



RESEARCH & INNOVATION REPORT

2015/16



SUSTAINABLE DEVELOPMENT THROUGH UNIVERSITY RESEARCH

In recent times humanity has been subjected to extensive anthropogenic – induced environmental difficulties. The current state of the environment is extremely vulnerable. This has substantial consequences for the well-being of humans and other species on earth. In addition, humanity faces several imperative societal problems as well, such as failing socio-economic and institutional systems. University research is central for sustainable development. However success is dependent on new ways of conducting sustainable research.

REFERENCE:

Waas, T., Verbruggen, A. and Wright, T., 2010. University research for sustainable development: definition and characteristics explored. *Journal of cleaner production*, 18(7), pp.629-636.

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It gives me great pleasure to write a foreword for the DUT Annual Research and Innovation Report: 2015 -2016.

The theme of this year's report is: sustainable development through university research and innovation. One of DUT's strategic focus areas in our strategic plan is: Building Research and Innovation for Development. We have to understand that the research we pursue should also contribute to the generation of applied knowledge which leads to innovative solutions and products that will benefit our country's socio-economic development.

The triple bottom line concept suggests that social equity, the economy and the environment should co-exist harmoniously for the benefit of our society. Socio-economic development without consideration of our environment would not sustain us. The very idea of sustainable development derives from this observation. Given our location, the primary outcomes and impact of how the triple bottom line becomes a living reality for our society must be prevalent in our city and our region, first and foremost.

As noted above, the theme of this report requires that we demonstrate our commitment to sustainable development through our research and innovation.

Sustainable development was originally defined as "development that meets the need of the

FOREWORD

BY THE VICE CHANCELLOR
& PRINCIPAL

PROFESSOR THANDWA MTHEMBU

present without compromising the need of future generations to meet their own needs" (Brundtland, 1992). Subsequently, there have been many variations to the definition. The United Nations' 17 Sustainable Development Goals (SDGs) are currently relevant for the African context. In particular, goal 8 aims to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

It is within this context that, as a University, we need to identify what our role is in accentuating sustainable development within the broader University mission of teaching and learning, research and innovation, and engagement. Sustainability is critical in all these areas as we demonstrate our responsibility to society as a University with unique capacities that could help to develop our country. We will remain committed to a number of ideals: our unwavering support for multi-, trans- and inter-disciplinary research and innovation that deal with environmental problems (including resource sustainability e.g. water, energy); our resolve to train and develop skills in our university community that will contribute to environmentally sustainable socio-economic development that will, in turn, improve the quality of life of our people, our efforts in research and innovation to lead to tangible outcomes and impacts in our city, in our region and in our country; to ensure that, in everything we do, we engage deeply with the Quad-Helix partners: government, business/industry and other organs of broader society.

As part of this drive, DUT has identified a number of research focus areas that relate to knowledge generation in the basic, applied and social sciences and in the arts. Various programmes and projects in these areas demonstrate our achievements in these fields.

Our publication profile has grown significantly over the last five years as well as our externally funded projects which, we believe, will assist us in contributing to innovative solutions. As pointed out earlier, building research and innovation for sustainable development requires purposeful efforts in multi-, inter- and transdisciplinary research in various sustainability fields like water, climate change, energy, rural, peri-urban and urban futures, peace – all of which DUT currently is or should be involved in deeper.

The importance of our Quad-Helix partners was emphasised above. We could not possibly achieve much without their support, financially and otherwise.

Stronger partnerships among these partners have to be fostered. These require formal platforms of engagement that we should establish to assist us in achieving our common goals. We hope our partners from all walks of life in the city and the region will walk side by side with us as we traverse this path of achieving the triple bottom line of environmentally sustainable socio-economic development.

A special congratulatory note to all our people (researchers, students, research technicians and managers at all levels, alumni and partners) who have been selfless and have contributed in various ways to ensure that our research and innovation profile outlook for 2016 is enhanced.

Finally, we must thank the staff of the Research and Postgraduate Support Directorate and the Editorial team for putting this collection together.





MESSAGE FROM THE ACTING DVC: RESEARCH, INNOVATION & ENGAGEMENT AND DIRECTOR FOR RESEARCH AND POSTGRADUATE SUPPORT



PROFESSOR SIBUSISO MOYO

The year 2015-2016 has seen the University grow its research and innovation profile significantly with increased publication units from 152.13 (2014) to over 235.65 in 2015. In early 2014, DUT developed its research executive strategic plan which recognised the need to create competitive and prestigious research centres and focus areas sponsored by both public and private funding sources by 2018. Part of the plan meant that there would be an initial investment as seed funding to get the established units on their feet and enable them to create capacity to participate in competitive research and innovation activities as well as compete for external funding. Between 2015 and 2016, there has been remarkable growth in research activities, increasing the pool of postgraduate students in these centres that are funded, and increased engagement internally and externally with key stakeholders by the research focus areas themselves. Although resources are concentrated within these research focus areas, we acknowledge the existence of individual researchers who do not yet belong to any research team but actively contribute to various outputs.

Research focus areas are seen as places where young, novice and emerging researchers can be mentored to develop their own niche focus areas so that they can also become established, mentor others and apply for NRF ratings. The postdoctoral forum and pool of postgraduate students form a community of emerging researchers who also contribute significantly to the university's research profile and research culture. To this end, we delineate the various research and postgraduate indicators that we are required to report on as well as others like grant acquisitions, NRF ratings,

research impact, collaborations and partnerships.

Research ethics and integrity is also one of the main focus areas that, we believe, will help our researchers carry out responsible research that protects research participants and adds value to the well-being of our communities. It also influences the research culture of the University and promotes ethical behaviour. We thank the Institutional Research Ethics Committee (IREC) for all its work and the DUT Gatekeeper's Committee (DGC) for the role they play to ensure that the institutional reputation is maintained.

The external research funding for projects has grown significantly over the period 2015 to 2016. This will be shown in the subsequent sections.

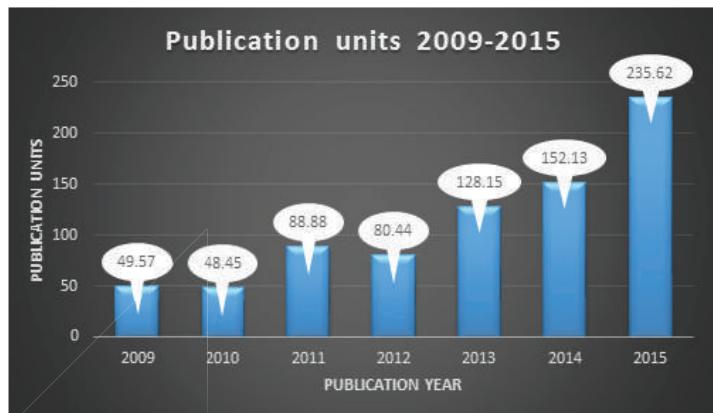
The growth in seed funding from the Technology and Innovation Agency (TIA) for projects that have an innovative and technological application capacity is also significant. We envisage that this will result in patents and spin offs. We have had at least one spin off application in the reporting year from the Faculty of Applied Sciences in Food Technology.

Research and engagement go hand in hand and the university has seen growth in both the number of collaborations through co-publications and the increase in the number of functional MoUs with key stakeholders. In addition, there are extensive regional and international collaborations.

Thank you, once again, to all our researchers (staff, students, postdocs) for your contributions and putting DUT not only on the regional platform but also on the global platform!

RESEARCH AND POSTGRADUATE SUPPORT PERFORMANCE INDICATORS

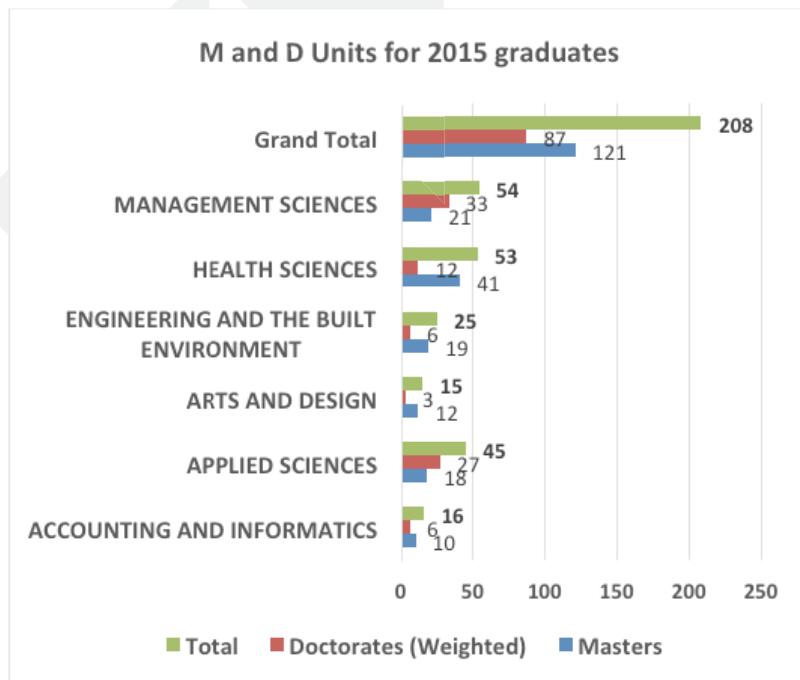
PUBLICATION PROFILE 2009-2015



The increase in publications between 2009-2015 is more than 80%. The 200 unit mark was reached in 2015 and we expect this to increase annually with the expected conducive research and innovation environment and strategic focus.

