared.

Supervisor: Professor E Meintjes (Human Biology) In Clinical Pharmacology: Thomas Atingane Anyorigiya Thesis Title: Pharmacokinetic profile of amodiaquine and its active metabolite desethylamodiaquine in Ghanaian patients with uncomplicated Falciparum malaria

Thomas Anyorigiya has a BSc from Kwame Nkrumah University, Ghana and an MSc from University of Ibadan, Nigeria. His thesis emerged from a study on the efficacy of artesunate-amodiaquine malaria treatment in Ghana, where he has been a Research Officer / Laboratory Manager at the Navrongo Health Research Centre since 2002.

Thomas Anyorigiya's thesis started with the development and validation of a sensitive and selective LC-MS/MS method to determine concentrations of amodiaquine and its active metabolite, desethylamodiaquine from a small volume of capillary blood. Using finger-prick blood increases the feasibility of conducting pharmacokinetic studies in the remote settings that carry the highest malaria burden. This assay method was then successfully used in the largest study to date on amodiaquine and desethylamodiaguine pharmacokinetics. Cure rates in Ghanaian patients of all ages with uncomplicated malaria treated with the fixed-dose artesunate-amodiaquine combination were very high (>97%). Reassuring results show that young and malnourished children, who carry the highest malaria burden globally, achieve optimal drug exposure with currently recommended doses. However, drug concentrations may be higher than needed in infants (under 1 year of age). No safety concerns were identified in any age group.

Supervisor: Professor KI Barnes (Medicine)

Co-supervisor: Dr L Wiesner (Medicine)

In Clinical Science & Immunology: Thandeka Moyo

Thesis Title: Role of Envelope compactness and glycosylation in HIV-1 resistance to neutralising antibody responses

Thandeka Moyo holds a BSc with distinction in Biochemistry and Microbiology and a BSc(Hons) in

Biochemistry from Rhodes University. She then completed an MSc(Med) in Clinical Science and Immunology at UCT.

Broadly neutralising antibodies which target HIV are of interest to the vaccine field because they can prevent viral entry into cells. A vaccine that can induce these antibodies may be effective in preventing HIV infection. However, some viruses have evolved to resist antibody neutralisation. The focus of Thandeka Moyo's thesis is on understanding factors which cause HIV resistance to neutralising antibody responses. This thesis describes the characterisation of an unusually neutralisation resistant virus which evades antibody responses by remaining in a closed, compact conformation. Understanding this compactness mechanism may aid in vaccine development. This thesis also describes the role of glycans in shielding the virus from antibody responses. The V3/glycans shield HIV from antibody responses but are also the target of some broadly neutralising antibodies. It was then found that the V3/glycan epitope is associated with the breadth and potency of common antibodies and some viruses are able to lose certain glycans and remain neutralisation resistant. These data have implications in the design of a therapeutic vaccine.

Supervisor: A/Professor J Dorfman (Pathology) Co-supervisor: Professor C Gray (Pathology)

*Mumin Ozturk

Thesis Title: *Tuberculosis transcriptomics: host protection and immune evasion mechanisms*

Mumin Ozturk completed his BSc in Molecular Biology and Genetics at Bilkent University, Turkey and his master's degree in Chemical and Biological Engineering at Koc University, Turkey. He started his PhD studies in 2013 and received the ICGEB Arturo Falaschi Pre-Doctoral Fellowship

Mumin Ozturk's thesis concentrates on bioinformatic analysis of large transcriptomics data on murine macrophages infected with clinical strain of Mycobacterium tuberculosis. The indepth analysis reveals many potential coding and non-coding RNA transcripts which might play a role in host responses and immune evasion mechanisms against the pathogen. He shows that as one of the target genes, basic leucine zipper transcription factor 2 (Batf2) regulates inflammatory responses in Mtb infected mice and deletion of Batf2 gene in mice results in survival of these mice with decreased immunopathology compared to wild type controls. He further shows that another target gene Protein Kinase C-delta (Prkcd) has immunoprotective roles and deletion of Prkcd in mice results in hypersusceptible phenotype. These findings provide novel functions of these genes in tuberculosis pathogenesis and pave the way for future studies on their potential in tuberculosis interventions.

Supervisor: Professor F Brombacher (Pathology)

Co-supervisor: Dr R Guler (Pathology)

Sumayah Salie

Thesis Title: *The evaluation of four novel non-neuroleptic phenothiazines with antimycobacterial activity and non-toxic profiles*

Sumayah Salie obtained her BSc in Chemistry, and BSc(Med)(Hons) in Pharmacology at UCT. In 2011, she joined the Division of Immunology as an MSc student and subsequently upgraded to doctoral studies.

Sumayah Salie's thesis reports on the evaluation of a new subclass of phenothiazine compounds as antituberculosis drug candidates. The classical phenothiazines are mostly used as psychotropic drugs. In her study, she demonstrates that the modification of the phenothiazines was successful to abolish their neuroleptic properties. She further demonstrates the superior antimycobacterial activities of these compounds against Mycobacterium tuberculosis in culture, in which they are not cytotoxic to macrophages. Sumayah Salie's thesis also provides both an in vitro and in vivo toxicity profile of each compound focussing on biochemical and histological analyses. All four non-neuroleptic phenothiazines

investigated were found to be less toxic than thioridazine, a phenothiazine which has been used in clinical trials to treat drug-resistant tuberculosis patients. These findings will contribute to the development of new anti-tuberculosis drugs which could potentially meet all the current needs for tuberculosis therapy.

Supervisor: Professor M Jacobs (Pathology)

Co-supervisor: Dr N-J Hsu (Pathology)

In Exercise Science: *Sarah Elizabeth Mc Fie Thesis Title: Identification of factors modulating risk and severity of a sport-related concussion

Sarah Mc Fie completed her BSc and BSc(Med)(Hons) qualifications at UCT before beginning full-time study towards her PhD in 2012.

Sarah Mc Fie's thesis investigates the incidence of concussion and the potential modulating factors for sport-related concussion susceptibility and symptom severity. The data from four years of prospective injury surveillance at the South African Youth Week rugby tournaments enabled her to calculate the incidence of concussion in South African junior rugby and identify several risk factors for concussion. She examined the role of personality traits and genetic variation in concussion through the further recruitment of over 300 high school, amateur, and professional rugby players. Using a candidate gene approach, personality-linked polymorphisms located catechol-O-methyltransferase in the and serotonin transporter genes were associated with concussion susceptibility, while polymorphisms in the neuroinflammatory regulating interleukin 1β and interleukin 6 genes were correlated with symptom severity. The evidence highlighted may collectively assist in improving our understanding of the risk factors and underlying pathophysiology of concussion, which could lead to improved prevention, management, and treatment strategies.

Supervisor: A/Professor A September (Human Biology) Co-supervisor: Dr M Posthumus (Human Biology) In Forensic Medicine: Navindhra Navin Naidoo Thesis Title: Gender-based violence: strengthening the role and scope of prehospital emergency Care by promoting theory, policy and clinical praxis

Navindhra Naidoo has an NDip from Technikon Natal, an HDE from the University of Natal, a BTech from the Durban University of Technology and an MPH from UKZN. His thesis emerged from his personal and paramedic experiences in domestic violence crisis intervention.

Navindhra Naidoo's thesis aims to understand and strengthen current and potential practice of genderbased violence prevention by prehospital emergency medical systems within the context of national and global healthsector responses. Prehospital screening for domestic violence is found to be acceptable and effective. Bio-psychosocial responses and evidence-based medicine should guide Emergency Care responses to domestic violence as the burden of unmet need is unacceptable. Organisational and ideological change is warranted as there exists paradoxical Emergency Care practice relative to the behavioural pathology of domestic violence. Emergency Care needs roledefinition, identity and violence recontextualisation in the presence of ambivalent and contradictory positions. Emergent theoretical propositions include: typologies of victims, perpetrators and stakeholder responses; an eco-systemic relationship of state and societal expectations; and a conceptual tool for preventing systemic bias in research. Recommendations include the national implementation of a routine screening policy; regulatory-capture mitigation and curriculum-reform. The proposed Risk-Need-Responsivity Model promotes a sense of Emergency Care coherence.

Supervisor: A/Professor L Artz (Pathology) Co-supervisor: Professor LJ Martin (Pathology) *In Health Economics:* Veloshnee Govender Thesis Title: *The role of gender in patient-provider trust for tuberculosis treatment*

Veloshnee Govender holds postgraduate degrees in Health Economics and Public Health from UCT and Boston University, respectively. Prior to joining the World Health Organisation (WHO), she was based in the Health Economics Unit at UCT.

Veloshnee Govender's thesis adopts a gender perspective, focusing on the role of trust in relationships between patients and healthcare providers, and its potential to influence treatment adherence in the context of tuberculosis. Her research was undertaken in three local government-managed case study primary health care facilities in Cape Town. Data were gathered through qualitative approaches with patients and healthcare providers as primary participants. Key findings are that the interdependence and vulnerability of both patients and healthcare providers and the underlying influence of gender on the relationship are not always recognised and understood. Moreover, for both patients and providers, relationships of trust are built and sustained through a complex range of interpersonal and institutional factors, shaped by individual, community and health service influences. In concluding, she proposes specific strategies for building patient and provider trust in each other, and in the health system, and offers ideas for future, related research.

Supervisor: Professor L Gilson (Public Health and Family Medicine)

In Medical Biochemistry: *Cherise Sherril Dunn Thesis Title: Investigating the role of the renin angiotensin system in cancer

Cherise Dunn completed her BSc and BSc(Hons) in Microbiology and Biochemistry at the University of KwaZulu-Natal, and began full time study at UCT towards her MSc in 2011. Her research developed into a PhD project and she upgraded her studies in 2013.

Cherise Dunn's thesis reports

her observations of the role that various key proteins involved in the regulation of hypertension play in cancer. She investigated the function of a major arm of the renin angiotensin system (RAS), termed the ACE-1 axis, and discovered that RAS proteins are associated with cancer cell proliferation. Her research shows that antihypertensive drugs inhibit the proliferation of cancer cells. She also investigated whether the second arm of the RAS, termed the ACE-2 axis, has antagonistic effects on cancer cells as it exerts this function in a hypertension context. It was found that indeed, the ACE-2 axis could prevent ACE-1 induced effects and that small molecules promoting ACE-2 activity had anticancer activity on their own, as well as in combination with current chemotherapy drugs. The findings of this thesis suggest that certain antihypertensive agents in combination with known chemotherapeutics have potential as cancer therapies and warrant further investigation.

Supervisor: Professor V Leaner (Integrative Biomedical Sciences)

Fezile Bongekile Khumalo Thesis Title: Evaluation of high content microparticle technology for addressing current limitations of multiplexed detection

Fezile Khumalo conducted her undergraduate and master's qualifications at the University of Johannesburg, and was subsequently accepted for PhD study at UCT in the Department of Integrative Biomedical Sciences. Her doctorate is a natural progression of her master's research project, and her studies were conducted in collaboration with the Council for Scientific and Industrial Research.

Fezile Khumalo's thesis outlines the development of high content microspheres to enable new detection technology for flow cytometry. Flow cytometry is a powerful diagnostic technology capable of multiple disease detection in a single sample, a principle termed multiplexing. Her thesis addresses the limitations of quantifying biomarkers using fluorescent labels, by evaluating Surface Plasmon Resonance, as a 'label-free' alternative. The proofof-concept study demonstrated successful quantification of biomarkers using SPR, and may potentially enable new diagnostic technologies using flow-cytometry devices. The research demonstrated detection of a model biomarker using labelled and label-free detection. The research paves the way for development of new diagnostics on a flow cytometry assay platform.

Supervisor: Professor J Blackburn (Integrative Biomedical Sciences) Co-supervisor: Dr J Jordaan (Biochemistry, Microbiology and Biotechnology, Rhodes University)

In Medical Microbiology: Sophia Johanna Gessner Thesis Title: Molecular mechanisms of DNA repair in Mycobacterium tuberculosis

Sophia Gessner obtained her BSc, BSc(Hons) and MSc qualifications from the University of Pretoria. In 2013, she registered at UCT for a PhD in Molecular Mycobacteriology in order to extend her nascent expertise in DNA repair to a major human pathogen.

Sophia Gessner's thesis focuses on the DNA damage response in Mycobacterium tuberculosis, the bacterium which causes tuberculosis (TB), with a special interest in the mechanisms enabling accelerated evolution under conditions of nutrient stress. Combining molecular biology and biochemistry techniques, the role of a novel protein predicted to operate with a known mutagenesis cassette is investigated. No distinct function for this novel protein is revealed in mycobacteria. Similarly, a parallel analysis of the role of the mutagenesis cassette in the adaptive evolution of M. tuberculosis in conditions of amino acid starvation suggests that an alternative mechanism(s) contributes to this phenomenon. These results reinforce the need for systematic investigations of the mechanisms enabling stress-induced mutagenesis in mycobacteria in order to obtain a comprehensive understanding of mutations acquisition during host infection. This is critical to identifying novel therapeutic regimens to prevent the development of drug resistance in this devastating human pathogen.

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

Bosco John Kalule Thesis Title: One Health -One City; the extent of Shiga-toxin producing Escherichia coli in Cape Town

Bosco Kalule completed his Bachelor in Veterinary Medicine (2005) and M(Med) (Microbiology) at Makerere University, Kampala, Uganda.

Bosco Kalule's thesis focuses on the extent of Shiga toxin Producing E. coli (STEC) and other food and waterborne bacterial pathogens in Cape Town. He investigates the prevalence of diarrhoeic E. coli in stool from patients at Groote Schuur Hospital (GSH) and then characterises virulence determinants and molecular epidemiology of the detected pathogens. Using the One- Health surveillance approach, he defines the characteristics of foodborne bacterial pathogens in meat from informal abattoirs, the stool of children with diarrhoea, as well as water from the Lotus River in Nyanga Township. He shows that foodborne bacterial pathogens are prevalent in human and non-human sources in the Nyanga Township, and identifies possible sources of human infection. These findings highlight the relevance of the One-Health surveillance approach in South Africa, and the urgent need to implement appropriate measures to control the spread of food and waterborne infections.

Supervisor: Professor M Nicol (Pathology)

Co-supervisor: Dr KH Keddy (National Institute of Communicable Diseases, Johannesburg)

In Medical Virology: Godfrey Azwindini Dzhivhuho Thesis Title: An investigation of the impact of parasitic worm infection on the immunogenicity of candidate HIV vaccines

Godfrey Dzhivhuho completed his BSc, BSc(Hons) and MSc qualifications at the University of Venda. Before joining UCT for full-time PhD studies, he worked as Summer Research Intern at the University of Virginia, USA, Medical School in a stroke prevention program.

Chronic parasitic worm infections are thought to reduce the efficacy of vaccines. Given that HIV and worm infections are common in sub-Saharan Africa (SSA) and their geographical distribution vastly overlap, it is likely that future HIV vaccines in SSA will be administered to a large proportion of people with chronic worm infections. Godfrey Dzhivhuho's thesis examines the impact of parasitic worm infections on the capacity of candidate HIV vaccines to elicit effective immune responses. He demonstrates that infected individuals respond poorly to HIV vaccination and elimination of worms by 'deworming' confers only partial restoration of normal immune responses to vaccination. He further shows that effective HIV vaccines could potentially worsen wormassociated pathology when given to infected individuals. These novel findings will likely guide further research in HIV vaccines and future vaccination policies regarding the current clinical vaccines and future HIV vaccination with respect to parasitic worm infections especially in SSA.

Supervisor: Dr G Chege (Pathology) Co-supervisors: Professor A-L Williamson (Pathology); A/Professor W Horsnell (Pathology)

Dieter Mielke

Thesis Title: *The impact of neutralizing antibody and ADCC responses on HIV-1 envelope evolution in early infection*

Dieter Mielke completed his BSc and BSc(Med)(Hons) qualifications at UCT, and began full-time study toward his MSc in 2013, converting to a PhD in 2015.

Dieter Mielke's thesis uses deep sequencing together with immune assays to characterise viral evolution associated with both neutralising antibody (nAb) and antibody-dependent cellular cytotoxicity (ADCC) responses in early HIV-1 infection. He shows that the transmitted virus can avoid early nAbs through cellto-cell transmission, which may limit the impact nAbs have on the transmitted virus population. He continues by providing evidence for the first time of ADCC-driven immune escape in early infection. Together, these results motivate for ADCC responses to be included in HIV-1 vaccine design. Finally, he showed that virus-infected cells were more sensitive to ADCC mediated via certain non-neutralising antibodies that targeted a region of the HIV-1 Envelope inaccessible on free virions, compared to broadly neutralising antibodies. Together these findings will be useful for informing the design of a protective HIV-1 vaccine.

Supervisor: Professor C Williamson (Pathology) Co-supervisor: Dr C Anthony (Pathology)

In Medicine:

*Jason David Limberis Thesis Title: *Clinical outcome, transmission, and infectiousness in patients with drug-resistant tuberculosis*

Jason Limberis completed his BSc and BSc (Hons) in Molecular Biology at Stellenbosch University. In 2014, he enrolled for a MSc(Med) at the University of Cape Town and subsequently upgraded to a doctorate in the following year.