MASTERS AND DOCTORAL GRADUATION UNIT OUTPUTS PER FACULTY (2015)

The weighting for Ms is 1 unit for 1 M and for Ds it is 3 units for 1 D graduating:



RESEARCH PRODUCTIVITY PROFILE 2015 REPORTED IN 2016

The total research productivity units are expected to exceed 443.65¹ in the 2016 reporting year. This effectively would mean that DUT would have exceeded its 0.565 per FTE weighted productivity profile which is estimated to be 0.739. Despite this growth, the University needs to try and increase participation rates amongst women and particularly Black South Africans, as bibliometric analysis of DUT Research shows the need to devise strategies of attracting and building a pool of strong young Black academics as part of the active research base of the University. It is obvious that, in the funding frameworks and policy documents, the gender dimension in Science, Innovation and Technology need to be included in all engagements and internal strategies.

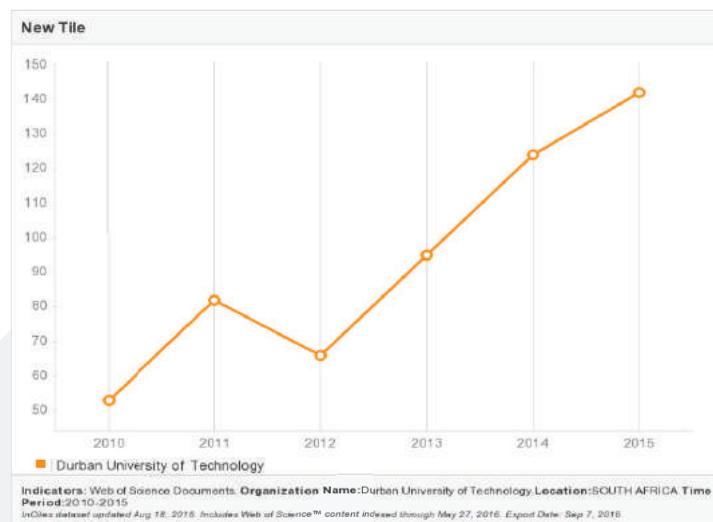
OVERALL PERFORMANCE INDICATORS

CATEGORIES	DHET TARGETS FOR UoTs	CURRENT DUT INDICATORS	MINIMUM GAP MEASURE	NEW STRAT PLAN 2019 TARGETS	MINDING THE GAP MECHANISM
Academic Staff Doctoral Qualifications	40%	21% (126)	19%	40% by 2019	Dept/Faculty Targets HR (PERFORMANCE)
Academic Staff Masters Qualifications	60%	47% (283)	13%	60% by 2019	Dept/Faculty Targets HR *minimum req.
Registered Postgraduate Students	7%	3%	4%	Enrolment plan capped. (7% by 2019)	Dept/Faculty Targets Recruitment & Marketing Supervisors Resources
Research Outputs per full time academic staff (0.565 units)	339	*443.65 (235.65 pub; 121 Mus; 87Dus)	+0.174 Diff: 104.65	300 by 2019 Target 300 Units exceeded in 2015 for 2016 Reporting!	Dept/Faculty Targets *PDPs Recruitment Strategy *Postdoc contributions

¹Awaiting DHET approval to be announced in due course and final DHET report not available at the time of writing the report.

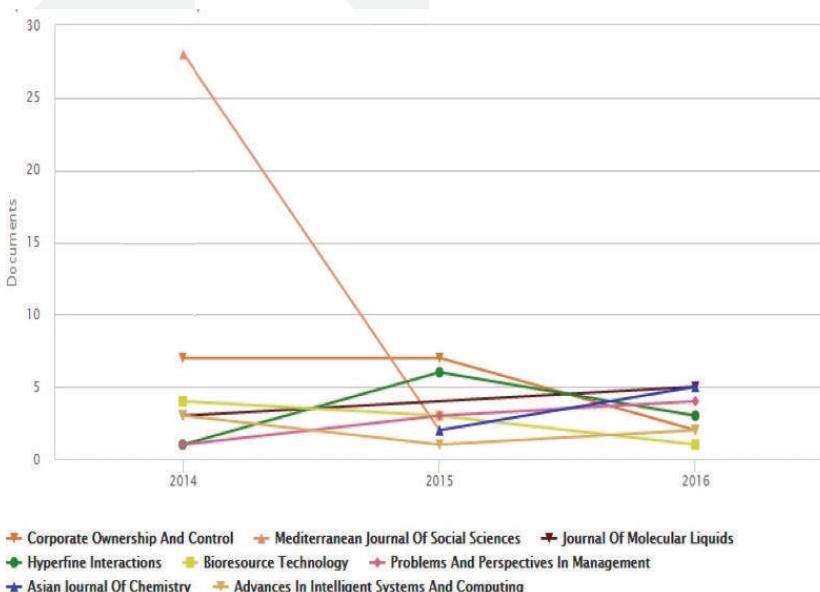
RESEARCH IMPACT AND CITATIONS BASED ON SCOPUS AND WEB OF SCIENCE RECORDS

Web of Science Cited Documents (2010-2015) – 562 (54.63% cited)



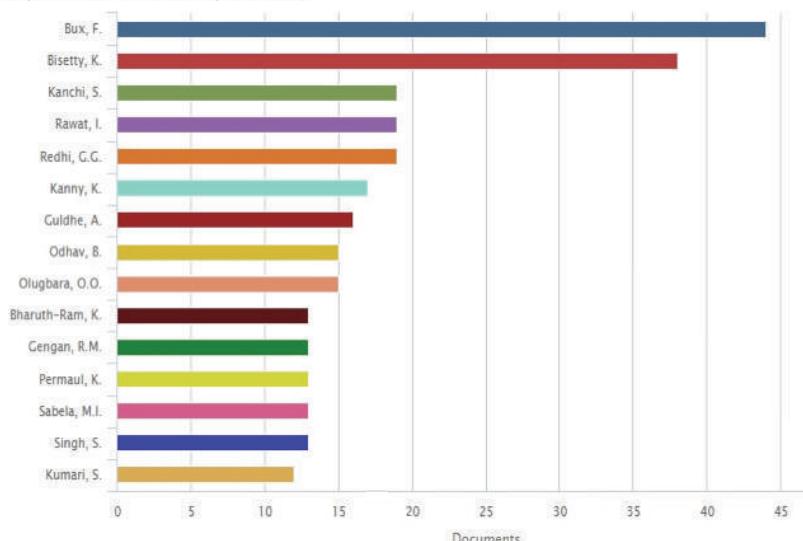
Between 2014 and 2016 there were 656 documents published with DUT affiliation through the Scopus database. The quality of journals, in which staff have been publishing from 2014 to 2016, has improved and also diversified. All these journals are peer reviewed and accredited. The table below shows a profile of journals which have a higher percentage of articles appearing. With an increase in the number of journals and predatory journals as well, staff and students are always encouraged to verify journal information before publishing according to DHET accredited lists. It must be noted that the Mediterranean Journal of Social Sciences was removed from the list of accredited journals.

Some Journal Types 2014-2016 With Higher Percentage of Documents



Authors based on 2014-2016 Scopus Records (Shows only 15 Authors at a Time)

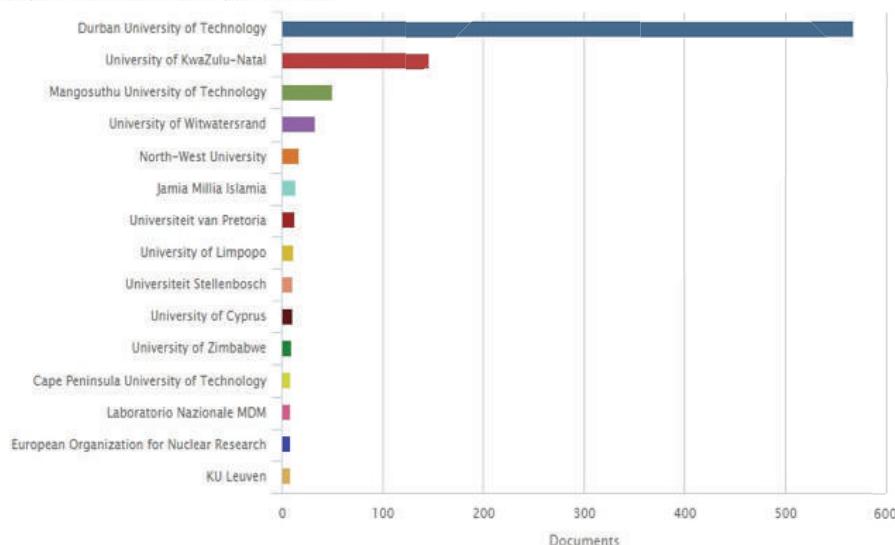
Compare the document counts for up to 15 authors



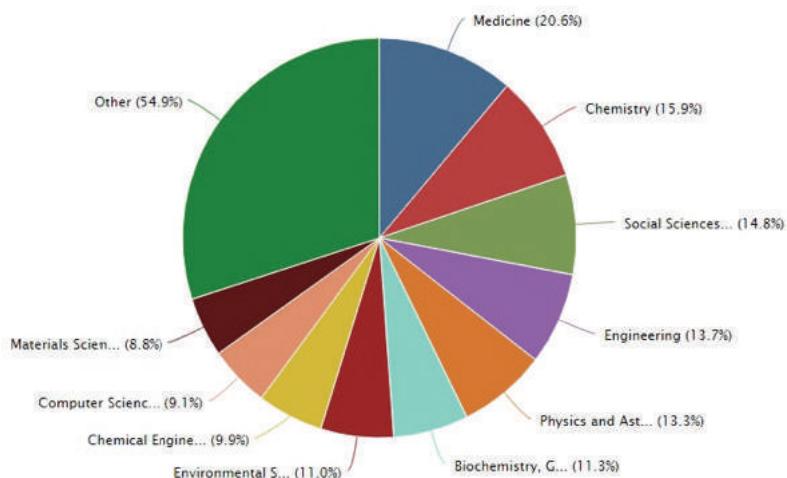
RESEARCH FOCUS AREAS AND INSTITUTIONAL COLLABORATIONS BY PUBLICATION AFFILIATION

Institutional Collaborations (2014 to 2016) Scopus Documents

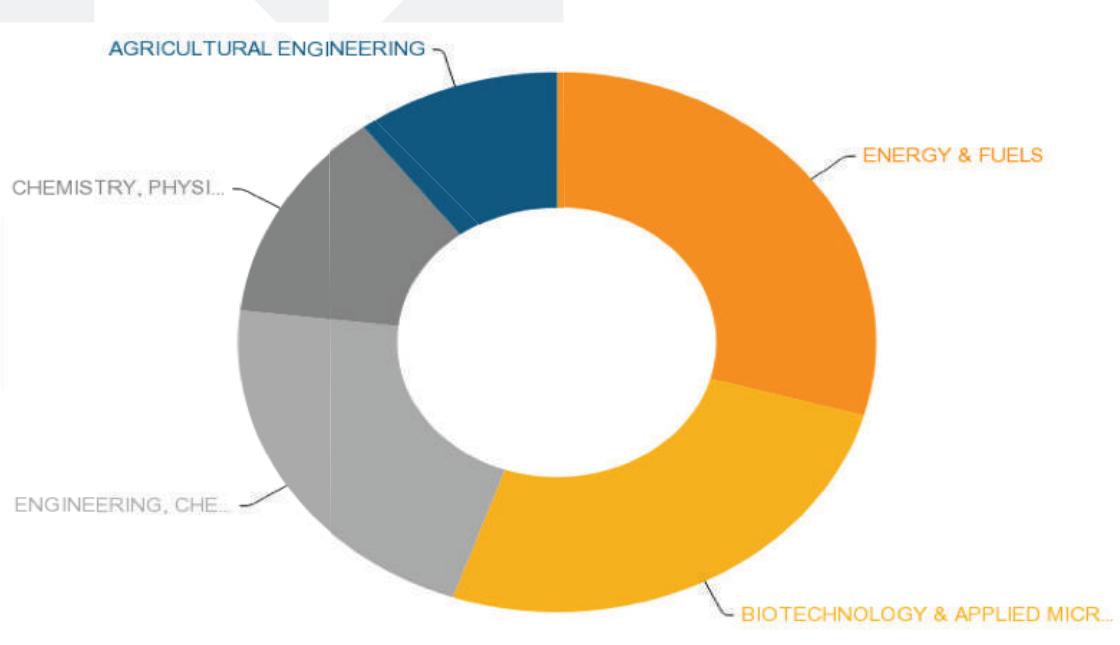
Compare the document counts for up to 15 affiliations



Scopus Documents by Subject Area (2014 to 2016)



Top Cited Research Focus Areas (2010 to 2015) – WoS Documents



Indicators: Times Cited. Schema:Web of Science. Organization Name:Durban University of Technology.Location:SOUTH AFRICA.Time Period:2010-2015
InCites dataset updated Aug 18, 2016. Includes Web of Science™ content indexed through May 27, 2016. Export Date: Sep 7, 2016.

GRANT ACQUISITIONS AND EXTERNAL FUNDING

Good quality research and innovation, by its own nature, has the ability to attract strategic funding and partnerships. It is also the quality of research staff and their outputs that play a significant role. In 2016, we have seen this indicator on grants grow and diversify beyond reliance on NRF grants only to over R76 000 000 for specific projects. The following grants are from various science councils and funders across the board including the Gates Foundation which funded one of the first projects at DUT headed by Prof TA Stenstrom, the SARCHI Chair of the Institute for Water and Wastewater Technology.

DUT Research, Innovation Funding 2016

TIA seed funding	4777500
AU/EU funding	3976079
Global foundation - HEADS	657500
HIVOS	1917994
Technology station - Mechanical Engineering	3219240
Medical research council	1491575
Water Research Council	432852.71
NRF (RPS)	41590879.36
Agricultural Research Council	1263620
CSIR/DST	2298515
SAQA	710000
EDTEA	466650
NIHSS	360000
Found. For open society	380734
STIAS	62200
RDG	7827000
GCRO	40000
UMGENI WATER	100000
ESKOM	270000
NSN FUNDING	228000
EW SETA	1298735
DST (indigenous knowledge)	3000000
TOTAL	76369074.07