Jason Limberis's thesis within the Lung Infection and Immunity Unit focuses on the outcomes and infectiousness of patients with drug resistant tuberculosis, including those with incurable TB. He investigated these using clinical data, novel cough aerosol sampling technology, and whole genome sequencing that unravels the DNA code of the causative organism. The findings show that the majority of patients with extensively drug resistant TB have unfavourable outcomes, between-person transmission of drug resistant tuberculosis is high and that selected patients are extremely infectious. He further identified factors predicting extreme infectiousness and markers linked to M. tuberculosis bacterial fitness and drug resistance. His findings have important implications for clinical practice and public health policies.

Supervisor: Professor K Dheda (Medicine)

Nicholas James Woudberg Thesis Title: Understanding the relationship between High-Density Lipoprotein (HDL) subclass distribution and functionality in patients at risk of cardiovascular disease

Nicholas Woudberg holds a BSc and BSc Honours degree in Biochemistry from the University of KwaZulu-Natal. He joined the Hatter Institute in the department of Medicine at UCT in 2014 to start his MSc, which he upgraded to a PhD in 2015.

Nicholas Woudberg's thesis focuses on understanding how risk factors for cardiovascular disease may be associated with a change in function and subclass distribution of highdensity lipoprotein (HDL). To this end, he investigates three African sample populations with different cardiovascular risk factors. His findings report, for the first time in an African population, that black South Africans may have improved HDL function and subclass distribution compared to white South Africans. Obesity is associated with a decrease in HDL subclass size and function. Interestingly, this effect could be partially reversed with an exercise training intervention. In addition, HDL composition and function is adversely affected by hypertensive status. These differences in HDL function and subclass distribution are not related to any differences in HDL-cholesterol levels, a historical risk factor for cardiovascular disease. These findings therefore suggest that evaluating HDL function and subclass may be more accurate predictors of cardiovascular risk in an African population than HDL-cholesterol.

Supervisors: Professor S Lecour (Medicine)

Co-supervisors: A/Professor JL Goedecke (Human Biology); Dr MU Frias (University of Geneva, Switzerland)

In Neurosciences:

Mathew Michael Gerhold Thesis Title: *A study of event-related electrocortical oscillatory dynamics associated with cued motor-response inhibition during performance of the Go/NoGo task within a sample of prenatally alcohol-exposed children and age-matched controls*

Matthew Gerhold completed his undergraduate studies at UCT, and began working on his PhD in 2010.

Matthew Gerhold's thesis is in the area of alcoholism and alcohol-related disorders, focusing on how foetal alcoholexposure affects brainwave activity and associated cognitive processes at later stages of human development (preadolescence and adolescence). The observed alcohol-related changes in the electrical fields of the human brain are related to cognitive processes, such as inwardly directed attention towards decision-making processes and reallocation of cognitive resources in order to deal with movement-related demands. These processes enable humans to adapt to cues that prompt a shift away from specific movement patterns to alternative inhibited states. This study is the first to demonstrate the effect of prenatal alcohol exposure on brainwave activity related to decision-making processes in a developing, alcohol-exposed sample. It is also the first study to demonstrate decision-making linked brainwave activity, previously only observed in adult samples, within a normally developing control group. In addition, the study creates important and novel insights into signal-processing methods applied to the study of brainwave data.

Supervisor: Professor E Meintjes (Human Biology) Co-supervisor: Dr C Andrew (Human Biology)

*Sarah Jean Heany

Thesis Title: *Testosterone influences the social-emotional brain and modulates responsiveness to emotive and arousing cues: An fMRI based study of the effects of acute testosterone administration*

Sarah Heany holds BA, BSc(Hons) and MA qualifications in Psychology. Her doctoral work began after collaborating on neuroimaging projects with the Department of Psychiatry and Mental Health in 2013.

Sarah Heany's thesis investigates the role of testosterone in the brain's responses to threatening stimuli. Although testosterone has been long associated with increased aggression and even reducing types of anxious behaviours, the underlying neural mechanisms are not vet understood. In this thesis a series of specially designed experiments arouse affective responses in healthy women, and their neural activity is recorded using fMRI techniques. The main finding of the thesis is the detection of decreased connectivity between the left orbitofrontal cortex and the subcortical threat network in the face of escapable threat. This finding allows an understanding of the neural mechanisms through which testosterone acts on responsivity to a threatening environment, and can help to explain behavioural changes associated with testosterone. This finding also has implications for the study of certain types of psychopathology where related dysregulation of brain activity is noted.

Supervisor: Professor D Stein (Psychiatry and Mental Health) Co-supervisor: Professor J van Honk (Psychiatry and Mental Health)

Loren Leclezio Thesis Title: Identification of natural TSC-Associated neuropsychiatric disorders (TAND) clusters

Loren Leclezio holds a BA in Psychology and BA (Hons) in Neuropsychology from the University of South Africa. She joined the Division of Child & Adolescent Psychiatry at the University of Cape Town in 2012 where she completed her MSc (Med) in Neuroscience, before starting PhD studies in 2014.

Loren Leclezio's thesis focuses neuropsychiatric manifestations on associated with Tuberous Sclerosis Complex (TSC), a rare multi-system genetic disorder. Most people with TSC have TSC-associated neuropsychiatric disorders (TAND), yet few receive diagnosis or treatment for these problems. Loren Leclezio hypothesised that the overwhelming uniqueness of TAND in each individual leads to a treatment paralysis. She proposed that by identifying a small number of natural TAND clusters (natural groupings of manifestations), identification and treatment for these problems would be improved. Using multivariate cluster and factor analysis in a sample of 453 people with TSC from 6 international clinics, she identified 7 natural TAND clusters with good statistical robustness that appear clinically meaningful. These can be used to develop educational programmes for professionals and families and to develop evidencebased clinical resources for TAND. In addition, her findings suggest novel ways to think about causes and treatments of the neuropsychiatric phenomena in TSC.

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

Omesan Nair

Thesis Title: *Profiling medulloblastoma* and juvenile pilocytic astrocytoma brain tumours in a South African paediatric cohort

Omesan Nair completed his BSc, BSc(Hons) and MSc(Med) degrees at UCT and began full-time study towards his PhD during 2014.

Omesan Nair's thesis investigates the molecular profiles of the two most common types of childhood brain tumours in a South African cohort. Brain tumours in children are one of the most challenging diseases to treat, especially in developing world circumstances. Epidemiological and outcome data are lacking in the developing world, and in general there are very few molecular biology programs. There are currently no reliable data on presentation of disease, the spectrum of tumours treated, how these are treated, and what the outcomes are, much less

molecular characterisation of tumours, for children in South Africa. Therefore, this thesis investigates the malignant Medulloblastoma and the less aggressive Juvenile Pilocytic Astrocytoma, with respect to their molecular biology and their clinical correlates to begin to address these gaps.

Supervisor: Professor A Figaji (Surgery) Co-supervisor: Professor JM Blackburn (Integrative Biomedical Sciences)

Fleur Louise Warton Thesis Title: *The neurostructural effects of prenatal exposure to methamphetamine in an infant population in the Western Cape*

Fleur Warton has a BA(Th) from the Bible Institute of South Africa and a BSc from UCT majoring in chemistry and physiology. She obtained her BSc(Med) (Hons) and MSc(Med) in physiology from UCT.

Fleur Warton's thesis uses magnetic resonance imaging (MRI) to investigate the effects of prenatal methamphetamine exposure on the central nervous system in neonates recruited from the Cape Flats region of the Western Cape. Methamphetamine exposure has been associated with structural and functional changes in the brain in older children. Structural MRI is used to measure potential volume changes in regions of the brain hypothesised to be affected by methamphetamine, following which potential white matter changes are investigated using diffusion tensor imaging. The results suggest that infants with prenatal exposure exhibit reduced volumes of the caudate nucleus and poorer white matter integrity in fibres connecting regions involved in cognitive and emotional control. These changes may underlie the impaired executive function exhibited by these children.

Supervisor: Professor EM Meintjes (Human Biology) Co-supervisor: Dr CMR Warton (Human Biology)

In Psychiatry:

Sarah Ann Skeen Thesis Title: *Children affected by HIV/ AIDS attending programmes to improve psychosocial well-being: current status and pathways to effective interventions*

Sarah Skeen holds a BSc in Speech-Language Pathology from the University of Cape Town and a Master's in Public Health from the University of Sydney. She previously worked at UCT and the World Health Organization in Geneva, and currently works at Stellenbosch University on research relating to child and family well-being.

Sarah Skeen's thesis focuses on community-based interventions to improve psychosocial well-being for children affected by HIV/AIDS. She uses a systematic review and data from the Child Community Care study to report on the current developmental and mental status of children enrolled in 28 community programmes, their caregivers' mental health, levels of exposure to violence, and what new evidence exists for community-based interventions to improve psychosocial well-being of children affected by HIV/AIDS. She makes a number of recommendations for future investment of funding for children affected by HIV/AIDS in the southern African region.

Supervisor: Professor M Tomlinson (Psychiatry and Mental Health) Co-supervisor: Professor L Sherr (Health Psychology, University College London)

In Radiotherapy: Michelle Parker Thesis Title: Mitochondrial dynamics in the radiation response of cancer cells

Michelle Parker completed her BSc at the University of the Free State and then obtained a BSc(Med)(Hons) in Genetics and a MSc(Med) in Medicine at UCT.

Michelle Parker's PhD thesis examines the role of mitochondrial dynamics in radiosensitivity and the potential application in cancer treatment. Radiotherapy can accurately deliver significant radiation doses to tumour tissue but not all tumour cells are responsive. This thesis presents evidence to demonstrate that modulation mitochondrial fragmentation of processes can enhance tumour cellular radiosensitivity. Mdivi-1, an inhibitor of mitochondrial fission, is demonstrated to induce cytotoxicity, cell cycle arrest and cytogenetic damage, and to augment radiosensitivity in cancer cells. Thus, it is suggested that agents targeting mitochondrial dynamics hold promise for pharmaceutical and clinical intervention. In addition, the thesis correlates mitochondrial characteristics, including morphology, mitochondrial membrane potential and respiration, with radiation response, further elucidating interactions. Through examination of structural and mechanistic aspects of mitochondrial physiology, the thesis serves to develop a new paradigm for future improvement of cancer radiotherapy.

Supervisor: Dr A Hunter (Radiation Medicine)

In Surgery:

Jacobus Edmund Krige Thesis Title: *A prospective evaluation to define optimal surgical strategies in the management of complex pancreatic injuries based on the analysis of patients treated at a major South African academic institution*

Jacobus Krige is Emeritus Professor of Surgery and previous Head of Surgical Gastroenterology and Hepatopancreatobiliary Surgery at Groote Schuur Hospital. He is a Fellow of the American College of Surgeons, Royal College of Surgeons of Edinburgh, South African College of Surgeons and editor of the South African Journal of Surgery.

Jacobus Krige's thesis defines the optimal surgical strategies in the management of patients with complex and life-threatening injuries of the pancreas. He developed and populated the largest comprehensive high-quality single centre clinical database in the world on complex pancreatic injuries. Using robust and reliable methodology and objective and reproducible end points the analyses addressed the major unresolved issues in treating severe pancreatic injuries after gunshot and blunt trauma. Multivariate logistic regression analysis modelling established criteria to validate outcome data and provide international benchmarks fundamental to transforming surgical practice and enhancing quality of care. New validated prognostic injury scores and trauma classifications were developed for complex pancreatic injuries and detailed novel and advanced surgical techniques were established for removing and reconstructing the injured pancreas. The twelve international publications from this thesis have facilitated future global comparative assessment and serve as landmark references for improving surgical outcome and survival after severe pancreatic injuries.

Supervisor: Professor A Nicol (Surgery)

Santhoshan Thiagaraj Pillay Thesis Title: *Pig mucus as an inhibitory agent of HIV-1*

Santhoshan Pillay has a background in immunology, particularly the immune response to infection by HIV-1. For his MSc degree, he conducted a descriptive study of CD8+ T cells in HIV positive adults with and without TB where he measured a variety of markers, including those for cellular death and immune exhaustion.

Santhoshan Pillay's thesis investigates the role of mucus and mucins from animal sources in the inhibition of HIV-1, in an in vitro assay. Mucins (mucous glycoproteins) are large glycosylated molecules that are responsible for the formation of mucus gels that line the epithelial surfaces of the internal tracts of the body. He shows that crude saliva and its purified mucins and those of breast milk and the cervical plug, inhibit HIV-1 in an in vitro assay. Owing to the limitations of working with human material, one of them being its availability, he turns his attention to animal sources for a supply of mucus. He chooses the pig because of its physiological and anatomical similarity to humans. He finds that the inhibition of HIV-1 by mucins in pig gastric, saliva and cervical secretions was just as potent as that in humans.

Supervisor: Professor AS Mall (Surgery)

FACULTIES OF ENGINEERING & THE BUILT ENVIRONMENT, HUMANITIES, HEALTH SCIENCES, LAW AND SCIENCE

ORDER OF PROCEEDINGS

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

The Presiding Officer will constitute the congregation.

The National Anthem.

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

Musical Item.

Welcome by the Master of Ceremonies.

The graduands and diplomates will be presented to the Presiding Officer by the Deans of the Faculties.

The Presiding Officer will congratulate the new graduates and diplomates.

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

The Presiding Officer will dissolve the congregation.

The procession, including the new graduates and diplomates, will leave the hall. (*The congregation is requested to remain standing until the procession has left the hall.*)

NAMES OF GRADUANDS/DIPLOMATES

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

1. FACULTY OF HUMANITIES

Acting Dean: Professor D Wardle

CERTIFICATE IN ADULT EDUCATION, TRAINING & DEVELOPMENT

*Vatiswa Eunice Lobete

ADVANCED CERTIFICATE IN EDUCATION

In Adult Education: *Lungisa Mzizana

DANCE TEACHER'S DIPLOMA

Katherine Anne Millar

HIGHER CERTIFICATE IN EDUCATION IN ADULT EDUCATION

*Nuriesa Fredericks

POSTGRADUATE CERTIFICATE IN EDUCATION

In Senior Phase and FET Teaching: Veronique Ravat

POSTGRADUATE DIPLOMA IN EDUCATION

*Zurelda Lizan Mitchell *Mila Balesdent Moreano

POSTGRADUATE DIPLOMA IN LIBRARY AND INFORMATION STUDIES

*Nokuthula Allyssa Buso

POSTGRADUATE DIPLOMA IN MUSIC PERFORMANCE

*Thembinkosi Mgetyengana (with distinction) *Lekula Levy Sekgapane (with distinction)

DEGREE OF BACHELOR OF ARTS

Tahzeeb Akram Yolanda Benya *Sarah Jane Bunker *Gabby Datnow Chandre Davids Meghan Harris Bonginkosi Shaun Jiyane Malusi Katsi Siyabonga Thomas Kruger *Itumeleng Cedrick Maimela Intelligence Itumeleng Malope *Mawanda Kevin Mase *Geraldine Dumisile Mathe Daniel Cuito Naude Lufuno Jessica Ramadwa Adam Pope Rothschild (with distinction in Spanish Studies)

DEGREE OF BACHELOR OF ARTS IN FINE ART

*Nicola Robin Sturgess

DEGREE OF BACHELOR OF MUSIC IN EDUCATION

Emily Rachel Watkyns

DEGREE OF BACHELOR OF SOCIAL SCIENCE

Samara Sasha Abrahams Samantha Olwethu Bekebeke Ada Bentsela Demi Carelse *Mutsa Catherine Chipo Chasakara *Marshalley Natasha Claassen Sinakho Gugu Dhlamini Lee-Anne Paula Fraschia Kerryn Gammie *Nicholas Michael Goss Camille Harris Zain Hill Tsitsi Melissa Jani Jessica Kees Kutloano Clive Legoale Sinazo Ludidi Karabo Makhosazana Mabaso Fikile Mahlati Tshiamo Moipone Mahloele

- *Athenkosi Lithakazi Manikivana Leah Paula Mehl Nathan Clyde Moses Tshepo Motale
- *Andrea Xola Mthembu Karishma Anil Nandha Sechaba Lehlohonolo Nkitseng Siyabonga Bandile Ntombela Kylie Catharine Opperman Aamir Faheem Osman
- *Vaughn Ashcroft Pears Allen Christian Petersen Motlalepula Cathy Phukubje Stephanie Pillay Narisha Renu Ramdenee Nicole Rudolph
- *Chikondi Redson Ganizo Seyani *Nombuso Zamaswazi Nolwazi Shabalala Shaun Jemaine Singh Moneesha Bronwyn Solomons Rachel Corinne Stein
- *Clayton Isheanopa Takawira

DEGREE OF BACHELOR OF SOCIAL SCIENCE

In Philosophy, Politics and Economics: *Frederick Brann Tatham

DEGREE OF BACHELOR OF SOCIAL WORK

Tammy Felecia Adams *Nicole Gemma Fumagalli Praise Mbanga Sibulele Nyibiba Mkhutshulwa Alexander Mudavanhu Rutendo Ruva Rosalind Murambiwa (with distinction in Studies in Social Work) Onele Ngwendu Simone Solomon Chantel Samantha Solomons Darne Van Rensburg

DEGREE OF BACHELOR OF ARTS (HONOURS)

In Media Theory and Practice: Bronwynne Victoria Jooste

DEGREE OF BACHELOR OF MUSIC (HONOURS)

In Performance: *Tamsanqa Ncokwana

DEGREE OF BACHELOR OF SOCIAL SCIENCE (HONOURS)

In African Studies: *Siyabonga Njica

In Anthropology: Tasha Dilraj

In Clinical Social Work: *Jessica-Bridgette Klette

In Gender and Transformation: *Karabo Mafolo *Mususumeli Suzan Ramudzuli

In International Relations: *Zaid Lagardien *Zukiswa Millicent Nkhereanye

In Organisational Psychology: *Mtutuzeli Buyani Ngcobondwane

In Philosophy: *Charles James Bester

In Public Policy & Administration: Katlego Nkgudi

2. FACULTY OF ENGINEERING & THE BUILT ENVIRONMENT

Dean: Professor A Lewis

POSTGRADUATE DIPLOMA IN PROJECT MANAGEMENT

*Rushnique Lambert

*Brian Jack Rowlands

POSTGRADUATE DIPLOMA IN PROPERTY STUDIES

Ross Lee Brittain *Tzvetomira Radoslavova Kirova Mario Frank Penso *Jason Eric Toay

POSTGRADUATE DIPLOMA IN TRANSPORT STUDIES

*Isabel Shiela Gwebu

DEGREE OF BACHELOR OF SCIENCE IN CONSTRUCTION STUDIES

Taariq Chiecktey *Jibraan Mohammad Shameel Hossanee Bhekuthando Ronald Junior Maroleni Mwai Mataka Sajjaad Ahmad Naimi Thokozani Nhlapo Mohamed Akbar Rajab *Jashan Nityananda Ramasamy

DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING IN CHEMICAL ENGINEERING

*Anthony James Balladon Matthew Theodore Jackson *Boitumelo Ipeleng Moloto *Andile Siphelele Ngubane *Lawrence Taderera *Nomalha Winn Wittika

DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING IN CIVIL ENGINEERING

*Deogratias Bukasa Ilunga (with honours)
Luke Joshua Fouche
*Oratile Moloko
Shaelin Nagiah
Kaboyamodimo Craig Nare
Myles Conway Prime (with honours)
*Ana Sofijanic

DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING IN ELECTRICAL AND COMPUTER ENGINEERING

Nichol Nhlamulo Bamuza Timothy James Nicholas Colborne Daniel Roger Flowers Regina Luki Kgatle *Ntsika Mmeli Mabongo Cairin Bruce Michie Losika Monang Roan John Song

DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING IN ELECTRICAL ENGINEERING

Welile Hlengiwe Biyela Aaron Duda *Nolwandle Giselle Mango Matthew Lesiba Mashiane Meril Mathew Tshilidzi Mulayo Lufuno Ralinala Paepae Sello

DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING IN MECHANICAL ENGINEERING

Tshepo Kekana *Ntomboxolo Madlebe Nhlakanipho Innocent Vilakazi

DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING IN MECHATRONICS

Isaac Lebogang Khobo Nqaba Uviwe Bonga Okuhle Ndlwana Tashen Ramchund Emmanuel Isaac Tshiteta

DEGREE OF BACHELOR OF SCIENCE IN GEOMATICS

*Puleng Lelala Tamsin Charnay Peters

DEGREE OF BACHELOR OF SCIENCE IN PROPERTY STUDIES

*Amara Chenia *Kyle Dos Santos Shane Lance Kaplan

> DEGREE OF BACHELOR OF CITY PLANNING HONOURS

*Nhlonipho Siphosethu Biyela

DEGREE OF BACHELOR OF SCIENCE HONOURS IN CONSTRUCTION MANAGEMENT

*Robert Bryn Day *Andre Willem Lategan

> DEGREE OF BACHELOR OF SCIENCE HONOURS IN PROPERTY STUDIES

*Stephen George Wallace

DEGREE OF BACHELOR OF SCIENCE HONOURS IN QUANTITY SURVEYING

Ryan William Hyslop Daniel Emmanuel Masuba *Corey Anthony O'Riordan

3. FACULTY OF SCIENCE

Dean: Professor A le Roex

DEGREE OF BACHELOR OF SCIENCE

Qaasim Adams Mzuvukile Adonisi Rael Freedom Alexander Leonard Christopher Barnes Jacques Botha Christine Margaret Evert Marcia Salenta Karappen Amber Juliette Konstant Gerard Le Roux Pierre Atikonda Madziakapita Tiisetso Nkululeko Malinga Alexia Patinios Onkabetse Reginald Setlhabe Adam James Soule *Asante Nkululeko Thabethe Kabelo Tladi Philip Vincent Warrington Alexander Vincent Whiting Sandra Zaroufis

DEGREE OF BACHELOR OF SCIENCE HONOURS

In Computer Science: Kudzai Pius Whande

4. FACULTY OF LAW

Dean: Professor P Andrews

POSTGRADUATE DIPLOMA IN LAW

In Tax Law: *Matthew Edward Wilson

DEGREE OF BACHELOR OF LAWS

Adnaan Fakier *Ryan William Grunder

DEGREE OF MASTER OF LAWS

*Fridtjof Gregusson Svartdal

In Commercial Law: Andrew Masaba Bisagaya Heinrich Rüdiger Helm Keryn Susan Layton-McCann Portia Welile Noxolo Manzini Charlotte-Sophie Picker

In Constitutional and Administrative Law: *Michael David Law

In Dispute Resolution: Carla Mrotzek

In Environmental Law: *Ivana Custic In International Law: Petrus Shimweefeleni Kauluma Hatupopi

In International Trade Law: *Megan Ruth Hardy Chidimma Stella Nwike

In Labour Law: Selina Rohr

In Private Law: Kagiso Annette Maphalle

In Public Law: Yusha Davidson

In Shipping Law: *Ruvarashe Kudzai Samkange

DEGREE OF MASTER OF LAWS IN COMMERCIAL LAW

*Sven Goldstein (with distinction)
 *Keri Hattingh
 *Freya Elisabeth Humbert (with distinction)
 Paulus Namukwambi
 *Frederick Ian Ofwono

DEGREE OF MASTER OF LAWS IN DISPUTE RESOLUTION

Ann-Sophie Mante (with distinction)

DEGREE OF MASTER OF LAWS IN INTELLECTUAL PROPERTY LAW

Noluthando Dyaphu

DEGREE OF MASTER OF LAWS IN INTERNATIONAL TRADE LAW

*Florencia Pilar Lopez Tobias Luck Mavhuru Anthony Christopher Mitchell *Johannes Schorpp

DEGREE OF MASTER OF LAWS IN LABOUR LAW

*Zameer Brey Bristol Maurice Buys Itebogeng Letty Olifant

> DEGREE OF MASTER OF LAWS IN SHIPPING LAW

Xolile Dlepu *Maria Mirat Navarro

> DEGREE OF MASTER OF LAWS IN TAX LAW

*Mubeen Adam Jaffer

DEGREE OF MASTER OF PHILOSOPHY

In Criminology, Law and Society: Ruby Ellen Weber (with distinction)

In International Law: Corinne Aurelie Moussi

5. FACULTY OF HUMANITIES

Acting Dean: Professor D Wardle

DEGREE OF MASTER OF ARTS

In Art Historical Studies: *Olga Speakes (with distinction)

In African Languages and Literature: *Ndumiso Saziso Madubela

In Creative Writing: Olivia Michelle Coetzee *Michael Hardaker (with distinction) Irene Wanjiru Ndiritu (with distinction) *Almini van der Merwe

In Documentary Arts: *Jennifer Lynn Merrick

In Economic History: *Kamaluddin Kweku Yakubu In Film Studies: Diann Christine Shantell Selman

In Historical Studies: *Pancras Malani

In International Relations: *Robin Alexander Frost *Marie Kristie Tania Thomas

In Language, Literature and Modernity: Noélle Koeries

In Media Studies: Alyssa Rozelle Kleintjes

In Organisational Psychology: Kavesh Natrarlal Vanmali (with distinction in the dissertation)

In Political Communication: *Shiuh Jon Adam Chen (with distinction)

In Social Anthropology: Catherina Suzanne Truyts (with distinction)

DEGREE OF MASTER OF ARTS IN FINE ART

Houghton Desmond Kinsman

DEGREE OF MASTER OF ARTS IN NEUROPSYCHOLOGY

*Anna Jane Dreyer (with distinction in the dissertation)

DEGREE OF MASTER OF EDUCATION

In Applied Language and Literacy Studies: *Emma-Kate Rowley

In Curriculum Studies: *Kirstin Jane Kukard (with distinction)

In Higher Education Studies: *Roisin Kelly (with distinction) Bitha Kontle Susanne Doris Noll In Information Communication Technologies: Jerran Phiri

In Primary Education: *Shasha Lan *Rachel Margaret O'Leary

In Science Education: Mugove Chawapiwa Ndoro

DEGREE OF MASTER OF FINE ART

- Pierre Henri Le Riche (with distinction) *Kirsten Lee Lilford
- *Jan Philip Raath (with distinction) *Nicole Irene Shaer (with distinction) Marguerite Venter (with distinction)

DEGREE OF MASTER OF LIBRARY AND INFORMATION STUDIES

Brandon Adams

DEGREE OF MASTER OF MUSIC

In Music (Dissertation and Composition): Shaun Dale Crawford (with distinction) Mitchell Alfred Wooldridge (with distinction)

In Music (Dissertation, Performance and Coursework): *David Pieter Derek Van Niekerk

In Music (Dissertation and Coursework): Edward Sake

DEGREE OF MASTER OF MUSIC IN DANCE

Bernice Valentine

DEGREE OF MASTER OF PHILOSOPHY

In African Studies: *Nkululeko Hutson Mona *André Prado Fernandes (with distinction) In Development Studies: *Seo Hyung Lee Jane Bazo Shiyo Janeth Bazo Shiyo

In Digital Curation: Seta Jane Jackson (with distinction)

In Heritage and Public Culture: *Carlyn Strydom

In Justice and Transformation: Mary Bassem Fawzy Kyla Jane Emma Hazell (with distinction) *Charlotte Georgia Marais (with distinction) *Theodore Stainer

In Philosophy, Politics and Economics: *Luke Farrell

In Public Policy and Administration: Erica Eo'Lani Ryan

In Sociology: Robin John Smaill

DEGREE OF MASTER OF PHILOSOPHY IN EDUCATION

In Information Communication Technologies: *Joel Godwin Gogwim

In Science Education: *Andrew John Petersen

DEGREE OF MASTER OF SOCIAL SCIENCE

In Applied Economics: Nicholas Sebastian Jacobs (with distinction in the dissertation) *Sofia Gabriela Monteiro (with distinction)

In Economic Development: *Ashleigh Robyn Fynn

In Gender Studies: *Jennifer Dowd *Jan-Louise Victoria Lewin (with distinction) In Global Studies: *Michael Edward Blake Field

In International Relations: Daniel Andreas Feldman Isabel Alexandra Kreifels (with distinction) Ashleigh Dawn Searle

In Organisational Psychology: *Fawwaaz Davids Lauren Gedye

In Philosophy: *David Glyn Harris

In Politics: Sihle Isipho Nontshokweni

In Social Development: *Yen Mee Cheng Yone Shin

In Social Work: Sophia Stadler

6. FACULTY OF ENGINEERING & THE BUILT ENVIRONMENT

Dean: Professor A Lewis

DEGREE OF MASTER OF ENGINEERING

In Civil Infrastructure Management and Maintenance: Keamogetswe Antoinette Mmekwa

In Nuclear Power: Mithun Chutri

In Telecommunications: *Mark Charangwa *Adada Edia

DEGREE OF MASTER OF SCIENCE IN ENGINEERING

In Chemical Engineering: *Uwais Al Qarn Ahmed Christopher Chikochi (with distinction) Saliya Lusa Muketekelwa (with distinction) In Civil Engineering: *Lillian Ngabirano William Peter Younger Smith Darren Joseph Willenberg

In Electrical Engineering: Amakan Elisha Agoni *Mohammad Yousef J. Aldossary Alexander William Densmore (with distinction) Musa Manganda Ntlahla Ntsadu (with distinction) Nataizya Sikasote Adrian Dale Stevens *Kushal Uprety (with distinction)

In Geomatics: Marthinus Wessel Van Der Walt

In Materials Engineering: Pedro Claudio Francisco Chicuba Livhuwani Tessa Magidi Duduzile Zamavezi Nkomo *Trisha Rasiawan Nicole Seumangal *Bridget Gcinaphi Sikhondze (with distinction) Lavhelesani Oliet Tshamano

In Mechanical Engineering: Donovan Matthew Changfoot (with distinction) Daniel Eferemo Thobani Paul Shangase James Alexander Wills

In Radar & Electronic Defence: Tighe Barris

DEGREE OF MASTER OF SCIENCE IN PROJECT MANAGEMENT

Eugene Christopher Espin (with distinction) Stephen Njoroge Koigi Bonga Desmond Ntshangase (with distinction in the dissertation)

DEGREE OF MASTER OF SCIENCE IN PROPERTY STUDIES

*Jacobus Hendrik Botha Enelge Gildenhuys (with distinction in the dissertation) *Wayne Craig Godwin Rufaro Wellington Makanya (with distinction in the dissertation) *Anil Ramjee *Adriaan Nicolaas At Van Der Linde

DEGREE OF MASTER OF PHILOSOPHY

In Architecture & Planning: Preetya Bhikha *Baxolele Lennox Zono

In Conservation of the Built Environment: Nicoline Catharina Jongens

In Construction Economics & Management: Gregory David Mallett

In Energy Development Studies: *Tawney Sharee Lott Shanon Lusinga *David Wallace Murray

In Engineering Management: Maleho Shadrack Nteo Philani Nduna Zincume (with distinction in the dissertation)

In Nuclear Power: Fagmie Essa

In Transport Studies: *Luke Phillip Wagner

7. FACULTY OF HEALTH SCIENCES

Dean: Professor B Mayosi

DEGREE OF MASTER OF MEDICINE

In Anaesthesia: Janine Olivia Choonoo (with distinction in the dissertation) Abigail Hanlise Daniels *Leon Du Toit Zahnne Fullerton *Tarryn Golding Maria Elisabet Nock *Petrus Rohan Pretorius Anri Spies In Medical Genetics: Cedrik Ngongang Tekendo (with distinction in the dissertation)

In Medicine: Ahmed Khalifa Almradi

In Nuclear Medicine: *Yaw Ampem Amoako

In Obstetrics & Gynaecology: Castro Robertson Kisuule Dakalo Arnold Muavha Elfriede Swarts Latiefa Vinoos (with distinction in the dissertation)

In Ophthalmology: Lodewicus Francois Malherbe *Junaid Freedom Zondi

In Orthopaedic Surgery: Gerhard Thiart

In Otorhinolaryngology: *Jessica Kate Mc Guire (with distinction in the dissertation)

In Paediatrics: Alhaji Alusine Jalloh Tisungane Knox Titus Mvalo *Linda Jane Riemer *Nicholas Guy Webb

In Pathology (Clinical): Celeste Swart

In Pathology (Haematological): Lee-Ann Phillips (with distinction in the dissertation) Luhan Swart

In Psychiatry: Robyn Jane Akhurst Kerryn Sian Armstrong (with distinction in the dissertation) Juan Berwers Marise Bruwer Lihle Mgweba-Bewana (with distinction in the dissertation) Kirsten Andrea Hazel Reid

In Radiation Oncology: Mtabeni George Jemu *Zanele Rowena Nkosi Tlotlo Bathethi Ralefala *In Radiology:* *Chuma Singata

In Surgery: Parveen Karjiker Deidre Estelle Kathleen McPherson (with distinction in the dissertation) *Shreya Rayamajhi *Sanju Sobnach Khaled Ibrahim Twier (with distinction in the dissertation)

DEGREE OF MASTER OF PHILOSOPHY

In Biokinetics: Jonathan Joshua Tanya Smith

In Biomedical Forensic Science: Sandra Lynne Catterson

In Gastroenterology (Surgical): *Jacobus Christoffel Kloppers

In Maternal & Child Health: Nonkqubela Carvie Kula

In Nephrology (Adult): *Bianca Davidson (with distinction in the dissertation)

In Paediatric Neurology: *Sally Ackermann (with distinction in the dissertation) *Edward Nkingwa Kija (with distinction in the dissertation)

In Paediatric Oncology: *Karla Mari Thomas (with distinction in the dissertation)

In Palliative Medicine: Franciscah Ndayiziveyi Tsikai

In Public Mental Health: Nyamadzawo Chivese *Japhet Myaba *Winifred Nalukenge *Prasansa Subba (with distinction)

In Sport & Exercise Medicine: *Louise Stopforth *Jason Alexander Suter In Sports Physiotherapy: *Simon Andrew Moore

DEGREE OF MASTER OF PUBLIC HEALTH

Nyaradzo Mandimika (with distinction in the dissertation) Mishal Pandie (with distinction) *Julia Martha Wood (with distinction)

In Community Eye Health: Nuru Said Omari

In Epidemiology: Agatha Tafadzwa Banga Elise Sarah Farley (with distinction) *Christiana Eposi Haddison Rae Patrick Macginty (with distinction in the dissertation) Vimbai Mandizvidza

In Health Economics: Danleen James Hongoro

In Health Systems: Nkandu Chikonde *Edzani Brenda Mphaphuli (with distinction in the dissertation)

DEGREE OF MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

Giancarlo Lanfranci Beukes (with distinction) Gokul Arjunan Nair Kenneth Stuart Park (with distinction)