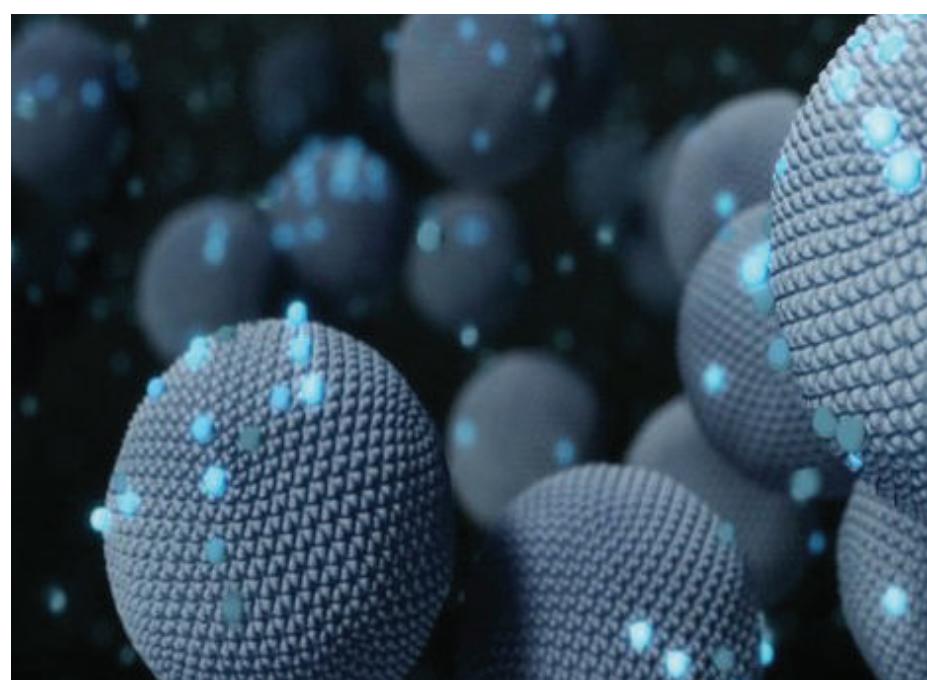
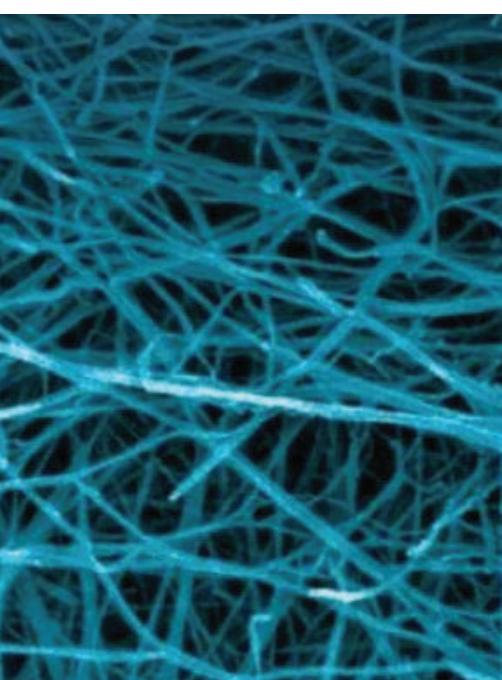
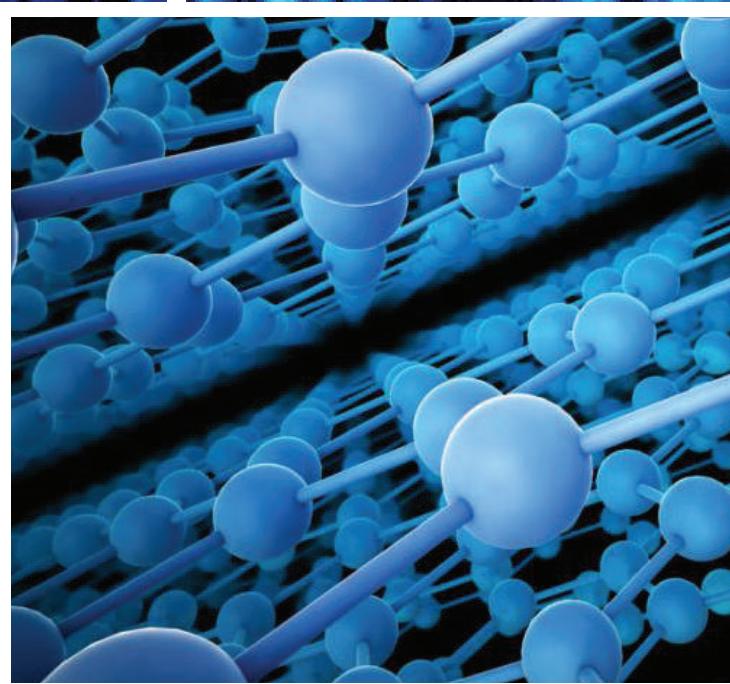
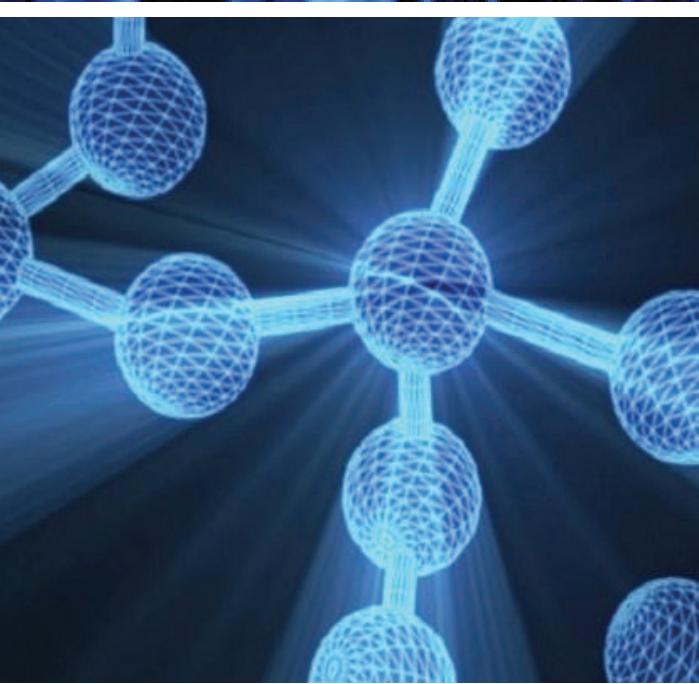
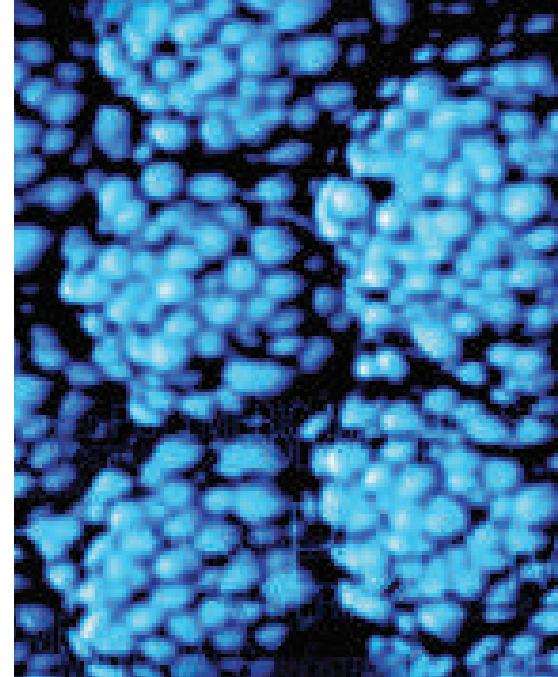
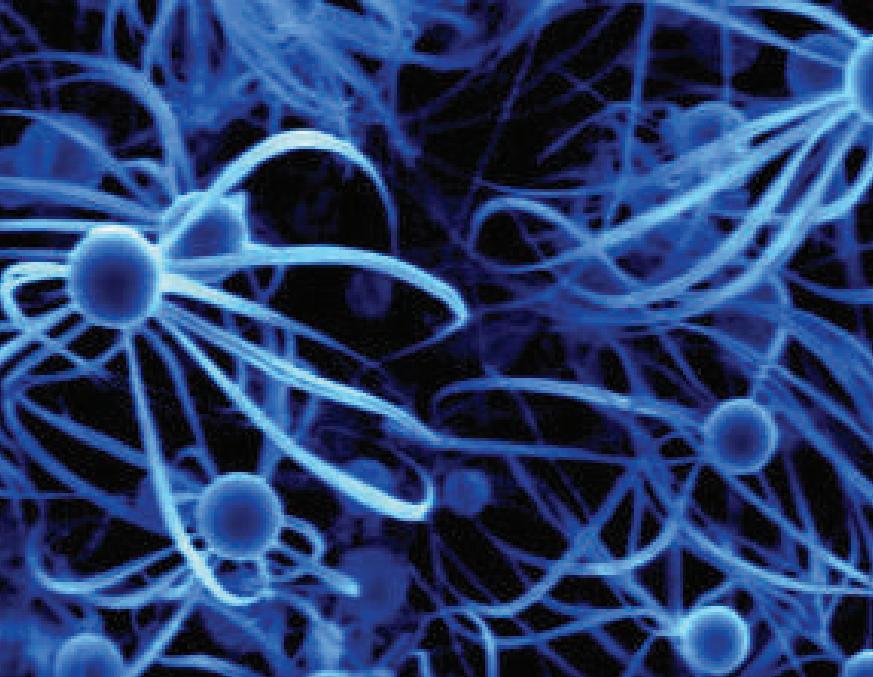






The logo features the letters "DUT" in a bold, black, sans-serif font. To the left of "DUT" is a graphic element consisting of several small, overlapping triangles in teal, red, purple, and blue. Below "DUT" is the text "RESEARCH FOCUS AREAS" in a large, teal, sans-serif font. A thin horizontal grey line is positioned below the text.

DUT RESEARCH FOCUS AREAS





RESEARCH FOCUS AREA

COMPOSITE RESEARCH GROUP (CRG)

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The Composite Research Group (CRG) under the supervision of Professor Krishnan Kanny resides within the Department of Mechanical Engineering at the Durban University of Technology.

The group essentially consists of postdoctoral fellows and postgraduate students who are pursuing either Masters or Doctoral degrees. This multi-disciplinary group hosts students with diverse backgrounds in Mechanical Engineering, Chemical Engineering, Electronic Engineering, Chemistry, and Material Science. More recently the group has hosted students from the Faculty of Health Science's Dental School as well as the Faculty of Management Science's Quality Management Department. This diversity within the group enables the group to take on a variety of industrial and scientific research challenges needing multidisciplinary solutions.

The Composite Research Group has three focuses, that is, Composites, Bio-Composites and Nano-Composites. In this regard, the group is busy with the development of smart materials, nano-sensors, nano-coatings, nano-membranes, and polymer nanocomposites for a variety of applications including aerospace and mass transit systems.