DEGREE OF MASTER OF SCIENCE IN MEDICINE

In Anatomical Pathology: Neo Tshepiso Mokhesi (with distinction)

In Biomedical Engineering: Kieran Eamon Duggan

In Clinical Pharmacology: *Sumanth Karamchand (with distinction)

In Clinical Science and Immunology: Thabo Rantanta Mpotje In Medical Cell Biology: *Morea Petersen

In Medicine: Christine Herculine Albertyn (with distinction) Laikyn Jade Victor

In Neuroscience: *Lee Maya Ginton Maryam Patel (with distinction)

In Surgery: *Kathleen Kehoe (with distinction)

8. FACULTY OF SCIENCE

Dean: Professor A le Roex

DEGREE OF MASTER OF PHILOSOPHY

In Archaeology: Kyla Catherine Pelton Bluff *Marius Ebersohn Breytenbach Vuyiswa Thembelihle Lupuwana *Gertrude Mamotse Matswiri Catherine Schenck *Matthew Shaw

In Climate Change & Development: *Zachariah Glasser

In Environmental & Geographical Science: Peta Deborah Brom

In Environment, Society & Sustainability: *David Paul Cook Fezile Zamile Mathenjwa *Griffin Nortje Sharon Ramsawmy Fridah Siyanga *Michaela Woelk

In Information Technology: *Henry John Arnold

DEGREE OF MASTER OF SCIENCE

In Applied Marine Science: *Maeva Mereana Marion Beltrand *Kristina Ulrike Loosen In Applied Mathematics: *Alastair James Grant-Stuart *Arnold Ngapasare (with distinction)

In Archaeology: Nicole Jean Mann Navashni Naidoo (with distinction)

In Astronomy: *Lauren Sarah Burnham-King

In Astrophysics & Space Science: Gilad Amar Arrykrishna Mootoovaloo (with distinction)

In Biological Sciences: Ismat Adams Anathi Mbona *Seth Daniel Musker (with distinction)

In Chemistry: *Linley Nicole Barnard Petrus Siningu Shanika

In Climate Change & Development: Theresa Kinkese Bellinda Mashoene Monyela Janet Chatanga Selato *Omagano Ndapewa Shooya

In Computer Science: *Maryam Meshari Almukhaylid Job King'ori Maina (with distinction) *David Peter Shorten Marcel T'ai Mrkusic Terblanche

In Conservation Biology: Huyam Altayeb Abbas *Tendai Chinho *Margaret Parrish

In Decision Sciences & Analytics: James Andrew Combrink

In Information Technology: *Frank Nonso Igboamalu

In Mathematics: Jason Fourie

In Molecular & Cell Biology: *Ross Martin Cowlin Scott De Beer Francisco De Figueiredo Pinto Gomes Pera Timothy James Dennis (with distinction) Sigcinile Dlamini Angus Love Mackay *Gerrit van Wyk Amy Louise Veenstra Varusha Pillay Veerapen Sara Sylvia Wighard

In Ocean & Climate Science: Tharone Rapeti

In Physics:

*Lucas Michael Henry McConnell Xolisile Octavia Thusini *Raynette Van Tonder (with distinction)

DEGREE OF DOCTOR OF PHILOSOPHY

In Applied Mathematics: Patrick William Adams Thesis Title: On the study of analogues in cosmic magnetism

Patrick Adams holds BSc and MSc degrees in Applied Mathematics from UCT. He was appointed a lecturer in the Department of Mathematics and Applied Mathematics at UCT in July 2016. Patrick Adam's thesis is motivated by the need to find alternative methods for studying magnetic fields that exist in extreme environments or inaccessible distances. His thesis addresses the long-standing problem of finding fluids that may be analogous to magnetic fields, using numerical simulations of magnetohydrodynamics (MHD) and fluid dynamics (FD) to do a detailed study of the behaviour of two fluids; one charged and the other non-charged. Unlike previous studies, the thesis examines and compares nonturbulent fluid flows in which magnetic diffusivity and kinematic viscosity are non-negligible. The thesis also examines and extends the fundamental equations in mean-field approximation to magnetic fields, and comments on the application of Analogue Magnetism to the problem of determining a functional form for the mean electromotive force (EMF), as well as that of the Reynolds stress tensor in Fluid Dynamics.

Supervisor: Dr B Osano (Mathematics and Applied Mathematics)

Eli Kunwiji Kasai Thesis Title: *SALT spectroscopy and classification of Supernova spectra using Bayesian techniques*

Eli Kasai graduated from the University of Namibia in 2005 with a double major BSc in Physics and Mathematics. He also holds BSc(Hons) and MSc degrees in Astrophysics and Space Science from UCT. He started his PhD studies in 2013 in Astrophysics and Cosmology.

Eli Kasai's thesis brings to the Astronomy and Cosmology community a new tool called 'SupernovaMC' (SNMC) for classifying the light from supernova candidates using Bayesian statistics. Supernovae are exploding stars that were used to discover the acceleration of the Universe. The classification efficiency of SNMC is tested using both simulated and known literature supernova spectra. SNMC is then used to classify 36 spectra of SN candidates taken with the Southern African Large Telescope as part of the international Dark Energy survey, which will provide new constraints on the expansion history of the universe. A subsample is used to search for evolution of calcium and silicon features in Type Ia supernovae, finding results consistent with previous analysis and showing no evidence for evolution.

Supervisor: Professor BA Bassett (Mathematics and Applied Mathematics) *Co-supervisor:* Dr SM Crawford (South African Astronomical Observatory)

Anthony Paul Walters Thesis Title: *Some numerical investigations in cosmology*

Anthony Walters has BSc and MSc degrees from UCT. His PhD in Applied Mathematics at UCT, specialises in Cosmology.

Anthony Walters' thesis investigates what observations would look like in the very inhomogeneous Szekeres spacetime, which exhibits a complex behaviour. It focuses on aspects that are limited or absent in spherical symmetry, especially redshifts, proper motions and area distances. The theoretical background uses the null geodesic and geodesic deviation equations, valid for observations at any position in any spacetime. Anthony Walters created and debugged the numerical implementation, and it passed tests for multiple special cases. He produced a selection of plots illustrating the accuracy and the expected observations for several different models. He also studied the behaviour of chameleon particles in the early universe. In particular, this work studies the role of Dirac-Born-Infeld high energy corrections to the action for chameleon fields in the early universe and shows that these corrections destabilise the socalled surfer solution. The surfer solution could prove problematic for chameleon models, and thus the discovery that higher order corrections remove that solution is an important contribution to chameleon cosmology.

Supervisor: A/Professor A Weltman (Mathematics and Applied Mathematics) Co-supervisor: A/Professor C Hellaby (Mathematics and Applied Mathematics)

In Archaeology: Brigette Fiona Cohen Thesis Title: Sedimentology and taphonomy of cenozoic vertebrates from Langebaanweg, Cape West Coast, South Africa; with palaeoecological interpretations

Brigette Cohen completed her BSc (Zoology) and MSc (Palaeontology) degrees at the University of the Witwatersrand, before commencing with full-time study towards a PhD at UCT.

Brigette Cohen's thesis focuses on a reconstruction of the depositional at the world-famous environment fossil locality of Langebaanweg, on the west coast of South Africa. The fossils preserved at Langebaanweg date to 5.2 million years ago, around the time our earliest ancestors began to appear on the African landscape. Known for its array of extinct mammal, bird and reptile species, this locality provides a rare glimpse of the animal community, as well as the prevaling environmental conditions. at the time. While Langebaaweg's fossils have seen extensive study, the depositional context(s) of its fossil beds are not well understood. Brigette Cohen's

research suggests that the fossiliferous beds at Langebaanweg were laid down in a barrier-island estuary during a period of rising sea levels. Many of the fossils may also have been deposited in a river channel, or associated feature like an oxbow lake, at more-or-less the same time as those deposited in the estuary. These results provide important context for future studies on the Langebaanweg fossil assemblage.

Supervisor: Dr D Stynder (Archaeology) *Co-supervisor:* Dr R Smith (Palaeontology, Iziko South African Museum

Nicholas Alexander Zachariou Thesis Title: From Missionary to Merino: Identity, economy and material culture in the Karoo, Northern Cape, South Africa, 1800 - ca. 1870

Nicholas Zachariou has a BA from the University of Pretoria, BA(Hons) in History from the Victoria University of Wellington, New Zealand, plus a BA(Hons) and an MPhil in Archaeology from UCT.

Nicholas Zachariou's thesis addresses changing forms of British colonial power through the 19th century and its impacts upon the identity of Karoo mission and farm communities of Khoesan and Dutch descent. Through a combination of archaeological and documentary evidence, he identifies a critical change in the middle of the 19th century. Before the 1860s Karoo households emphasised self-sufficiency and asserted patterns of consumption and display that emphasised social resilience to change. After 1860, Karoo households increasingly adopted the material trappings of British style and 'Britishness'. A critical outcome links this shift to the globalisation of the Karoo rural economy through merino wool exports and the flood of mass-produced British goods into the Cape. The thesis provides an important start in exploring the materiality of local responses to British power and global processes.

Supervisor: A/Professor S Hall (Archaeology)

In Astronomy: *Iniyan Natarajan Thesis Title: Probabilistic methods for radio interferometry data analysis

Iniyan Natarajan obtained his BE degree in Computer Science and Engineering from Anna University, Chennai, India. He joined the Department of Astronomy at UCT in 2011.

Inivan Natarajan's thesis focuses on applying probability theory to the analysis of visibility data from radio interferometers. He begins with a discussion of the rationale and the mathematical formalism behind the probability-theoretic approach, and the software written for this purpose. He then uses it to identify and characterise partially-resolved astronomical sources using Westerbork Synthesis Radio Telescope simulations. He further applies this method to resolve and estimate the size and brightness temperature of a jet emanating from the blazar J0809+5341, observed using the technique of Very Long Baseline Interferometry (VLBI) with the European VLBI Network, in the presence of instrumental systematics. He then extends this method to incorporate solutions for the phase variations in radio waves, which arise due to the Earth's atmosphere during VLBI observations, and tests this approach by simultaneously estimating source structure and instrumental phases using the Event Horizon Telescope simulations.

Supervisor: Dr K van der Heyden (Astronomy)

Co-supervisors: Professor O Smirnov (Square Kilometre Array (SKA) Chair in Radio Astronomy Techniques and Technologies, Rhodes University); Dr J Zwart (University of the Western Cape, Astronomy)

Mpati Ramatsoku

Thesis Title: A Westerbork blind HI imaging survey of the Perseus-Pisces filament in the Zone of Avoidance

Mpati Ramatsoku completed her BSc in Astronomy at UCT, after which she pursued an honours and MSc in Astrophysics and Space Science (NASSP), and started a joint PhD degree between the University of Groningen and UCT in 2013.

Mpati Ramatsoku's thesis consists of the mapping of a large galaxy concentration belonging to a bright X-ray 3C129 cluster that had remained largely unexplored behind the thick dust layer of the Milky Way. This galaxy cluster is a constituent of the expansive and important cosmic structure known as the Perseus-Pisces Supercluster. The Westerbork Synthesis Radio Telescope was used for a survey of the cluster and its surroundings to identify hidden gas-rich galaxies from the redshifted 21-cm line-emission of their neutral hydrogen gas. Additional gas-poor galaxies were identified through nearinfrared band images from the UKIDSS Galactic Plane Survey. The Milky Way obscuration is negligible at both the radio and near-infrared wavelengths. The new galaxies allowed a detailed census of the cluster's galaxy population and the cluster mass, which may well contribute the local cosmic flow fields. The galaxies also provided a suitable sample to assess the environmentally-driven mechanism responsible for the transformation of galaxies.

Supervisors: Professor MAW Verheijen (Kapteyn Astronomical Institute, University of Groningen); Professor RC Kraan-Korteweg (Astronomy) Co-supervisor: Dr JWG de Blok (ASTRON, NL); Honorary Professor at University of Groningen and University of Cape Town

In Biological Sciences:

Kathleen Frances Carstens Thesis Title: *Breeding and dispersal implications for the conservation of the Southern Ground Hornbill Bucorvus leadbeateri*

Kathleen Carstens holds BSc, BSc(Hons) and MSc qualifications in Zoology and Genetics from the University of KwaZulu-Natal. She joined the FitzPatrick Institute of African Ornithology at UCT in 2014 for her PhD studies. Before her doctoral work, she was employed in the Southern Ground Hornbill Research and Conservation Programme.

Kathleen Carstens' thesis

presents an extensive investigation of the benefits and potential draw-backs of providing nest boxes for the Southern Ground Hornbill; a species that is currently limited by a shortage of natural nesting sites. She compared differences in breeding success, breeding attempts and the timing of breeding in groups making use of nest boxes with those in groups that bred in natural nesting sites. This allowed her to identify new factors that affect reproductive success in this species. She went on to describe, for the first time in this species, the dispersal of individuals away from their natal areas and into adjacent protected areas. These findings will be used to make recommendation for the design and provisioning of nest boxes in future conservation efforts, involving current wild sub-populations and for the reintroduction of founder groups.

Supervisor: Professor PG Ryan (Biological Sciences)

Jock Carlisle Currie

Thesis Title: *Historical baselines and a century of change in the demersal fish assemblages on South Africa's Agulhas Bank*

Jock Currie holds a BSc from the University of Namibia. He joined UCT as a marine biology honours student in 2005, followed by an MSc degree in 2011. His doctorate was inspired by the re-discovery and digitisation of a remarkable historical data set, which provides unprecedented insight into pristine marine ecosystems in the late 19th/early 20th century.

Jock Currie's thesis aims to describe historical baselines and to investigate long-term changes in the demersal fish community on South Africa's south coast. Maximum value from the historical records could be gained by revisiting the same sites and re-enacting historical surveys. By replicating historical trawl nets and methods, unknown biases, due to changes in fishing technology, could be avoided. This 111-year repeat experiment forms the basis of the thesis. The results reveal a substantially transformed fish community, in which previously-abundant fish species have declined drastically. These have largely been replaced by a different suite of species, which were present in small proportions in the historical catches. Results point to fishing-induced alteration of seafloor habitats and changes in ecosystem structure. This information will contribute towards improved management of South Africa's ocean and counters shifting baselines, whereby society accepts progressively eroded marine ecosystems.

Supervisor: A/Professor C Attwood

(Biological Sciences) *Co-supervisors:* Dr LJ Atkinson (Egagasini Node, South African Environmental Observation Network); Dr KJ Sink (Marine Program, South African National Biodiversity Institute)

*Davide Gaglio

Thesis Title: Investigating the foraging ecology and energy requirements of a seabird population increasing in an intensely exploited marine environment

Davide Gaglio completed his BSc and BSc(Hons) degrees at the University of Palermo, and his MSc (by coursework) at the University of Bologna, then began full-time study towards his PhD at UCT in 2013.

Davide Gaglio's thesis assesses the foraging ecology and energetic requirements of a population of Greater Crested Terns breeding in the Benguela system. They are unusual in being the only seabird that feeds mainly on small pelagic fish and whose population is increasing. Davide Gaglio develops a novel, non-invasive method to study the diet of this seabird, which can be effectively implemented in dietary monitoring programmes of species that carry prey in their bills. He found that the Greater Crested Tern's foraging plasticity, combined with its low energetic requirements, are key factors contributing to its success in a changing and highlyexploited environment.

Supervisor: Professor PG Ryan (Biological Sciences) Co-supervisors: Dr TR Cook (Biological Sciences); Dr R Sherley (Biological Sciences)

*Amy Georgina Harington Thesis Title: *Trace metal effects on phytoplankton in subpolar seas with special emphasis on coccolithophores*

Amy Harington holds BSc(Hons) and MSc degrees from UCT. Her PhD was split between study at the National Oceanography Centre, Southampton, UK, and at UCT. She completed her thesis while based at the Institute of Marine and Antarctic Studies in Hobart, Tasmania.

Harington's thesis Amv reports on the role of coccolithophores, an important group of phytoplankton with calcium carbonate "shells", or liths, which capture carbon dioxide through photosynthesis, but which are vulnerable to lowering ocean pH because of climate change. Known as ocean acidification, this pH effect is most pronounced in cold polar and subpolar oceans, hence Amy Harington's study locations in the far North Atlantic and in the Southern Ocean. Like all phytoplankton, coccolithophores require trace amounts of dissolved iron, zinc and other trace metals to function properly. Polar oceans generally are deficient in such metals, so her thesis examined the growth characteristics of coccolithophores when the concentrations of trace metals were artificially manipulated in cultures. Additions of both iron and zinc enhanced coccolithophore growth rates, even at low pH. Since the concentration of trace metals will vary in the future, this work provides insight into the ways in which coccolithophore communities might respond and the results can be incorporated into climate change models.

Supervisor: A/Professor M Lucas (Biological Sciences)

Co-supervisors: Dr A Poulton (National Oceanography Centre, United Kingdom); A/Professor C Moloney (Biological Sciences)

Thomas Otto Whitehead

Thesis Title: Comparative foraging ecology of macaroni and rockhopper penguins at the Prince Edward Islands

Otto Whitehead holds a BSc(Hons) degree in Marine Ecology from UCT. In 2011, he worked as a seabird researcher

at the sub-Antarctic Marion Island, which was instrumental in furthering his postgraduate studies. He enrolled for an MSc degree at UCT in 2012 and upgraded to a PhD in 2014.

Otto Whitehead's thesis focuses on the foraging ecology of macaroni and rockhopper penguins at the Prince Edward Islands. He uses bio-logging techniques and stable isotope analysis to infer their at-sea distribution and behaviour year-round. The main focus is to identify how these closely-related species co-exist, despite feeding on similar resources, and to investigate how each species responds to environmental variation. Both species exhibit similar habitat preferences during breeding and pre-moult stages, but a three-week difference in the onset of breeding reduces potential competition. During breeding, both species feed in oceanic waters, but rockhopper penguins also exploit shallow shelf waters. Diving behaviour is similar, but macaroni penguins dive deeper, more often, allowing them to exploit more deeper-dwelling fish. During winter, the larger macaroni penguins occupy cooler waters. Contrasting foraging strategies influence the responses of each species to environmental variation and may explain their different rates of population decline.

Supervisor: Professor PG Ryan (Biological Sciences) Co-supervisor: Dr Y Ropert-Coudert (The National Center for Scientific Research, CNRS, France)

In Chemistry:

Francoise Mystere Amombo Noa Thesis Title: *Halogen…Halogen interactions in Host – Guest systems*

Francoise Mystere Amombo Noa obtained her Baccalaureat at the Lycee Francais Dominique Savio in Douala, Cameroon and then proceeded to the Cape Peninsula University of Technology, where she obtained BTech (cum laude) and MTech Degrees. In 2013, she was the recipient of the James Moir medal awarded by the South African Chemical Institute. She then transferred to UCT, where she studied a series of host – guest compounds which contained halogen atoms.

Francoise Mystere Amombo

Noa's thesis deals with the characterisation of such compounds by studying their structures, thermal properties and their kinetics of decomposition and formation. The thesis describes the structure and properties of a series of related hostguest compounds which contain halogen atoms. The importance of halogenhalogen interactions is compared to hydrogen bonding, and the mechanism of guest exchange in such compounds, reveals the existence of ordered transitory phases. The kinetics of enclathration were successfully monitored for solid-gas and aqueous suspension systems.

Supervisor: Emeritus Professor LR Nassimbeni (Chemistry) Co-supervisor: Professor SA Bourne (Chemistry)

Paul Magutu Njaria

Thesis Title: Antimycobacterial 2-aminoquinazolinones and benzoxazole-based oximes: synthesis, biological evaluation, physicochemical profiling and supramolecular derivatization

Paul Njaria holds BPharm and MPharm degrees from the University of Nairobi, Kenya. He joined the Department of Chemistry at UCT in 2014 for his PhD studies. Before joining UCT, he worked as a pharmaceutical analyst at the National Quality Control Laboratory, Ministry of Health, Kenya.

Paul Njaria's thesis is founded on the urgent need to discover new drugs to combat tuberculosis (TB). Globally, TB is a major public health burden, with an estimated 10.4 million new cases and 1.8 million deaths annually. His thesis involves the application of medicinal chemistry principles to identify novel compounds as potential anti-TB agents. He focuses on the synthesis of new compounds, which fall under two categories: 2-aminoquinazolinones and benzoxazole-based oximes. He also investigates the synthesized compounds for their biological, pharmacokinetic and physicochemical attributes. His thesis identifies new organic compounds with potential to treat TB, and lays a platform for their future prospects in the development of novel anti-TB drugs. Overall, Paul Njaria's thesis brings to the fore the opportunities and challenges associated with the early stages of anti-TB drug discovery. Indeed, the importance of applying assay conditions that mimic TB infection is highlighted.

Supervisor: Professor K Chibale (Chemistry) Co-supervisor: Emeritus Professor M Caira (Chemistry)

Astrid Joan Trimmel

Thesis Title: An investigation towards a conjugate vaccine against Streptococcus pneumoniae serotype 19A

Astrid Trimmel completed her BSc, BSc(Med)(Hons) and an MSc in Surgery at UCT, before beginning her PhD studies in vaccine development at The Biovac Institute and UCT.

Astrid Trimmel's thesis focuses on the development of a conjugate vaccine against Streptococcus pneumonia serotype 19A bacteria. Pneumonia is the leading cause of death in children worldwide and multidrug resistant serotype 19A became responsible for most of invasive pneumococcal disease (IPD) after the introduction of the first conjugate vaccine against other serotypes. Her multi-disciplinary research started with microbiology in order to select and cultivate the 19A bacteria to produce the polysaccharide antigen, which was isolated and purified. Analytical tests showed that the polysaccharide batches met World Health Organisation (WHO) specifications for identity and purity. The polysaccharide was fully characterized by chemical and spectroscopic methods and conjugated to protein carriers using cyanylating chemistry. This proof of concept study established small-scale processes that can be further optimised for the manufacture of a conjugate vaccine against pneumococcal serotype 19A disease.

Supervisor: A/Professor N Ravenscroft (Chemistry) Co-supervisor: Dr S Wilson (The Biovac Institute)
In Computer Science: Josiah Chavula Thesis Title: Improving Pan-African research and education networks through traffic engineering: A LISP/SDN approach

Josiah Chavula holds a BSc from the University of Malawi, and an MSc from the University of Lancaster. He joined the Department of Computer Science at UCT in 2013 for his PhD studies, prior to which he worked as an academic at Mzuzu University in Malawi.

Josiah Chavula's thesis focuses on how Internet traffic is routed between universities in Africa. Using Internet measurement methods, he finds that a larger percentage of Internet traffic exchanged between African universities traverses links outside the continent. He further evaluates the performance impact in terms of delay, and finds that, on average, delays double for Africa's Internet traffic routed through Europe. Building on the inter-university topology characteristics that he discovered, he uses Software Defined Networking (SDN), Locator/Identifier Separation Protocol (LISP) and Reinforcement Learning to model a traffic engineering mechanism that would enable African universities to discover and dynamically configure multiple Internet paths. The mechanism leverages the multiple Internet paths that exist between African universities, making it possible for traffic to be transmitted through the best paths. Evaluation of the traffic engineering mechanism provided evidence that performance-based dynamic path selection can reduce delays for Africa's inter-university Internet traffic.

Supervisor: A/Professor H Suleman (Computer Science) Co-supervisor: Dr M Densmore (Computer Science)

Zubeida Casmod Dawood Thesis Title: *A foundation for ontology modularity*

Zubeida Casmod Dawood completed her BSc, BSc(Hons) (Cum Laude), and MSc (Cum Laude) degrees at the University of KwaZulu-Natal. She began full-time study towards her PhD at UCT in 2014.

Zubeida Dawood's thesis focuses on ontology modularisation, being the notion of reducing in size and simplifying a large logical theory. She investigated the problems regarding the lack of systematics in ontology modularisation, techniques and tools to modularise them, how to determine if a module is of good quality, and the lack of guidance on how to initiate modularisation for a given ontology. To solve these problems, she designed and implemented five novel algorithms for modularisation and proposed and refined 16 new module evaluation metrics, which have been evaluated quantitatively and qualitatively, and devised an empirically-based multidimensional framework for modularity. Zubeida Dawood's contributions have resulted in novel theories and techniques in modularity that can assist the user in creating useful modules depending on the application, automatically generating modules using these novel techniques, and automatically evaluating the quality thereof.

Supervisor: Dr M Keet (Computer Science)

*Ryan Gavin Goss Thesis title: *APIC: a method for automated pattern identification and classification*

Ryan Goss completed his MTech degree in 2009 at the Nelson Mandela Metropolitan University and began parttime study towards his doctorate in 2010. He is currently employed by Brocade Communications Inc. as an advanced staff engineer in the research and development team, applying machine learning in network management tasks.

The objective of Ryan Goss' thesis was to discover a new method for classifying IPtraffic on computer networks. His method challenges the state-of-the-art in IP traffic classification in both popular measures, namely completeness and accuracy, and introduces a new measure portability. The method demonstrated that using machine learning, fully-automated models could be developed to classify IP traffic, removing dependency on human experts. The efficacy of the method was tested for application as a Network Based Anomaly Detection (NBAD) system and for discovering less complex models to classify handwritten digits with competitive degrees of accuracy. The results of these case studies demonstrate that APIC is more than simply a method for improved IP traffic classification, but rather a general method applicable for improving performance in several classification tasks.

Supervisor: Dr GS Nitschke (Computer Science)

Haji Ali Haji

Thesis Title: Investigating mobile graphic-based reminders to support compliance of tuberculosis treatment

Haji Ali Haji has a BSc(Hons) in Computer Science from the Future University, and an MSc in Mobile Computer Systems (Mobile Computing) from Staffordshire University. His PhD emanated from research activities in mobile health in supporting tuberculosis treatment using mobile graphic-based reminder systems.

There is an increasing trend of mobile technology identified as a tool that can be used for supporting patients, such as those who have tuberculosis, for treatment adherence. However, current mobile interventions, such as text message and speech reminder systems, have limited use for people with low literacy levels. To overcome these challenges, Haji Ali Haji's research proposes mobile graphic-based reminders that can be used to support tuberculosis patients to improve compliance with treatment regimens, especially for semi-literate and illiterate patients. The novel contribution is in the evaluation of the effectiveness of the graphic-based reminders, versus speech-based reminders and usual care (without mobile reminders). This confirms that graphic-based thesis reminders were more useful in supporting

treatment adherence than speech-based reminders and traditional care (usual care). This provides empirical evidence indicating that a graphic-based reminder, designed based on patients' needs and requirements, could support the treatment of tuberculosis, especially for semiliterate and illiterate patients.

Supervisor: A/Professor H Suleman (Computer Science) Co-supervisor: Professor U Rivett (Information Systems)

In Environmental & Geographical Science: Gregg Clifford Brill

Thesis Title: *Testing the water: how* communities value, use, impact and manage water-related ecosystem services originating in an urban protected area

Gregg Brill has a BSc(Hons) from Rhodes University and an MSc from Stellenbosch University. His doctoral work emerged as a result of his previous research interests in social-ecological systems in Table Mountain National Park and the city of Cape Town.

Gregg Brill's thesis assesses how beneficiaries, stakeholders and managers within a developing city context, recognise, value and manage multiple and diverse ecosystems services associated with freshwater ecosystems, as provided by different landscape features and elements originating in urban protected areas. This study contributes to both the methodological and empirical literature by developing multidisciplinary approaches to assessing the beneficiaries of freshwater ecosystem services in an urban context and recognising the ecological, social and economic values assigned to ecosystem services over multiple spatial and temporal scales. This work was primarily undertaken in Table Mountain National Park and in Cape Town, South Africa. A Global South comparative analysis of the perceptions of park managers toward ecosystem service governance and management was undertaken in Table Mountain National Park and in Tijuca National Park, in Rio de Janeiro, Brazil.

Supervisor: Dr P Anderson (Environmental and Geographical Science) Co-supervisor: Dr P O'Farrell (Biodiversity and Ecosystem Services Group, Council for Scientific and Industrial Research)

*Benjamin Alan Mauck Thesis Title: *The capacity of the Cape Flats aquifer and its role in water sensitive urban design in Cape Town*

Benjamin Mauck completed his BSc, BSc(Hons) and MSc qualifications at UKZN, and began full-time study towards his PhD at UCT in 2013.

Benjamin Mauck's thesis investigates the capacity of the Cape Flats Aquifer (CFA), assessing the feasibility of implementing Managed Aquifer Recharge (MAR) as a strategy for flood prevention and for supplementing urban water supply, so as to facilitate the transition towards sustainable urban water management through the application Water Sensitive Urban Design (WSUD) principles. The results demonstrate that MAR as a flood mitigation strategy on the Cape Flats is feasible, assisting the prevention or mitigation of the seasonal flooding that occurs on the Cape Flats. Furthermore, MAR is shown to provide a valuable means of short- term or interseasonal storage that can improve the supply potential of the CFA. The case is made that MAR is an important strategy to assist the City of Cape Town in achieving its objectives of sustainable urban water management and ensuring reliable water supply to the city in the future.

Supervisor: Dr K Winter (Environmental and Geographical Science) Co-supervisor: Dr P Wolski (Environmental and Geographical Science) Anna Caroline Taylor Thesis Title: *Urban climate adaptation as a process of organisational decision making*

Anna Taylor completed her BSc and BSc(Hons) qualifications at UCT in 2004, and began full-time study towards her PhD in 2012.

Anna Taylor's thesis focuses on how local governments adapt a city to changes in the climate. Combining methods from organisational ethnography and processual case research, she investigates three cases of climate adaptation decision making in the City of Cape Town. Her findings suggest that both the cycles and pathways models of climate adaptation inadequately represent the contested and contingent nature of decision making that occurs within city governments. She argues that the rounds model of decision making provides conceptual tools to better understand and represent how the process of climate adaptation in cities is undertaken. These findings will be useful in furthering the implementation of climate adaptation in cities globally, as is prioritised in the UN's Paris Climate Agreement, the Sustainable Development Goals and the New Urban Agenda.

Supervisor: Professor S Parnell (Environmental and Geographical Science)

In Molecular & Cell Biology: Eva Aleyo Chabeda Thesis Title: Immunogenic assessment of plant-produced Human papillomavirus type 16 chimaeric L1:L2 virus-like particles and the production of an encapsidated therapeutic DNA vaccine candidate

Eva Chabeda holds a BSc in Biochemistry and Microbiology from Nelson Mandela Metropolitan University and a BSc(Hons) in Molecular and Cell Biology from UCT. She remained at UCT to do a MSc in the Biopharming Research Unit, upgrading this to PhD level in 2013.

Eva Chabeda's thesis describes the investigation of potentially broadly protective prophylactic virus-like particle (VLP) vaccine candidates for Human papillomaviruses (HPV), to address the high burden of cervical cancer in sub-Saharan Africa. She also describes a combination prophylactic and therapeutic vaccine that could offer both longterm protection against and therapy for existing infections, as current vaccines are ineffective in individuals with preexisting HPV infections. She used tobacco plants to produce the vaccine candidates, as plant production is more scalable than current production systems, and has great potential to reduce vaccine costs. She assessed the assembly of plant-produced VLPs and their elicitation of neutralising antibodies - a test of their potential as vaccine candidates. She also looked at the production of synthetic viruses for the delivery of a DNA vaccine which could treat women with cervical disease.

Supervisor: Dr I Hitzeroth

(Molecular and Cell Biology) *Co-supervisors:* Professor E Rybicki (Molecular and Cell Biology); Dr A van Zyl (Molecular and Cell Biology)

Evelyn Ngwa Lumngwena

Thesis Title: *The impact of HIV-1 subtype C Envelope N-glycosylation on DC-SIGN meditated modulation of DC function to facilitate transmission or enhance viral pathogenesis*

Evelyn Lumngwena holds a BSc in Life Sciences from the University of Buea, Cameroon and an MSc in Biochemistry from the University of Yaoundé I, Cameroon.

Evelyn's Lumngwena's thesis determines the role that Envelope N-glycosylation plays in influencing contact between the virus and host cells and whether changes in these interactions influence HIV-1pathogenesis. Understanding how HIV-1 infects host cells involved in transmission is important to the design of an HIV preventive vaccine. Vaccine design is likely to focus on N-glycosylated Envelope, as N-glycans are very important in activating an effective anti-HIV immune response. Escape from immune responses sometimes involves the loss or gain of an N-glycan, which can impact Envelope function and thus viral fitness. Evelyn Lumngwena identifies N-glycan sites found on Env

that affect Envelop functions, such as cell entry, binding to dendritic cells and transinfection of CD4+ cells. She also shows that specific Env N-glycans can stimulate dendritic cells to release IL-10, which suppresses the development of immune responses required for viral clearance. Therefore, by weakening the immune response, Envelope can increase the likelihood of viral survival during HIV-1 transmission. This could have important ramifications on vaccine design if immune responses select for the introduction or loss of N-glycans that enhance Envelope function, resulting in a fitter virus and increased disease progression.

Supervisor: Dr Z Woodman (Integrative Biomedical Sciences)

*Robert Anthony Milton

Thesis Title: Regulation of transcription in Plasmodium falciparum, the causative agent of severe malaria: initial characterisation of PfTBP and PfTFIIA

Robert Milton completed his BSc(Hons) in Molecular and Cell Biology at UCT in 2012.

Robert Milton's thesis concerns the structure and function of TATA-binding protein (TBP), TBP-like protein (TLP) and transcription factor IIA (TFIIA), key proteins involved in the gene regulation of the malaria parasite Plasmodium falciparum. The work provides strong evidence for the existence of two distinct PfTFIIA protein complexes, using both bioinformatics and recombinant-protein expression strategies to explore the structure and function of these key gene-regulatory molecules. In vitro DNA-binding data confirms the in silico predictions of PfTBP/PfTLP -nucleoprotein complexes that are architecturally distinct from such complexes formed using the human protein orthologs. Overall, the work represents a first step towards understanding important aspects of crucial gene regulatory control steps in P. falciparum and gives first insights into Plasmodium-specific gene regulatory features; providing a solid foundation for further investigations into this crucial aspect of malaria biology. Robert Milton's thesis proposes that these architectural differences, the demonstrated PfTBP and PfTLP in vitro interactions with PfTFIIA, together with the extremely high levels of amino acid sequence divergence seen in these protein orthologs, provide a rational justification for further exploration of these molecules as targets for novel antimalarial drug development.