Processing, analysis and modelling of composites, biocomposites and nanocomposites are performed in-house using conventional fabrication techniques as well as high speed robotics. Mechanical and morphological analyses are accomplished using mechanical testing equipment and the state-of-the-art Thermal Analysis and Scanning Electron Microscope laboratories located at DUT. The behaviour of these materials is modelled using finite element packages and other computational software.

The Research Group also takes up the social, ethical, legal, and environmental and health related issues related to nanoscience and nanotechnology. Several such research programs are being planned. These programs will incorporate physical, chemical, biological and environmental aspects pertaining to nanoscience & nanotechnology.

The research work conducted by the group is disseminated through technical reports, conference presentations as well as peer-reviewed publications. Further, the group also has project and research collaborations with other academic and industrial partners worldwide.

CURRENT RESEARCH

The Composite Research Group's academic activities address the challenges posed by the nano revolution. Some of the focus areas are:

- Polymer Nanocomposites for Aerospace and Marine Structures
- Thermal Barrier Improvement of Aluminium-clay based engine blocks-powder metallurgy route
- High Friction Carbon-Polymer for Automotive applications
- Bio-composites and bio-polymer for medical application (Nano Ag for antibacterial application)
- Multi-directional, multi-strength composites
- Natural fiber for membrane application
- Biopolymer derived from natural source for food packing and biomedical application
- Carbon Nanotubes (CNT) based polymer composites for electrical applications
- Nano-doping in organic photovoltaic solar cells
- Eggshell derived nanomaterial for dental application
- Toxicological and safety studies of nanomaterials in Occupational Health and Safety and Environmental Management.

Students at doctoral and postgraduate level are trained in the above research areas of composites and nanocomposite materials and application. Presently, the CRG consists of 7 doctoral, 11 masters and 1 postdoctoral fellow funded by various internal and external agencies.

The CRG also hosts the International Conference on Composites, Biocomposites and Nanocomposites (ICCBN). The conference hosts more than 300 delegates including leading researchers, scientists, experts and research students from around the world. CRG plans to host the next International Conference in 2017.

COLLABORATION/PARTNERSHIPS

The CRG is actively engaged with the following academic and industrial partners and wishes to strengthen the relationship with these partners and find new scope for future project funding and mobility.

- Biocomposites International Research Network (BIRN)
- Commonwealth Scientific and Industrial Research Organization (CSIRO)
- North Dakota State University
- Durban University of Technology
- University of Alabama at Birmingham
- Cooperative Research Centre for Advanced Composite Structures Ltd (CRC-ACS)
- Composites Innovation Centre
- SCION.

This network is made up of international researchers involved in Bio-composites research and their developments. The group meets annually and discusses various latest developments, findings and research work carried out by its respective members and the rest of the world. Please visit www.biocompositesinternational.com/index.php.

BILATERAL AGREEMENT WITH INTERNATIONAL UNIVERSITIES

- Dr. Arnold Towo, University of Dar-es-Salaam (Tanzania). Collaboration in the form of an international bilateral project between the Governments of South Africa and Tanzania, NRF (SA) - COSTECH (TZ). The project is entitled 'Inclusion of nanoparticles in lignocellulosic fibers using chemical methods.'
- Dr. Bong Kim, Gwangju Institute of Science and Technology (South Korea). Collaboration in the form of an international bilateral project between the Governments of South Africa and South Korea, NRF (SA) - NRF (SKOR). The project is entitled 'Hybrid oxide p-n homojunction nanowire solar cells using piezophotronic effect.'
- Dr. R. Velmurugan, Indian Institute of Technology (India). Collaboration in the form of an international bilateral project between the Governments of South Africa and India, NRF (SA) - DST (India). The project titled 'Application of nanocomposite in space science'.

INTERNATIONAL RESEARCH COLLABORATIONS

- University of Alabama Birmingham, Alabama, USA
- North Dakota State University, North Dakota, USA
- Concordia University, Montreal, Canada
- Central Institute of Plastics Engineering and Technology (CIPET), India.
- Composite Research Center, Victoria, Australia
- Composites Innovation Centre, Canada
- Army Research Laboratory, Maryland, USA
- Mahatma Gandhi University, India.

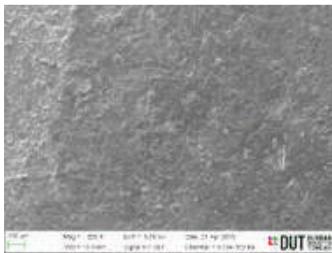
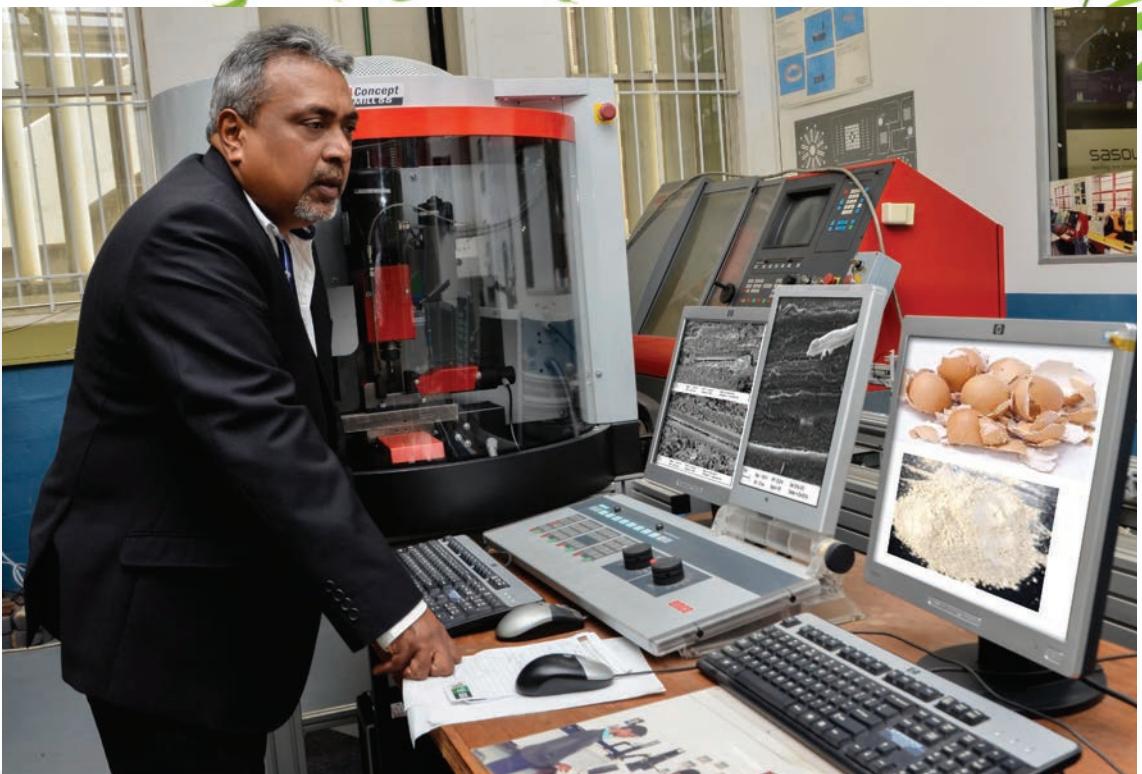


INDUSTRIAL/PARASTATAL COLLABORATIONS:

- Automotive: Toyota Motors & Apollo Tyres
- Infrastructure: Transnet
- Aerospace: Denel Dynamics (Pty) Ltd, South Africa
- Materials: Fiber wound, AMT composites, ALS solutions, Wirsam
- Chemicals: Labotec, Laboquip
- Automation: Festo and Siemens
- FaCT Technologies (Pty) Ltd, South Africa.

GRANTS (recent 3 years)

1. India/South Africa bilateral research cooperation programme, sponsored by DST-India/NRF-SA. Project titled “Application of nanocomposite in space science”. Duration: 2011-14.
2. Tanzania/South Africa research cooperation programme, sponsored by COSTEC-Tanzania/NRF-SA. Project titled “Inclusion of nanoparticles in lignocellulosic fibers using chemical methods”. Duration: 2014-15.
3. South Korea/South Africa research cooperation programme, sponsored by NRF-S. Korea/NRF-SA. Project titled “Hybrid oxide p-n homojunction nanowire solar cells using piezophototronic effect”. Duration: 2014-17.
4. CSIR-South Africa sponsored project, “Biocomposites for mass transit application”. Duration: 2015-18.
5. CSIR-South Africa sponsored project, “Kenaf fiber reinforced polylactic acid based bio-plastics and bio-composites”. Duration: 2014-2016.
6. NRF SA - Knowledge, Interchange and Collaboration (KIC) 2016 grant.



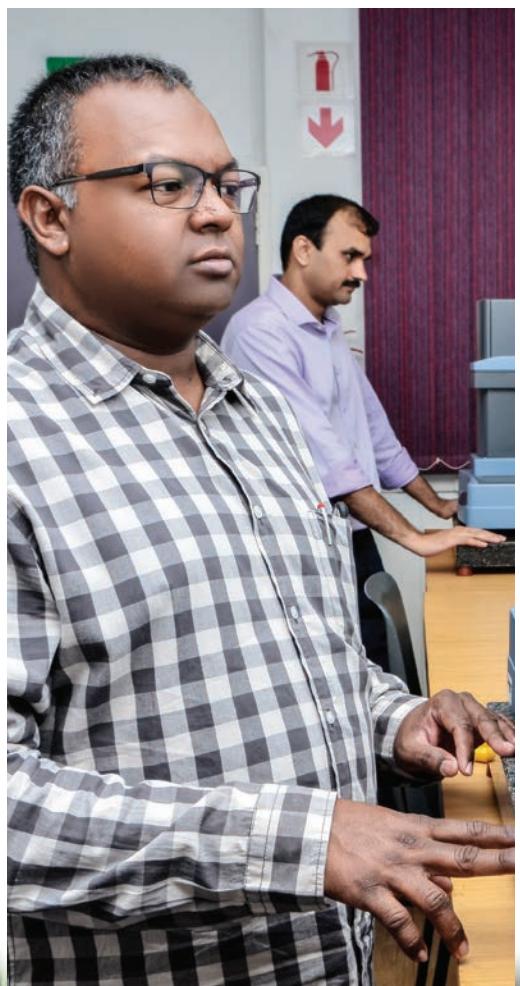
Biodegradable film from bagasse, with SEM image for film



In-house fabricated Brake pads



Nanocellulose extracted from raw kenaf fibers







RESEARCH FOCUS AREA

FOOD AND NUTRITION SECURITY

FOOD AND NUTRITION SECURITY

The Research Focus Area: Food and Nutrition Security is located within the Department of Food and Nutrition. The focus of the research in the Department is to evaluate the cross-sectional effect of the three pillars of food security (food availability, food accessibility and food usage) on nutritional status (over-nutrition and under-nutrition) in vulnerable population groups in the greater Durban area and to plan, develop and implement interventions to address needs identified in various communities. The objectives of the Departmental focus area are in line with national and international policies addressing food and nutrition insecurity.

The National Development Plan, the South African Integrated Nutrition Programme (INP) and the SA Food and Security Policy (2015) with the new Sustainable Development Goals (SDGs) developed in September 2015 are all national policies that underpin the research focus areas.

Well-functioning food systems are essential to ensure that people do not suffer from malnutrition (Joerin et al, 2016:22). The World Health Organisation and the Food and Agriculture Organization (United Nations) advocate improving the functioning of food systems to provide sufficient, safe, high quality and accessible food for all people and to make nutrient-rich food available, affordable and acceptable within the current food environment (Downs, 2016).

The objectives of the Food and Nutrition Security Focus Area are:

To determine the socio-demographic profile of communities by administering a socio-demographic questionnaire to understand and identify variables that impact on food consumption, food security and nutritional status.

To determine the nutritional status of the community by using anthropometric measurements (weight, height, waist circumference, hip circumference, arm circumference).

To determine the actual food intake of a community to determine the nutrient adequacy of the diet by comparing it to the Dietary Reference Intake and requirements per age and gender category.

To determine food variety and food group diversity in communities by using a Food Frequency questionnaire. The data gathered is used to assist in identifying food security.

To determine the coping strategies of a community in times of hunger by administering the coping strategy index.

To determine menu adequacy in institutions caring for various population groups to make recommendations to these facilities for improving the health of the residents.

To plan, implement, and assess interventions to address food and nutrition related problems to address food security.

Some or all the above objectives can be included in the various studies depending on the specific aim of each study and presents a holistic view of the community profile.

RELEVANCE AND OUTCOMES OF THE RESEARCH

This focus area provides information regarding cross-sectional effect of food security on malnutrition in vulnerable population groups in the greater Durban area. It is a unique focus area planned to address food and nutrition security and involves a large part of the KZN community. The results should therefore have an impact on the public health policy by establishing food and nutrition security in various communities.

SCIENTIFIC OUTCOMES

Various Masters and Doctoral qualifications and publications in accredited journals are presented from this focus area. All the individual research projects are measured scientifically and presented at conferences and published as scientific papers.

COMMUNITY CAPACITY BUILDING

The outcomes of the research projects are used to develop food and nutrition interventions that benefit the individual communities. Feedback from these projects to community leaders, organisations and government, provides information that can be used to plan further interventions.

IMPACT ON HEALTH, NUTRITION AND FOOD POLICY

The information gathered through the socio-demographic questionnaire could be used to indicate other problem areas as well as give more insight into households in the Durban area with regards to income, education levels, room density and poverty. Food security can contribute to higher economic growth and returns, poverty reduction and improved food and nutrition security status.





STUDENT ACTIVITY/GRADUATION

The following students have completed their qualifications in Masters of Applied Science in Food and Nutrition in 2015/2016 under the Supervision/Co-supervised of Professor Napier

Wilkinson J. 2015. Comparison of packed school lunches of boys and girls in primary schools in East London. Masters of Applied Science in Food and Nutrition, DUT.

Vermeer S. 2015. Impact of a nutrition education programme on the nutrition knowledge of grade R learners in Durban. Masters of Applied Science in Food and Nutrition, DUT.

Nzama P. 2015. Nutritional adequacy of menus offered to children 2-5 years of age in registered child-care facilities in Inanda. Masters of Applied Science in Food and Nutrition, DUT.

Devar S. 2016. Health indicators and nutritional profile of staff at a training institution as a foundation for the development of nutrition wellness education material. Masters of Applied Science in Food and Nutrition, DUT.

Naidoo T. 2016. Evaluation of nutrition information embedded in the grades 8 to 12 KwaZulu-Natal school curricula. Masters of Applied Science in Food and Nutrition, DUT.

Khuluse D. 2016. Food hygiene and safety practices of informal food vendors at a University of Technology in Durban. Masters of Applied Science in Food and Nutrition, DUT.

Mtolo A. 2016. Food security and coping strategies of an urban community in Durban. Masters of Applied Science in Food and Nutrition, DUT.

Mothepe L. 2016. Food insecurity and nutritional status relating to chronic diseases of elderly caregivers within the rural households of Mpharane in Lesotho. Masters of Applied Science in Food and Nutrition, DUT.

Govender K. 2016. Snacking preferences of primary school children as a guideline to develop a sensory acceptable snack food item enhanced with Moringa Oleifera. Masters of Applied Science in Food and Nutrition, DUT.

INTERNATIONAL RESEARCH COLLABORATIONS

Professor Wilna Oldewage-Theron - Texas Tech University in the United States of America.

Professor Carola Strassner - Munster University of Applied Sciences in Germany.



DUT RESEARCH FOCUS AREA

**INTERNATIONAL CENTRE OF
NONVIOLENCE (ICON)**



INTERNATIONAL CENTRE OF NONVIOLENCE (ICON)

ICON's Peacebuilding Programme has around thirty PhD and ten Master's students currently. It is expected that an additional twenty new PhD students will join the programme in 2017. Majority of the research projects in the programme are based on action research, which means that students not only explore a problem but design and implement an intervention to bring about change. Thus, there are dozens of small peacebuilding projects happening across the continent. Examples include community-based peacebuilding, using drama and the arts in peacebuilding and training peer educators in schools to reduce violence.

RESEARCH PROJECTS WITHIN ICON

Dr Sylvia Kaye and Professor Geoff Harris have completed an edited book titled "Building peace via action research". Another book "African case studies" is about to be published by the University of Peace in Addis Ababa. This includes 11 chapters drawn from the students' research.

Dr Sylvia Kaye is co-editing a book entitled Inclusive Development: Women and Peacebuilding in Africa.

Mr. Crispin Hemson's research focusses on masculinities and violence. As part of the collaboration in the Networks of Change and Wellbeing partnership, research work with the Amajita men's group at DUT is ongoing.

STUDENT ACTIVITY/GRADUATION

To date, postgraduate studies within the focus area has resulted in seven (7) PhD students and one (1) Master's student graduating during 2016.

Ms Pearl Atuhaire, a PhD student, was awarded a Mandela Washington Fellowship for Young African Leaders.

Several students have published their findings, viz:

Akande, O. 2016. Participatory media practices in conflict communities. Trends, Issue 3.