Supervisor: Dr T Oelgeschläger (Molecular and Cell Biology)

In Ocean & Atmosphere Science: Thulwaneng Brilliant Mashifane Thesis Title: Shelf biogeochemical interactions and feedback processes in the Benguela upwelling system

Thulwaneng Mashifane has BSc and BSc(Hons) degrees from the University of Limpopo, and an MSc in Applied Marine Sciences from UCT. His doctoral work emerged as a result of participation in training and capacity-building research cruises under the SPACES science partnership between Germany and South Africa.

Thulwaneng Mashifane's thesis aims to understand and advance knowledge on biogeochemical interactions in the Benguela upwelling system. The ROMS and NEMO ocean models are used to understand the implications of nitrogen loss and oxygen minimum zones in biogeochemical cycles. Through the ocean models, the study shows that nitrogen loss through denitrification results in excess phosphate release in coastal Benguela waters, which is transported into the South Atlantic. Low nitrogen fixation rates contribute to the excess phosphate in coastal waters. The study also reveals that the Benguela coastal waters contribute significantly in carbon and biogenic silica export due to increased diatom ballasting. Increased silicate dissolution in Benguela surface waters is predicted to result in silicate as a limiting nutrient with warming. This is expected to change the phytoplankton community structure, with implications for primary production and fisheries.

Supervisor: A/Professor M Vichi (Oceanography) Co-supervisor: Dr HN Waldron (Oceanography)

In Physics:

*Elbasher Mohamed Elbasher Ahmed Thesis Title: *Axial segregation of granular flows in rotating drums*

Elbasher Ahmed completed his BSc and BSc(Hons) qualifications at the University of Khartoum and his MSc (Physics) at Stellenbosch University.

Currently two competing theories offer descriptions of the axial segregation process encountered in rotating drum flows. The first argues that transient travelling waves seed the early stages of axial banding and a slow logarithmic coarsening of the bands. Unfortunately, this approach lacks a physical and practical connection to real world applications and the many industries that employ rotating drums. A more physical (and intuitive) approach argues that friction ultimately drives an axial diffusion process, which results in the well observed banding; however, it cannot predict the well-observed band coarsening and does not work for fill levels less than half, which are typical of industrial systems. Favouring the friction-based approach, Elbasher Ahmed extends it by incorporating Bagnoldian constitutive relations for the stress coupled with higher order expansions of the axial gradient operator. Numerical solutions and nuclear imaging measurements via Positron Emission Particle Tracking validate the new model with the familiar (and expected) patterns of banding, which eventually coarsen to super-stable bands for the long-time evolution of the segregation process at all fill levels.

Supervisor: Professor I Govender (Chemical Engineering)

Judith Magdalena Alcock-Zeilinger Thesis Title: *Symmetry implications for Wilson Line Correlators in QCD at high energies*

Judith Alcock-Zeilinger holds a BSc in Mathematics and Applied Mathematics, and a BSc(Hons) in Applied Mathematics from UCT. She joined the Department of Physics as an MSc student in 2014, upgrading to a PhD at the end of 2015.

Modern particle physics asks fundamental questions about the nature

of our universe today and its history since the big bang. To do so, it probes into the realm of distances orders of magnitude shorter than the size of protons and neutrons, which make up visible matter, at the same time as it asks questions about states of matter last seen naturally about a microsecond after the big bang, when the whole universe was 100 000 times hotter than the centre of our sun. This is done experimentally at facilities such as CERN in Geneva, by colliding elementary particles at extreme energy. The mathematical tools needed to phrase the right experimental questions, and to understand nature's answers quantitatively, are abstract and mathematically sophisticated. Judith Alcock-Zeilinger's thesis provides new and powerful mathematical tools to expose and understand the behaviour of extremely fast-moving particles under the conditions created in such experiments.

Supervisor: A/Professor H Weigert (Physics)

Kgotlaesele Johnson Senosi Thesis Title: *Vector boson production with the ALICE detector*

Kgotlaesele Johnson Senosi obtained his BSc(Hons) degree from North West University, with distinction, and his MSc degree from UCT in 2013.

Kgotlaesele Senosi's thesis entails the analysis of data collected by the "A Large Ion Collider Experiment" (ALICE) at the Large Hadron Collider, located in Geneva, Switzerland, where he frequently visited. The Large Hadron Collider accelerates particles to the highest energies available in the world and is designed to make new discoveries in the field of particle physics. In particular, ALICE is designed to study relativistic heavy-ion collisions, in which a hot and dense, strongly-interacting medium, reminiscent of the conditions of the early universe, is created. Kgotlaesele Senosi's thesis focuses on the production of the electroweak boson (W) and its role in understanding heavy-ion collisions and the medium formed in these collisions. The primary goal was to understand the effect of the initial states on the production of the W-boson. The study has

been performed in proton-lead, protonproton and lead-lead collisions.

Supervisor: Emeritus Professor J Cleymans (Physics) Co-supervisor: Dr Z Buthelezi (iThemba LABS)

In Zoology:

Nicola Catherine Okes Thesis Title: *Conservation ecology of the Cape clawless otter, Aonyx capensis, in an urban environment*

Nicola Okes completed her BSc, BSc(Hons) and MSc qualifications at UCT, and began full-time study towards her doctorate in 2012.

Nicola Okes's thesis focuses on the distribution, diet and threats to otters in an urban environment - the Cape Peninsula. She further investigates whether the citizen science community in Cape Town can be used to monitor the otter population in the future. She used distribution models and dietary analyses to reveal that otters are able to live and forage in an urban environment, mostly inhabiting the interface between marine and freshwater ecosystems. She used citizen science to quantify the threats to the population and found that high conflict areas were associated with optimal habitat that had been fragmented by canalisation and urban development. In addition, toxicology of road-killed otters suggests that the otter's adaptability carries long-term health costs, in the form of bioaccumulation of contaminants in the food chain. She also proposes a monitoring program for the species that can also serve as a tool for educating the public on urban freshwater conservation.

Supervisor: Professor J O'Riain (Biological Sciences)

*Nwamaka Mary-Immaculata Uzonnah Thesis Title: Assessment of the population structure of the South African sardine Sardinops sagax using a multimethod approach and the morphological and molecular characterization of a stock-discriminating digenean parasite biotag of the genus Cardiocephaloides

Nwamaka Uzonnah is a lecturer in the University of Nigeria and holds a Doctor of Veterinary Medicine degree from that institution and a master's in Zoology from UCT. She began her PhD studies in Biological Sciences in 2013.

Nwamaka Uzonnah's thesis focuses on the assessment of the stock structure of the South African sardine population. using multiple stock identification techniques. She analyses meristic and morphometric data and infection levels by a trematode parasite biotag, hypothesised to be of the genus Cardiocephaloides, in sardine from the west and south coasts. She then applies multivariate analyses to obtain robust evidence of the presence of two semidiscrete sardine stocks off South Africa. Since multivariate analyses identify the parasite biotag as the strongest discriminator between sardine from the two stocks, she describes the morphology of the parasite and characterises it using molecular tools. This information confirms the genus and indicates that the parasite is likely C. physalis, and will enable determination of its full life cycle. Results of her study provide important information useful in the management of the South African sardine fishery.

Supervisor: Dr C Reed (Biological Sciences) Co-supervisor: Dr C van der Lingen (Biological Sciences)

Tanja Maria Francisca Nicole van de Ven Thesis title: *Implications of climate change on the reproductive success of the Southern Yellow-billed Hornbill, Tockus leucomelas*

Tanja van de Ven completed her BSc in the Netherlands and obtained BSc(Hons) and MSc degrees from Nelson Mandela Metropolitan University. Her interest in thermal physiology and behavioural ecology motivated her to join the 'Hot Birds Research Project' based at the Percy FitzPatrick Institute.

Tanja van de Ven's thesis investigates the relationship between the thermal environment and the reproductive performance of Southern Yellow-billed Hornbills in the southern Kalahari. High air temperatures during the breeding season reduce hornbill reproductive success through the impacts on parental body mass, nest provisioning rates and chick growth. These impacts are mediated by behavioural trade-offs made by parent hornbills in favour of thermoregulation. Via a thermal imaging experiment, Tanja van de Ven also discovered the capacity of the hornbill beak to efficiently offload heat to the environment. The results of this study confirm that the population of Southern Yellow-billed Hornbills in the southern Kalahari is currently under stress during hot weather events and, if the current trend of increasingly high air temperatures and unpredictable rainfall continues, this population is likely to come under pressure in the future.

Supervisor: Dr SJ Cunningham (Biological Sciences) Co-supervisors: Professor PG Ryan (Biological Sciences); Professor AE McKechnie (Zoology and Entomology, University of Pretoria)

9. FACULTY OF HUMANITIES

Acting Dean: Professor D Wardle

DEGREE OF DOCTOR OF MUSIC

In Composition: Christopher Derek Jeffery Thesis Title: South African film music: representation of racial, cultural and national identities, 1931-1969

Christopher Jeffery completed a BA Mus at the University of Port Elizabeth and an MMus at Stellenbosch University. He is a composer, and lectures composition and music technology at the University of South Africa. His PhD includes a practical component in the form of a composition portfolio.

Christopher Jeffery's thesis pioneers the historical study of South African film music, presenting a critical analysis of the film-musical representation of racial, cultural and national identities and their changes over time. He finds that African identity gradually shifts from being represented by others towards selfrepresentation but that African music and thus African identity remains othered through filmmakers' reluctance to include African music as part of their background soundtracks and limiting its use to live on-screen performance. He also finds that land rights are implicated in film music with both African resistance film and Afrikaner nationalist film staking claim musically to rural and urban spaces. Christopher Jeffery's study has implications for contemporary approaches to film musical representations of identity in both mainstream and national industry contexts. His accompanying composition portfolio - an orchestral score to South Africa's earliest surviving feature film, De Voortrekkers (1916) - explores practical solutions to addressing representing identity musically.

Supervisor: A/Professor M Bezuidenhout (South African College of Music) *Co-supervisors:* A/Professor A Haupt (Film and Media Studies); Dr M Watt (South African College of Music)

DEGREE OF DOCTOR OF PHILOSOPHY

In African Studies: Thabo Solomon Manetsi Thesis Title: State-prioritised heritage: governmentality, heritage management and the prioritisation of the liberation heritage in post-colonial South Africa

Thabo Solomon Manetsi completed his BA(Hons) and MPhil qualifications at UCT, and began part-time study towards his PhD in 2013.

Thabo Manetsi's thesis reports on post-colonial approach in heritage management in South Africa, with particular focus on state-prioritised heritage such as the liberation heritage project. Using the National Liberation Heritage Route project as a case study, his research provides in-depth understanding and analysis of the merits and de-merits of state intervention, through political and policy regimes, in heritage management. Seeking to contribute to an improvement of state policy and governance processes of heritage management in South Africa, Thabo Manetsi uses the outcomes of his study to propose an integrated management approach to heritage conservation, one that encompasses diverse representations of narratives, practices and local community involvement in heritage management.

Supervisor: A/Professor N Shepherd (African and Gender Studies, Anthropology and Linguistics)

In Education: Safia Salaam Thesis Title: Recognition of learning: a social semiotic exploration of signs of learning in jewellery design pedagogy

Safia Salaam has an MEd from UCT. Her doctoral thesis emerged from her work as the Head of Jewellery at the Ruth Prowse School of Art, where she has worked since 2004.

Safia Salaam's thesis research interrogated 'signs of learning' in jewellery design, both in threedimensional artefacts, and in the processes of production of these artefacts. Her aim was to explore these 'signs of learning' as presented within assessment practices in design-based programmes. Safia Salaam propounds a social semiotic approach which foregrounds the relationship between learning, recognition and assessment. She does that in order to make explicit the material, conceptual and social development which occurs in the process of producing three-dimensional artefacts. Doing that, she shows, in turn helps one to recognise signs of learning within iewellerv design students' submissions. Drawing on the notions of student interest and transformative engagement, her research developed and her thesis offers a framework or metalanguage to interrogate assessment practices through understanding signs of learning. She shows that a crucial aspect of that framework is the notion of materiality where the surface of artefacts, the substance and the tools of production are all considered.

Supervisor: Dr A Archer (Academic Development Programme)

Michael Walimbwa

Thesis Title: Developing proficiency in pedagogical integration of emerging technologies: an educational design research of a community of practice at Makerere University

Michael Walimbwa holds a BEd and two MEd degrees, one from each of Makerere University and the University of Cape Town. His PhD topic emerged from his teacher training experience at Makerere University where he is an academic member of staff.

Michael Walimbwa's doctoral research addresses the challenge of an increasing disjuncture between the rapid diffusion of emerging technologies among students in higher education institutions (HEIs) and the slow pace at which academic staff develop proficiency in integrating such technologies into their teaching. Based on data gathered at Makerere University in Uganda, his thesis develops design principles to build and enhance communities of practice in higher education that can enable academic staff to acquire pedagogical proficiency in teaching with emerging technologies. Using an educational design research approach, his work provides new insights into ways of leveraging existing expertise in order to create a sustainable model of professional development for academic staff to teach using emerging technologies. These insights have potential to contribute to enhancing the quality of teaching in 21st Century HEI settings, particularly those located in resource constrained environments.

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

In English Language and Literature: Daniela Franca Joffe Thesis title: "In the shadows": David Foster Wallace and multicultural America

Daniela Franca Joffe received her BA (Honours) degree in Literature from Harvard University, where she graduated summa cum laude, Phi Beta Kappa, and her master's degree in English from Oxford University. Her doctoral research at UCT, which began in 2013, was funded by the National Research Foundation.

Daniela Franca Joffe's thesis focuses on the work of American writer David Foster Wallace. She reads Wallace's fiction in relation to key political events in contemporary American history: the institutionalisation of secondwave feminism in the 1980s, the rise of multiculturalism and identity politics in the 1990s, and the turn towards rightwing nationalism after 9/11. She argues that Wallace, in an attempt to remain relevant in a time of rapid social change and shifting reader demand, incorporates politically progressive discourse into his writing, but that ultimately his texts remain lodged in a set of white, masculinist, upper middle class concerns. She concludes her thesis with a reflection on the meaning of Wallace's work in the age of Donald Trump.

Supervisor: Professor J Higgins (English Language and Literature) Co- supervisor: Assistant Professor E Strand (Lingnan University, Hong Kong)

In Historical Studies: *Thierry Jean-Marie Rousset

Thesis Title: Island bodies: registers of race and 'Englishness' on Tristan da Cunha c.1811- c.1940

Thierry Rousset has a BA(Hons) and MA from UCT. His doctorate arose from his interest in interdisciplinary and transnational frameworks.

Thierry Rousset's thesis research focused on metropolitan British representations of Tristan da Cunha. By placing Tristan da Cunha and metropolitan Britain within the same analytic field, his work traces how the shift from mercantile to industrial capitalism and the rise of modernity in the metropole led to (re) negotiations regarding who formed part of the social body of the metropole. While initially portrayed as a Romantic English rural idyll, albeit displaced into the South Atlantic, the rise of new metropolitan optics and debates regarding race, degeneration, social belonging, and bourgeois norms resulted in an increasing nativisation and concurrent racialisation of the islanders. Thierry

Rousset's thesis unpacks the polyphonic and often contradictory registers of race and Englishness in these metropolitan representations. It simultaneously unsettles and works to reconstitute the dominant lenses through which the island has previously been analysed.

Supervisor: A/Professor L van Sittert (Historical Studies)

In Linguistics:

Dorothy Pokua Agyepong Thesis Title: 'Cutting' and 'breaking' events in Akan

Dorothy Agyepong holds BA (Linguistics and French) and MPhil (Linguistics) degrees from the University of Ghana. She joined the School of African and Gender Studies, Anthropology and Linguistics at UCT in 2015 for her PhD studies. Before joining UCT, Dorothy taught Linguistics in the University of Ghana Distance Education Program.

Dorothy Agyepong's thesis explores the different types of verbs used in Akan to express events of object separation and their associated meanings. She identifies over thirty different types of such verbs which she then groups into two; CUT and BREAK verbs. Through her analysis of the verbs, she argues that the choice of one verb over another is dependent on the type of object being separated, the manner in which the separation is done and whether the separation occurs with or without an instrument. She further examines the ways in which the verbs are used with non-concrete objects to describe abstract concepts. From this she establishes that the interpretations derived from such combinations are culturally-inspired to an extent and that, crucially, people's ways of life influence how they perceive and describe every day events.

Supervisor: A/Professor H Brookes (African and Gender Studies, Anthropology and Linguistics)

In Media Studies: Danielle Loraine Becker Thesis Title: South African Art History: the possibility of decolonizing a discourse

Danielle Becker obtained a BA in Fine Art from UCT in 2006 and an MA in Art History from the University of Manchester in 2010. Since 2010 she has lectured art history and visual studies at Stellenbosch Academy, Stellenbosch University and UCT.

Danielle Becker's thesis provides an analysis of South African art historical discourse since the late twentieth century. In light of calls to decolonise the discipline, she discusses the extent to which African art and African epistemology have been included in South African art history and the institutions that support it. Through an analysis of the character of South African art historical writing, the nature of South African museums and the specific frameworks of art history curricula at South African universities Danielle Becker's thesis provides an historical description of South African art history. She argues that the legacy of a settler colonial context has heavily impacted how the discipline has been structured. She shows that strategies to transform the discipline from these origins have focused on the inclusion of previously neglected forms rather than the establishment of a new discipline focused on African epistemology.