Musarurwa, H. 2016. The rise of youth activism and non-violent action in addressing Zimbabwe's crisis. Conflict Trends, Issue 3.

Rukuni, T., Shanyisa, W. Madhuku, J. and Musingafi, M. 2016. Enhancing women participation in peacebuilding and decision making processes in Zimbabwean rural communities. Information and Knowledge Management, 9(9): 38-46.



INTERNATIONAL RESEARCH COLLABORATIONS

Professor Geoff Harris is editing a book titled Nonviolence in sub-Saharan Africa: potential, tools and challenges with Mediel Hove from the University of Zimbabwe. ICON, in collaboration with the University of Alberta, is co-sponsoring a book titled: Inclusive Development: Women and Peacebuilding in Africa which is based on gender in research.

Mr Crispin Hemson heads the Innovative Leadership Programme in collaboration with DUT and ACCORD. Forty students have successfully completed this programme in 2016.

DUT Dialogue series: public events at DUT on issues of social importance.

eThekwin Metro and DUT: ICON has been responsible for teaching the module Cornerstone 101 to 200 students who are municipal employees.

Moral Regeneration Movement (MRM): Mr Crispin Hemson is directly involved in the organisation of the MRM Summit in Durban in December 2016.



INTERNATIONAL PARTNERSHIPS

ICON has a memorandum of understanding with Sub-Saharan Africa University in Goma in the eastern Democratic Republic of Congo. This is a new university with a strong commitment to peacebuilding and community engagement. ICON invited two of their staff to DUT to work on curriculum development for three months. ICON was the major sponsor of the Peacebuilding in the Great Lakes region conference held in Goma in September, 2016.

ICON has a strong relationship with the Theological College of Zimbabwe and the NGO Grace to Heal, both based in Bulawayo, Zimbabwe and are working with them to develop a new postgraduate programme in conflict transformation.

In collaboration with McGill University, Agenda journal, University of Kwazulu-Natal (UKZN) and Nelson Mandela Metropolitan University (NMMU), ICON is involved with Networks for Change and Wellbeing, a research collaboration on developing girls' leadership on the issues of sexual violence.







RESEARCH FOCUS AREA

**INSTITUTE FOR WATER AND
WASTEWATER TECHNOLOGY
(IWWT)**

INSTITUTE FOR WATER AND WASTEWATER TECHNOLOGY (IWWT)

Increased levels of unsustainable urbanisation and industrialisation over the past few decades have resulted in severe environmental degradation. Overcoming environmental challenges brought about by anthropogenic waste has come strongly into focus in recent times. With the renewed interest in environmental protection and sustainable development, research at universities play a pivotal role in generating ideas, knowledge and technologies to subdue the current environmental challenges and build sustainability for the future.

Water is critical to the development of any civilisation and protection of this valuable resource forms the basis of sustainable development. To this end, the Institute for Water and Wastewater Technology (IWWT) has, for more than 20 years, conducted research into wastewater treatment technology and bioremediation of contaminated water bodies. With the increase in global energy demand, developing countries such as our own, must ensure security of supply for sustained growth. Production of renewable, sustainable energy is key to environmental protection. In the last decade, our research focus has grown to encompass the utilisation of microalgae as sustainable feedstocks for production of renewable energy and other high value products. More recently, valorisation of waste substrates for production of biohydrogen and nutrient recovery has been added to the Institute's core competencies.

Research at IWWT is largely applied and projects are selected and designed in close consultation with industrial partners with the aim to help industries

maintain acceptable levels of effluent discharges and to meet increasing energy requirements. This plays an essential role in reducing negative environmental impact and commercialization of products generated from waste streams.

The strength of the Institute lies in its commitment to develop essential skills through student training. This effectively equips the researchers to venture out into industry and satisfy the much needed human resource requirements of the water sector. Due to the multi-disciplinary nature of the research, the Institute offers postgraduate programmes in a wide spectrum of disciplines in Science and Engineering. It accepts postgraduate students whose qualifications are registered in a variety of Departments such as Biotechnology, Chemistry, Civil and Chemical Engineering and Environmental Health. IWWT postgraduate student base comprises local as well as international students. Postgraduate students are trained and developed to satisfy the water and wastewater human resource needs of industry in general.

During the years 2015/2016, IWWT has hosted eleven Postdoctoral Fellows from reputable international institutions, twenty-four Doctoral students, fourteen Masters, three B. Tech students and nine undergraduates. Publishing research articles are a core part of the research carried out at the Institute with a total of twenty-five research articles, four book chapters and twelve national and international conference presentations for the past two years.



RESEARCH AREAS ENCOMPASS:

Biological Nutrient Removal in wastewater treatment

Algal Biotechnology

Activated sludge bulking

Anammox

Biodiesel production using algae

Bio-hydrogen production using waste substrates

Emerging contaminants in wastewater

Graduates 2015/2016:

Doctoral

Dr Abhishek Guldhe

Dr Abimbola Enitan

Dr Krishan Ramluckan

Dr Mathews Mthembu

Dr Oluwemi Awolusi

Masters

Mr Luveshan Ramanna

Ms Thobela Conco

Ms Karen Reddy

RESEARCH COLLABORATIONS

Due to the nature of the research undertaken, the IWWT has close links with several partners:

National

Local Government and municipalities

Water utilities throughout South Africa

Major industries, both regional and national

Local communities and NGOs

Community partnerships (2014-2016):

Water quality analysis for SDCEA

Water quality analysis and advice for Isipingo Ratepayers Association

Groundwater contamination- Durban South Basin

OXFAM

Industrial Partnerships (2016):

AVI Products

Hitachi Europe

Illovo Sugar-Sezela

Rheochem

Protea Chemicals

Memoranda of Agreement

eThekini Municipality

Mhlatuze Water

City of Cape Town

Tshwane Municipality

Student Exchange Programs

Department of Chemistry, Federal University of Piaui- Brazil

School of Environmental Engineering, Suranaree University of Technology- Thailand

International Partnerships

Bilaterals:

Algeria - South Africa: determining the suitability of using wastewater as a substrate for algal propagation. 2014-2016.

China - South Africa: anammox reactor: design, enrichment and application for treatment of ammonia rich wastewater. 2015-2016.

India-Brazil-South Africa (ibsa): evaluation and optimisation of biodiesel production from microalgae.2014-2017.

INTERNATIONAL CO-OPERATION/PROJECTS:

The Global Microbiome project (2015-2017) - Host: University of Oklahoma (USA). Partners: 70 Countries.

EBPR Microbial Observatory (2015-2017) - Host: Aalborg University (Denmark). Partners: Europe, Africa, USA.

Japan International Cooperation Agency, SATREPS Program (JICA- SATREPS) (2016-2021) - Algae Technology project. Partners: Durban University of Technology, Nagoya University (Japan), Tokyo University of Agriculture and Technology (Japan), Hitachi Japan, Agricultural Research Council (SA), eThekini Water and Sanitation.

EXTERNAL GRANTS

National Research Foundation:

National Equipment Program - NRF Grant for 2014/15: infrastructure funding instruments

Algeria SA Bilateral (2013-2015) - Determining the suitability of using wastewater as a substrate for algal propagation

India Brazil South Africa (IBSA) Trilateral (2014-2017) - Evaluation and optimisation of biodiesel production from microalgae

China SA Bilateral (2015-2016) - Anammox Reactor: Design, enrichment and application for treatment of ammonia rich wastewater

Technology Innovation Agency:

Seed Funding Phycocyanin (2014/2015) - Optimization and Purification of Algal Phycocyanin for fluorescence applications

Seed Funding Website (2014-2015) - Subscription-based Wastewater knowledge hub & troubleshooting web interface

Seed Funding Large Scale Cultivation of Microalgae (2015-2016) - Evaluation of microalgal biomass and lipid production at demonstration scale

Seed Funding Harvesting (2015-2016) - Assessment of harvesting and drying technology for microalgal biomass

Wastewater Beneficiation Using Algae (2016-2021)- Production of biofuels from algae with concomitant tertiary treatment of wastewater

Water Research Commission:

Activated Sludge Bios (2014-2017) - A real time tool to evaluate activated sludge process

Filamentous Survey (2015-2017) - Identification and correlation with process parameters, wastewater treatment plant configuration and geographical location

Anammox (2016-2018) - Anammox process for improved ammonia removal from wastewater

ESKOM Tertiary Education Support Program (1995-2016)

AWARDS AND ACCOLADES

Professor F Bux

National Research Foundation Rated Researcher, B3, 2015
Elected to the Academy of Sciences of South Africa (ASSAF), 2016

The 2015 Applied Energy Award - highly cited research and review papers for "Rawat I, Ranjith Kumar R, Mutanda T, and Bux F 2013. Biodiesel from Microalgae: A Critical Evaluation from Laboratory to Large Scale Production. Applied Energy, 103: 444-467"

Appointed by DHET as the South African representative on the Brics Network Universities Panel for the thematic group (ITG) Water Resource Management and Pollution Treatment

Dr Sheena Kumari

National Research Foundation Rated Researcher, C3, 2015





RESEARCH FOCUS AREA

**SOUTH AFRICAN RESEARCH CHAIR INITIATIVE (SARCHI)
INSTITUTE FOR WATER AND WASTEWATER TECHNOLOGY**

SOUTH AFRICAN RESEARCH CHAIR INITIATIVE (SARCHi)

INSTITUTE FOR WATER AND WASTEWATER TECHNOLOGY

The research area for the SARCHi Chair holder, Professor Thor Axel Stenstrom, within IWWT is the “Development and Optimisation of Wastewater Treatment Technology for Developing Economies”. This is subdivided into four different thematic areas with a focus on Water and Environment with Health as Central Areas (Microbiology, Environmental Impact and Chemistry). The areas in brief are:
Understanding of microbial action in full-scale biological wastewater treatment facilities
Alternative wastewater treatment technology
Catchment and technology based integration of health, well-being and environment
Wastewater treatment and reuse for crop and energy production.