Supervisor: A/Professor A Haupt (Film and Media Studies) Co-supervisor: A/Professor B Martinez-Ruiz (Michaelis School of Fine Art)

Alette Jeanne Schoon Thesis Title: *Remixing the tech: the digital media ecologies of the hip-hop artists from Grahamstown, South Africa*

Alette Schoon completed her BSc in Mathematics and Applied Mathematics at the University of Pretoria, a Diploma in Film and Video at Pretoria Technikon (currently Tshwane University of Technology), and honours and master's degrees in Journalism and Media Studies at the University of the Witwatersrand and Rhodes University respectively.

Alette Schoon's thesis research explored how hip-hop artists in Grahamstown's townships use and conceptualise digital technologies such as mobile phones, social media apps, secondhand computers and complex audio and image manipulation software. Excluded from employment and opportunities for study, she shows that the young people who were the focus of her study nevertheless conceptualised themselves as productive entrepreneurs and committed students through their digital media practices. She describes how, as hip-hop artists, they come together in backyard bedrooms to combine or "remix" devices and platforms to craft innovative solutions in the face of material and infrastructural constraints such as expensive internet and frequent breakages. Alette Schoon uses her research findings to demonstrate that these youngsters' digital media ecologies are integrated into a local hip-hop culture that resists violent nihilism.

Supervisor: A/Professor M Walton (Film and Media Studies) Co-supervisor: A/Professor A Haupt (Film and Media Studies)

In Music:

Cara Lebohang Stacey Thesis Title: *The Makhweyane bow of Swaziland: music, poetics and place*

Cara Stacey is a musician and researcher who plays southern African musical bows. She has an MMus in Musicology from Edinburgh University and an MMus in Performance from the School of Oriental and African Studies, University of London. Her PhD research focuses upon bow music in Swaziland.

Cara Stacey's thesis investigates how contemporary performers of the Swazi gourd-resonated bow, the makhweyane, create music. She explores the musical, technical, and social parameters engaged when creating new repertory – the myriad invisible spectres to whom players play and for whom players compose – and the shape that new, resilient makhweyane sounds are taking. The thesis extends David Rycroft's musicological analysis of the 1960s and 1970s to include an investigation into current dialectics between individual notions of creative innovation and musical memory, and the national cultural imaginary. Through gathering oral testimony, undertaking musical analysis, and using practice-based methodologies, Cara Stacey's research explores the makhweyane as a prism for Swaziness, for learning and storytelling, for the imagination and remembering, and for musical innovation.

Supervisor: Dr S Bruinders (South African College of Music

In Psychology:

Ridwana Sadeck Hassim Timol Thesis Title: *The relationship between elevated night-time glucocorticoid activity and dreaming: a perspective on sleep-dependent memory consolidation*

Ridwana Timol has BA, BA(Hons) (Psychology) and MA (Psychological Research) degrees, all from UCT.

Ridwana Timol's doctoral research investigated relationships between corticosteroid exposure, sleep organisation, sleep-dependent memory processing, and dream content in order to examine the neuroanatomical foundations of those relationships. The work was organised in three studies. Studies one and two showed that, relative to healthy controls, corticosteroid-exposed individuals (that is individuals either being treated for asthma or who had been exposed to a single Prednisone dose) had elevated night-time glucocorticoid activity and disrupted sleep organisation. These two studies also showed that glucocorticoid activity had an indirect influence on sleep-dependent memory processing by disrupting the organisation of SWS and of REM sleep, and that it also influenced dream content. Study three found significantly smaller hippocampal volume in asthmatics relative to controls. In summary, the thesis shows that findings about asthmatics' hippocampal volume data, as well as their patterns of night-time cortisol and sleep disruptions, suggest that further investigation is warranted into the implications of subtle neural dysfunction and consequent atypical brain development on cognitive function and quality of life in corticosteroid-exposed individuals.

Supervisor: A/Professor KGF Thomas (Psychology)

In Social Anthropology: Anna Ruth Versfeld Thesis Title: Intra-occurrence and health impactors: tuberculosis, substance use and treatment in Cape Town, South Africa

Anna Versfeld completed her BSocSc, BSocSc(Hons) and MSocSc degrees at UCT. She started studying towards her PhD as a David and Elaine Potter Fellow in 2013. She has worked in the non profit sector in conflict resolution, youth development and public health since 2007.

Anna Versfeld's doctoral research comprised а social anthropological exploration of how and why tuberculosis and substance use frequently manifest together in Cape Town; and what the ramifications of this are. Drawing on a year's ethnographic research in two sites, an in-patient tuberculosis hospital and a substance use treatment centre affiliated to a tuberculosis clinic, she develops an ethnographically grounded concept, "intra-occurrence". This describes the dynamic interaction between factors. conditions and contexts that shape health experiences, understandings and responses. She shows how, in an intra-occurrence, symptoms are masked and clear lines of cause and effect in illness and treatment are obfuscated to the extent that sufferers may not recognise their own poor health. Moreover such intra-occurrences lead to health providers having to make decisions in and through doubt. Anna Versfeld's thesis further demonstrates that the need for awareness of how moral frameworks materialise and take on explanatory force in institutional responses.

Supervisor: Professor FC Ross (African and Gender Studies, Anthropology and Linguistics)

Co-supervisor: Dr H Macdonald (African and Gender Studies, Anthropology and Linguistics)

In Social Development: Karl-Peter Haussler Thesis Title: Leadership in Africa: a hermeneutic dialogue with Kwame Nkrumah and Julius Nyerere on equality and human development

Karl-Peter Häussler holds a Diploma in Business Administration from the Fachhochschule des Heeres Darmstadt, Germany and a BSocSc(Hons) and MSocSc in Social Planning and Administration from UCT. His work in Africa over twenty years, in social and political development and with young leadership training programmes, generated the questions his PhD study has addressed.

Karl-Peter Häussler's study deals with leadership and 'humanness' through comparing two African leaders' perceptions of human equality: that of Kwame Nkrumah, first president of Ghana, and Julius Nyerere, first president of Tanganyika (later Tanzania). Leadership is a key issue for political, economic and social development as much in Africa as worldwide. Half a century after the independence of most African countries, poverty is the daily experience of the majority of Africa's people. Widespread criticism about present political leaders, their leadership capacity and their 'delivery' of goods and services to reduce poverty prompted Karl-Peter Häussler's study on the leadership experiences of Nkrumah and Nyerere. He explores the relevance of their respective perspectives for contemporary societies. Using critical hermeneutics as a method, Karl-Peter Häussler's thesis provides new insights for our understanding of Nkrumah and Nyerere and their relevance to Social Development.

Supervisor: A/Professor V Taylor (Social Development)

In Sociology:

Vincent Mduduzi Zungu Thesis Title: *The socio-economic implications of conversion from commercial agriculture to private game farming: the case study of Cradock, a small town in the iNxuba Yethemba Municipality, Eastern Cape Province, South Africa*

Vincent Zungu holds an MSc in Geography and Environmental Sciences from the University of KwaZulu-Natal. He has worked in the UCT Environmental Evaluation Unit on various environment related issues. He began work on his doctorate in 2009.

Vincent Zungu's thesis focuses on the socio-economic implications of commercial farmers' conversion of their farms from agriculture to private game farming. Focusing on that process in Cradock, Eastern Cape, he investigated the effects of such a conversion on the socio-economic conditions of black African and Coloured township people who have, directly or indirectly, depended on commercial agricultural production for many decades. His study draws attention to three areas of impact: on employment (both informal and formal); on off-farm activities; and on a range of material supplies of farm resources. Through consideration of these three areas of impact Vincent Zungu's research has been able to discern and describe the socio-economic effect that such farm conversions have had on the people residing in the townships of Cradock.

Supervisor: Professor L Ntsebeza (African and Gender Studies, Anthropology and Linguistics; and DST/NRF Chair in Land Reform & Democracy in South Africa)

10. FACULTY OF ENGINEERING & THE BUILT ENVIRONMENT

Dean: Professor A Lewis

DEGREE OF DOCTOR OF PHILOSOPHY

In Architecture & Planning: Tarryn Nicole Kennedy Paquet Thesis Title: On urban fear: privilege, symbolic violence, topophobia: the everyday experiences of middle-class women in Secunda, South Africa

Tarryn Paquet completed her bachelor's degree in Town and Regional Planning through the University of Pretoria. After obtaining an MA in Urban Geography from Stellenbosch University, she joined UCT as a full-time PhD candidate and completed the SANPAD Research Capacity Initiative programme.

Tarryn Paquet's thesis aims to critically assess how topophobia (spatial fear/hate) shapes the public realm, in particular the public realm most often used by white, privileged, middleclass. South African women. Lefebvre's theories on "terrorist societies" are used to understand symbolic and other forms of violence that undermine opportunities for socio-economic, political, and spatial transformation in South Africa. The work makes use of feminist ethnographic research methods and discourse analyses as part of an inductive and iterative research process. She situates herself in her research by drawing on multiple insider standpoints. Finally, research findings highlight various forms of symbolic violence (including white privilege, codes of 'respectability', consumerism, fat talk, regressive gender role, and upholding spatial segregation through symbolic boundaries) that need to be addressed if we hope to promote more just and inclusive urban planning outcomes.

Supervisor: A/Professor T Winkler (Architecture, Planning and Geomatics)

In Chemical Engineering: Marc Barry Brighton Thesis title: Tracing particle movement for simulation of light history and algal growth in airlift photobioreactors using Positron Emission Particle Tracking (PEPT)

Marc Brighton completed a BSc in Chemical Engineering at UCT. Following initial registration for a master's degree, his postgraduate work was upgraded to a PhD.

Marc Brighton's thesis uses positron emission particle tracking (PEPT) to investigate the trajectory of fine particles representing algal cells through the airlift photobioreactor. The work integrates these trajectories with light attenuation in the reactor to develop an instantaneous light history. Combining light history into the model of microalgal growth, a microalgal growth simulation model is achieved that is responsive to reactor culture conditions. Marc Brighton developed small neutrally buoyant Gallium-68 labelled tracers to represent the algal cell and used these for PEPT analysis of the airlift, varying geometry and operating conditions. Characterisation vielded classic indicators as well as detailed 3D particle motion, providing new insights into light cycling and fluid conditions. This enabled the novel approach of using the light experienced by an individual cell in the algal growth simulation. A new building block for the improved efficiency of microalgal systems towards bio-based products for CO2 cycling is thus provided.

Supervisor: Professor STL Harrison (Chemical Engineering)

Colleen Jackson Thesis Title: SiC and B4C as electrocatalyst support materials for low temperature fuel cells

Colleen Jackson has a BSc Engineering and MSc in Chemical Engineering from UCT. Her doctoral research was part of a Newton Advanced Fellowship partnership between UCT and the University of Southampton (UK).

Colleen Jackson's thesis explores the use of silicon carbide and

boron carbide as support materials for platinum nanoparticles with the aim to develop more active and more durable catalysts for application in renewable electricity generation in fuel cells through the oxygen reduction reaction. The use of advanced characterisation methods based on high energy X-rays have enabled her to bring together results from catalytic performance testing, theoretical modelling and fundamental kinetic studies. Through this very systematic approach, Colleen Jackson developed an in-depth understanding of how the electron transfer between platinum nanoparticles and boron carbide has a large influence on the adsorption of intermediate species in the oxygen reduction reaction. This in turn led to higher performance of the boron carbide based material compared to traditional catalysts. The result is a study that provides important insights and contributions towards the understanding of metal support interactions and the possibility to exploit these for novel rational catalyst-by-design approaches for more active and durable electrocatalyst.

Supervisor: Dr P Levecque (Chemical Engineering)

Co-supervisors: A/Professor D Kramer (University of Southampton, UK) *Co-supervisor:* Professor A Russell (University of Southampton, UK)

In Civil Engineering: Ritesh Rao Rama Thesis Title: Proper orthogonal decomposition with interpolation-based real-time modelling of the heart

Ritesh Rama holds a BEng(Hons) degree in Civil Engineering from the University of Mauritius. In 2011, he joined UCT for an MSc in Engineering, before starting full-time study towards a PhD in the Department of Civil Engineering and Centre for Research in Computational and Applied Mechanics

Ritesh Rama's thesis lies in the domain of cardiac modelling. The aim of his research is to use a mathematical-based approach to tackle resource expensive simulations of the human heart. Current heart simulation tools require using supercomputers, with the number of CPU usage close to 200 CPUs for a calculation time ranging from 1 to 50 hours. To solve this problem, a mathematical procedure called the Orthogonal Decomposition Proper with Interpolation is employed. The latter consists in first creating a detailed database of pre-computed heart models from different patients. From there, the data of the database is compressed and an interpolation is carried out. In order to visualise the solution, the interpolated data is then expanded. An analysis of the solutions shows that simulation time can be reduced dramatically. A simulation time of 0.001s per calculation step was achieved using a desktop computer machine. The error of the results was within acceptable ranges.

Supervisor: Dr S Skatulla (Civil Engineering) Co-supervisor: Professor D Reddy (Mathematics and Applied Mathematics)

In Electrical Engineering: Doreen Agaba Thesis Title: System design of the MeerKat l - band 3D radar for monitoring near earth objects

Doreen Agaba has a BSc (Physics/Maths) with Education from Mbarara University of Science and Technology in Uganda, as well as an honours degree and MPhil in Electrical Engineering, both from UCT. She completed her doctorate as part of the Radar Remote Sensing Group in Electrical Engineering at UCT.

Doreen Agaba's thesis is a system design for a radar that uses a highpower transmitter located in Cape Town and the MeerKAT radio telescope receivers (64 antennas), a Square Kilometre Array precursor. The main purpose is to perform observations in which space debris and potentially hazardous asteroids can be detected, tracked and imaged. Using theory and simulations, the radar system parameters chosen are tested and validated so as to ascertain suitability. The bistatic, multistatic and single input multiple output (SIMO) radar configurations are evaluated and compared. Requirements for multi-beam tracking and beamforming are given based on the receiver digital back end. Data from such a radar, upon completion is a contribution towards a constantly updated space object database, especially from the Southern hemisphere where such instruments are lacking. It also improves understanding of the space environment, particularly in the design and implementation of debris removal/mitigation mechanisms.

Supervisor: Professor M Inggs (Electrical Engineering)

*Abdullah Algafsh

Thesis Title: *Full and compact SAR polarimetry: calibration and effect of penetration*

Abdullah Algafsh holds Master of Science in Electrical Engineering from University of Cape Town, South Africa. He joined the School of Electrical Engineering at UCT in 2013 for his master's and PhD studies. Before joining UCT, he worked as a researcher in King Abdulaziz City for Science and Technology in Riyadh, Saudi Arabia.

Abdullah Algafsh' s thesis focuses on the full and compact synthetic aperture radar polarimetry for both calibration and effect of penetration using multiple corner reflectors. He used three radar frequencies which are L-, X-, and P-band to investigate the difference between fully and compact polarimetric SAR sensors. He starts by investigating the selection, design, manufacturing, and deployment of the corner reflectors on the field for data collection. He then used them for the fully and compact polarimetric calibration. He extends his research to measure the penetration of P-band signal on vegetation, as well as the polarimetric degradation of triangular trihedral corner reflector immersed in vegetation.

Supervisor: Professor M Inggs (Electrical Engineering) Co-supervisor: Dr A Mishra (Electrical Engineering)

Olurotimi Olakunle Awodiji Thesis Title: Integration of renewable energy into Nigerian power systems

Olurotimi Awodiji holds a MEng degree in Electrical Engineering from Abubakar Tafawa Balewa University, Bauchi, Nigeria and joined the Department of Electrical Engineering of UCT in 2013 for his PhD studies after working as a Consultant Engineer for the Federal Government of Nigeria.

Olurotimi Awodiji' s thesis focusses on improving the electricity generation in Nigeria by the integration of variable renewable energy into the grid. He starts by carrying out the assessment study of the commercial development of wind energy in some selected locations in Nigeria by using historical wind data to determine the extractable amount of wind for the purpose of electricity generation. The results are used to classify the different locations accordingly and to calculate the amount of available wind power with the siting of a wind farm in these locations. His research established that wind energy is available for commercial development in Nigeria, and if properly harnessed for the generation of electricity, could bridge the gap between demand and supply of electricity in the country.

Supervisor: Professor KA Folly (Electrical Engineering)

Leslie David Borrill

Thesis Title: *Duality derived topological model of single phase four limb transformers for GIC and dc studies*

Leslie Borrill completed both HND and Mdip Tech at the Cape Peninsula University of Technology, and an MSc at Stellenbosch University. He began fulltime study towards his PhD in 2014 while working as a senior electrical design engineer at Eskom.

Leslie Borrill's thesis develops a topologically correct duality derived, equivalent circuit model of a four limb single phase transformer for use in slow transient studies of phenomena such as geomagnetically induced and direct currents. The application lies in its representation of large electrical power transformers in power system network studies. The work explored the physical saturation response of three transformers in dc bias induced, deep magnetic saturation. Standalone single phase scalemodel transformers and a three phase transformer bank configuration were tested. Substantial magnetic core flux mapping revealed the response of non-step lap core joints in saturation. This led to recommendations for future transformer specifications in research projects. A utilisation factor for transformer non-step lap core joints was developed to assess the effective core joint area for unevenly stacked cores. This work led to the desired model and a practical approach for measuring the component parameters.

Supervisor: Professor CT Gaunt (Electrical Engineering)

Bessie Malila

Thesis Title: Architecture of a cognitive non-line-of-sight backhaul for 5G outdoor urban small cells

Bessie Malila completed a BSc (Hons) in Electrical Engineering at the University of Zimbabwe in 2000, and an MSc(Eng) at UCT in 2012, and began full-time study towards a PhD in 2013.

Bessie Malila's thesis explores the use of millimeter wave (30-300GHz) wireless technologies under non-lineof-site conditions to connect outdoor urban small cellular base stations to core networks via existing roof- mounted aggregation sites, to achieve very high data rates in 5G cellular systems. Existing solutions have capacity, coverage and cost limitations. Bessie Malila's thesis proposes schemes that use analytical models, simulations and experimental work to determine the quality of the radio signals on the street-to-rooftop backhaul links and the ability to meet current and future small cell backhaul requirements. The results obtained show that reliable multiple non-line-of-sight links can be achieved using device intelligence to guide radio signals along the propagation path. Furthermore, the novel point-tomultipoint (PtMP) architecture is found to be more energy efficient than existing architectures.

Supervisor: A/Professor O Falowo (Electrical Engineering) Co-supervisor: Mr N Ventura (Electrical Engineering)

Lerato Jerfree Mohapi

Thesis Title: A domain specific language for facilitating automatic optimization and placement of parallel SDR patterns into heterogeneous computing architectures

Lerato Mohapi has a BSc(Eng) from the National University of Lesotho (NUL) and an MSc(Eng) in Electrical Engineering from UCT. He has worked in industry at the iThemba LABS research facility in Somerset West and has also taught several electrical engineering courses at the University of Cape Town.

Lerato Mohapi's PhD thesis presents a domain-specific language (DSL) for facilitating the development deployment of and parallelised software defined radio applications into heterogeneous computing architectures. Using this DSL, radio experts are provided with an intuitive parallel programming toolset for these hybrid architectures. These hybrid architectures are composed of graphics processing units, multi-core central processing units, and field programmable gate arrays. This DSL and its compiler framework allows for a dataflow model of computation suitable for SDR-specific computations, with automatic generation of parallel execution models, and performance tuning and profiling of these applications. The results of this thesis is a parallel programming framework which alleviates the complexities involved in efficiently utilising heterogeneous computing architectures in software defined radio systems including Radar and telecommunications.

Supervisor: Dr S Winberg (Electrical Engineering) Co-supervisor: Professor M Inggs (Electrical Engineering)

Didacienne Mukanyiligira Thesis Title: *Virtualization of multicast services in WiMAX networks*

Didacienne Mukanyiligira has a BSc from Kigali Institute of Science and Technology (KIST), currently University of Rwanda (UR), and an MSc from Huazhong University of Science and Technology (HUST) in China. She has been an academic staff member at the University of Rwanda in the Department of Computer and Software Engineering since 2010.

Didacienne Mukanyiligira's thesis aims to model a multicast service virtualization framework that enables the interchangeability of multicast services from multiple network operators. The resource sharing from multiple network operators were implemented in heterogeneous networks without the consideration of multicast services, and the same traffic could be sent to multiple networks simultaneously. This work has brought the multicast services virtualization model to efficiently utilise bandwidth resources by selecting the virtual network on which to send the traffic. The work also proposed a new equation of throughput estimation which was used in the model solution. The model has proven better performance which leads to the efficient utilisation and better network throughput.

Supervisor: Dr A Murgu (Electrical Engineering)

Joyce Bertha Mwangama Thesis Title: *Infrastructure sharing of 5G mobile core networks on an SDN/NFV platform*

Joyce Bertha Mwangama received a BSc degree in Electrical and Computer Engineering and a MSc in Electrical Engineering from UCT in 2008 and 2011 respectively and 2012, she began studying towards a PhD in the Centre for Broadband Networks.

Joyce Mwangama's doctoral research investigates the infrastructure sharing of mobile network operators in 5th Generation architectures to reduce costs of network equipment acquisition and operational expenditure. The primary goal

of the research was to design, implement and evaluate the viability of data centre and cloud network infrastructure as an alternative to expensive dedicated network hardware. More specifically, the core question addressed by this thesis is how virtualisation of network functions in a shared infrastructure environment can be achieved without adverse performance degradation. A Shared Infrastructure Management Framework was designed and implemented for this purpose. This Framework was further enhanced for performance optimisation of network functions and the underlying physical infrastructure. A testbed was developed that is readily re-creatable and based on open-source software.

Supervisor: Mr N Ventura (Electrical Engineering)

Babatunde Samuel Ogunleye Thesis Title: *WiMAX spectrum virtualization and network federation*

Babatunde Ogunleye has a BEng in Information Communication Technology from the Covenant University Ota, Nigeria and an MSc in Wireless Communication Systems from the Brunel University London UK.

Babatunde Ogunleye's thesis develops new frameworks to improve the management of the radio frequency broadband spectrum in wireless networks particularly for the Worldwide Interoperability for Microwave Exchange (WiMAX) technology. The new approaches are based on spectrum virtualisation and network federation concepts. To achieve his thesis objectives, two novel architectures for spectrum virtualisation and network federation are proposed for WiMAX. The proposed WiMAX spectrum virtualisation architecture introduces a novel entity known as the Virtual Spectrum Hypervisor (VS-Hypervisor) responsible for spectrum management and virtualisation. The proposed WiMAX network federation architecture, enables the cooperative existence of multiple WiMAX basestations having virtualisation capabilities and overlapping cellular coverage areas for the purpose of sharing spectrum resources. The federation architecture

describes a novel network control plane known as the Virtual Spectrum Exchange Locale (VSEL). The VSEL via the VS-Hypervisor negotiates the exchange of spectrum between federated base-stations to match the spectrum needs per time. Results obtained validates the efficacy of these frameworks and this proposed network framework would help network operators optimise the radio networks.

Supervisor: Dr A Murgu (Electrical Engineering)

In Energy Studies:

Holle Linnea Wlokas Thesis Title: Implementing community renewables: institutional work in South Africa's renewable energy procurement programme

Holle Wlokas holds a Diploma (Master's) in Political Science from the Free University Berlin, Germany. Her doctoral work results from research experiences at the Energy Research Centre at UCT, where she served as an academic staff member from 2010 to 2014.

Holle Wlokas' thesis analyses implementation of large-scale the renewable energy projects in local communities in South Africa. The research focuses on the community benefit requirements stipulated by the Department of Energy in the Renewable Energy Independent Power Producer Procurement Programme. The thesis explores the efforts of public and private actors in shaping institutions for the implementation of large-scale wind and solar projects. The analysis draws on interview data collected in twelve renewable energy projects. The findings reveal that government and companies dominate institutional work in the stages of policy formulation and project development. Local communities turn out to be the least informed and capacitated actor of all. Industry actors strategically exclude communities from asserting their experiences, from creating collective understanding and from agreeable processes that would foster the longterm relationship between company and community. This is a shortcoming that requires urgent attention to ensure positive institutional work and developmental impact.

Supervisor: Dr B Rennkamp (Mechanical Engineering)

In Mechanical Engineering: Richard Johnathan Curry Thesis Title: Response of plates subjected to air-blast and buried explosions

Richard Curry completed his BSc(Hons) and MSc qualifications at UCT, and began full-time study towards his PhD in 2012.

Richard Curry's thesis reports the response of test plates to air-blast and buried explosions, creating a better understanding of the fundamental differences between air-blasts and buried explosions which helps protect people from events such as landmine blasts. The are many landmines affected countries in Africa, and landmines pose a significant threat to peace keepers in the region. This thesis examines the loading and response of structures subjected to explosions, focusing on the influences of the backing of explosives and the effect of burying the explosive in sand. The work developed a test technique for measuring the transient response of the structure due to the extreme loading. The inclusion of a back structure increased the impulse imparted and created greater damage within the structures, while the inclusion of sand was found to focus the loading in the plate centre, significantly altering the distribution of the damage within the plates. This work will assist designers in understanding the effects of surface mounting and burying landmine explosives on vehicles meant to protect their occupants from harm.

Supervisor: Professor GS Langdon (Mechanical Engineering)

11. FACULTY OF LAW

Dean: Professor P Andrews

DEGREE OF DOCTOR OF PHILOSOPHY

In Commercial Law: Zolani Prince Buba Thesis Title: The balancing of creditor interests in business rescue provisions of the Companies Act 2008

Zolani Buba has BSocSc, LLB and LLM degrees from UCT. His doctoral work investigates the balancing of creditor interests within the context of company insolvency, specifically where a company avails itself of recourse to business rescue proceedings.

Zolani Buba's thesis critically analyses and evaluates the manner in which the new (post-2008) company law regime balances competing interests in light of the statutory framework which views a company as a vehicle for achieving socio-economic imperatives. His thesis engages in an evaluation into how the current legislative framework allocates and re-allocates the rights of creditors as against the insolvent company seeking recourse to rescue proceedings, as well as the manner in which the same framework provides for a grading of rights between creditors. On this basis he argues that, while the statutory framework requires that a balance be struck between the rights and interests of different stakeholders during the business rescue process, an incorrect balancing of interests has the potential to undermine the ultimate objective of the legislation which is to rescue the company.

Supervisor: Professor D Davis (Commercial Law) Co-supervisor: Professor H Corder (Public Law)

Julian Paul Kritzinger

Thesis title: Commercial arbitration in cyberspace: the legal and technical requirements towards a more effective Lex Electronica Arbitralis

Julian Kritzinger has a BA (International Relations) an LLM (International Business Transactions) and a LLM (Advanced Company Law) all from the University of Stellenbosch. He also has an LLB from UNISA.

Julian Kritzinger's thesis focuses on the current lack of a legal outline that exclusively regulates online arbitration. He shows how this lacuna has led to the guidelines of the United Nations' Commission on International Trade Law (UNCITRAL)'s 'Technical Notes on Online Dispute Resolution of 2016' and the rules of traditional international commercial arbitration being used – to the extent that they can accommodate online arbitration. Due to its unique features, however, he argues that online arbitration needs an exclusive set of rules, or lex electronica arbitralis, which can deal with its legal and technical requirements, and that UNCITRAL will have to address the numerous questions that its 'Technical Notes' leave unanswered. He suggests that to be necessary despite their not comprising insurmountable challenges. Julian Kritzinger also considers the development of online arbitration in a developing country such as South Africa, and he concludes his thesis with an appeal to South African lawmakers to make provision for online arbitration.

Supervisor: Professor C Ncube (Commercial Law) Co-supervisor: Professor A Rycroft (Commercial Law)

In Private Law:

Rebecca Emiene Badejogbin Thesis Title: An analysis of the process of ascertainment and application of customary law in the formal institutions of adjudication: Nigeria and South Africa

Rebecca Emiene Badejogbin has an LLB and an LLM from the University of Jos, Nigeria, a BL from the Nigerian Law School, Lagos and an LLM (Research) from the University of Pretoria. She has been a lecturer, and is a deputy director of academics at the Nigerian Law School.

Rebecca Badejogbin's thesis focuses on the process of ascertainment and application of customary law by formal courts in Nigeria and South Africa. She identifies factors that influence how judges exercise discretion in this process and whether or not they enhance or impede the ascertainment and application of living customary law. In her qualitative research, she utilises both doctrinal and empirical methods to make her findings. She uses primary data personally obtained from the field and court records of proceedings in relevant cases heard within a fifteen-year period. She also examines the impact of the current laws and procedures that regulate this exercise. The factors she identifies are both intrinsic and extraneous to the court institution. rules and procedures. She demonstrates that these factors should be considered in policies that seek to develop measures that would enhance the ascertainment and application of living customary law in this regard.

Supervisor: Professor CN Himonga (Private Law)

*David Brian Dennison

Thesis Title: *The status, rights and treatment of persons with disabilities within customary legal frameworks in Uganda: a Study of Mukono District*

Brian Dennison obtained his BA from the University of Georgia with honours in English Literature. He also holds a Master's in Business Administration and a Juris Doctorate in Law from the University of Georgia (cum laude).

Brian Dennison's thesis concerns the status and treatment of persons with disabilities within lived environments where legal rights and status are established and contested outside of the formal legal system. His thesis includes the product of extensive desk research and fieldwork. He demonstrates the vital importance of customary legal scenarios to the status, rights and treatment of persons with disabilities. He shows that cultural rites of passage are highly significant events for establishing rights and status in contexts of marriage,

leadership, guardianship, succession and land rights. Family, clan and community members who preside over and participate in these customary scenarios take various factors and sources into consideration when determining the rights, status and treatment of persons with disabilities. Brian Dennison's fieldwork findings offer suggestions for change strategies for those seeking to improve and advance the social and legal cause of persons with disabilities in Ugandan's Mukono District and in similar settings.

Supervisor: Professor C Himonga (Private Law)

*Sarah Johanna Fick

Thesis Title: *The power of the court to grant alternative accommodation orders: an investigation into when an alternative accommodation order as a condition to the eviction of unlawful occupiers in terms of PIE would comply with the court's constitutional mandate*

Sarah Fick has an LLB and LLM from the University of Stellenbosch. Her doctoral work emerged as a result of her teaching experiences in the Department of Private Law at UCT, where she has been a member of the academic staff since 2013.

Sarah Fick's thesis aims to develop guidelines for courts in eviction matters. In South Africa, the eviction of unlawful occupiers often results in homelessness. To prevent homelessness, courts have ordered that the state provide the evictees with alternative accommodation. The courts' orders have had, and continue to have far-reaching budgetary implications and to affect the state's ability to assist others in need. Sarah Fick's thesis identifies the possible constitutional grounds for such orders. In addition, it makes recommendations regarding when and on what terms such orders should be granted to ensure that they are just towards the evictees as well as towards others in need.

Supervisor: Professor H Mostert (Private Law)

Boniphace Luhende

Thesis Title: Towards a legal framework for preventing tax revenue leakage in the upstream oil and gas industry in Tanzania: an analysis of the concepts, methods and options available in a Public Trusteeship Model of Natural Resource Holding

Boniphace Luhende holds LLB and LLM degrees from the University of Dar es Salaam, Tanzania. He currently works as an Assistant Lecturer at the School of Law of the University of Dar es Salaam.

Boniphace Luhende's thesis explores legal mechanisms for preventing loss of potential tax revenues in Tanzania's upstream oil and gas industry. He analyses the legal and political contexts within which tax revenue leakage may occur. He identifies discretionary tax incentives. tax avoidance and tax evasion as well as fiscal corruption as causative factors for tax revenue leakage. He further gives an overview of the fundamental flaws in the current tax regime and proposes corresponding remedial measures. Against the background of failure by most oil-rich countries in Africa to obtain sufficient economic benefits from the oil and gas industry, he concludes that the extraction of oil and gas resources is neither an automatic blessing nor an immutable curse. Instead, he suggests, the level of government's tax revenue depends on both the legal framework and institutional capacity to detect, prevent and penalize corruption, tax avoidance and tax evasion.

Supervisor: Professor H Mostert (Private Law) Co-supervisor: A/Professor TL Gutuza (Commercial Law)

In Public Law:

Matthew Grant Burnell Thesis Title: *Developing and applying a constitutional framework for public participation in South Africa*

Matthew Burnell has an LLB and LLM from UCT. His doctorate emerged from his experience as an environmental lawyer, where he is exposed to review applications challenging the adequacy of the public participation processes conducted during environmental impact assessments and to public participation processes conducted online.

Having identified the minimum requirements of participatory democracy prescribed by the South African Constitution, Matthew Burnell uses his thesis to propose a constitutional framework for public participation. He does that by developing principles drawn from examining the electoral process, local government, the creation of laws, administrative processes and online rulemaking. He argues that any public participation process which measures up to these principles will pass constitutional muster (whether it be it online or through a more traditional notice-and-comment public participation format). As a test case for the framework, Matthew Burnell applies it to the environmental impact assessment public participation process. He shows that the latter processes fall well short of the constitutional standard.

Supervisor: Professor H Corder (Public Law) Co-supervisor: A/Professor D Collier (Commercial Law)

Fatima Bibi Khan

Thesis Title: In chronicle exile: a critique of South Africa's legal regime for refugees in protracted refugee situations

Fatima Khan completed her BA, HED, LLB and LLM at UCT, has served as the Director of the Refugee Rights Unit, and taught undergraduate and postgraduate courses in refugee law at UCT's Law Faculty for a considerable time.

Fatima Khan's thesis research aimed to analyse the phenomenon of protracted refugee situations and its implications for the rights of refugees. Even though neither the United Nations High Commission for Refugees (UNHCR) nor the South African government has classified refugees living in South Africa as being in a protracted situation, many refugees in South Africa have been in the country for five years or longer, but with no durable solution in sight. Fatima Khan's study found that prolonged exile as a refugee is an abnormal condition, constitutes an affront to human dignity and leads to violations of many other

rights refugees have under international law and the South African constitution. Her thesis concludes that South Africa must acknowledge the protracted refugee situation as a problem and work collaboratively with the UNHCR to provide durable solutions for all affected refugees.

Supervisor: Professor D Chirwa (Public Law)

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.

VISION AND MISSION UNIVERSITY OF CAPE TOWN

Vision

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

Mission

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

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

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

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

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The University of Cape Town 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:

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- Chancellor's circle: formerly R250 000+, now R500 000+;
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We apologize for any omissions or errors. If you would like to query your donations totals, circle membership, or any other matter related to your gifts to UCT, please email giving@uct.ac.za.

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