The titles of the different projects, as stated under section “Research Projects”, falls within these areas and are also interlinked with each other. The social impact and drivers for the work are based on the

pillar stones of:

- Scientific Excellence
- Global Networking and
- Promotion of Students/Staff.

This was demonstrated during 2016 in the journal articles, book chapters and conference attendance listed below. This is further manifested in the strive towards co-authorship both with students and within a global network of co-authors. It is further evidenced by the promotion of students/staff attendance and presentation to several national conferences and by the individual study visits and attendance of international conferences during 2016. In the last 12 months, there has been more than ten (10) student/staff visits abroad. Finally, registration of students are cross-faculty (currently registration is within four (4) different DUT faculties).



RESEARCH PROJECTS

(Exemplified by the title of the individual student projects.)

PHD CANDIDATES:

Ms Folasade Adeyemo (South African PhD):

Occurrence and variation of Cryptosporidium and Giardia in wastewater treatment and receiving river basins accounting for their downstream impact.

Mr Isaac Dennis Amoah (Ghanian PhD student): The Risk factors of Soil Transmitted Helminth Infections: A need for Appropriate Measurement Methods.

Mr Faleye Christopher Adekunle (Nigerian PhD):

Prevalence and fate of antibiotics and its derivatives in sewage treatments and the receiving environment

Ms Andiswa Unathi Badela (South African PhD):

Emerging vibrios and vibriophages in wastewater and receiving bodies: occurrence and public health impact

Ms Nashia Deepnarian (South African PhD):

Development of a model to predict bulking in full-scale wastewater treatment plants, and the impact of bulking on the receiving environment

Ms Indrani Govender (South African PhD):

Development of a regional scale risk assessment model for the management of the river resources in the uMgeni River catchment, KwaZulu-Natal

Ms Shania Moodley (South African PhD): Prevalence and risk analysis of pathogenic organisms in hot water technologies in South Africa

Ms Reshma Govender (South African PhD):

Assessment of the emerging pathogenic species belonging to the genera Acinetobacter, Pseudomonas, Aeromonas and Stenotrophomonas in wastewater effluents and receiving water bodies

MASTERS CANDIDATES:

Ms Thobela Conco (South African Masters student):

Determination of the relationship between epiphytes and selected filamentous bacteria in activated sludge.

Mr Jashan Gokal (South African Master student):

Determining the efficiency of the anammox process for the treatment of high ammonia influent wastewater.

Ms Ayanda Sithebe (South African Masters student):

A comparative microbiological assessment of river basin sites to elucidate faecal impact and the corresponding risks.

Mr Thabo Zwane (South African Masters student):

Distribution and accumulation of organic and inorganic pollutants in the water and sediments of Durban south basin rivers.

Mr Ezinne Madu (Nigerian Masters student):

Occurrence of Vancomycin Resistant Enterococci (VRE) in two Durban Waste Water Treatment Plants for effluent reuse.

Mr Sanderan Ramasamy (South African Masters student):

Pharmaceutical and E. coli uptake by crops irrigated with wastewater effluent.

Ms Marisa Rajan (South African Masters student):

Evaluation of woven fabric microfiltration for the removal of bacteriophages and other micro-organisms from surface waters.

Mr Julian Arran (South African Masters student):

Framework for a disaster vulnerability risk assessment of Durban/Ethekwini with a focus on water related extreme events.



WORK INTEGRATED LEARNING INTERNS

Ms Lesantha Moodley - Detection and quantification of bacteriophages in surface water and sediments by double agar layer method.

Ms Kholeka Mthembu - Detection of Salmonella in a decentralized treatment plant and its effect on crop irrigation.

Ms Busisiwe Nzima - Prevalence of antibiotic resistant Salmonella and Enterococcus in waste water treatment plants and its receiving water.

STUDENT ACTIVITY

Ms A Sithebe - Eskom Expo mentorship training programme 25 February 2016.

Dr A Adegoke and Dr G Singh - NRF-STINT Kick-off Workshop in Sweden, February 2016.

Mr ID Amoah, Ms MA Rajan, Mr JT Arran, Ms FE Adeyemo, Ms A Sithebe, Ms AU Badela, Dr A Adegoke, Dr G Singh, Ms R Govender, Mr A Faleye, Ms T Conco and Mr J Gokul - NRF-STINT workshop (Durban, October 2016).

Mr ID Amoah, Ms MA Rajan, Mr JT Arran - Gates (Reinvent the toilet, workshop) Seattle, USA (July 2016).

Ms I. Govender, EUROSIA programme (currently in Lund University, Sweden).

Ms A Sithebe - STATA Training 19-21 August 2016.

Mr A Faleye - Wastewater analysis in Umea University (Sweden) June 2016.

NEW STUDENTS (2016)

Ms R. Govender (PhD)

S Ramasamy (Master)

Ms E Madu (Master)

Ms M Rajan (Master)

Mr J Arran (Master)

STUDENT GRADUATION

Ms T Conco (Master)



RESEARCH COLLABORATIONS AND PARTNERSHIPS

Name of collaborator	Institution	Sector/Discipline	National/International
Dr S Petterson	Director, Water & Health Pty Ltd Editor, Journal of Water and Health	Water and Health	International
WP 4 and 5. Risk assessment framework. Publication on Chlorine disinfection and modelling. Cooperation in relation to catchment based viral impact.			
Dr H Overgaard	Institute de recherché pour le développement (IRD), MIVEGEC Dept of Entomology, Kasetsart Uni.	Entomology	International
Joint PI on external project on dengue and diarrhoea in communities and schools in Thailand/Laos and Colombia			
Dr M Matiz	Instituto de Salud y Ambiente UNIVERSIDAD EL BOSQUE, Bogota, Colombia	Water and Health	International
Local coordinator of joint project on dengue and diarrhoea and the relationship to water and sanitation management in schools			
Dr A Johannessen	Stockholm Environment Institute	Environment and Health	International
WP4. Disaster Risk Reduction and Water and Sanitation Resilience in a Catchment Perspective			
Dr A Rosemarin	Stockholm Environment Institute	Environment and health	International
WP4. Disaster Risk Reduction and Water and Sanitation Resilience in a Catchment Perspective			
Dr M Starkl	Centre for Environmental Management and Decision Support	Environmental Management and Decision Support	International
Joint papers on effects on small scale water and sanitation installations also a joint EU application for research funding.			
Mrs J De France	Department of Public Health and Environment Water Sanitation Hygiene and Health , Geneva	Department of Public Health and Environment Water Sanitation Hygiene and Health	International
World Health Organization. Collaboration in relation to Risk Assessment and Management			
Mrs K Medicott	Department of Public Health and Environment Water Sanitation Hygiene and Health, Geneva	Department of Public Health and Environment Water Sanitation Hygiene and Health	International
World Health Organization. Collaboration in relation to Sanitation Safety Planning			
Dr J Jewitt	University of KwaZulu-Natal, Centre for Water Resources Research, Pietermaritzburg	Water Resource	National
WP4. Catchment related Research. Joint WRC project			
Prof C Buckley	University of KwaZulu-Natal, Pollution Research Group	Pollution Research	National
Small scale sanitation and Catchment related research			
Dr N Rodda	School of Life Sciences University of KwaZulu-Natal (Westville Campus)	Microbiology	National
WP2 and WP5. Risk and Wastewater Impact			
Mr N Larrat	eThekweni Health Unit	Health	National
WP 4 and WP5. Health assessment and management			
Dr V Tandoi	CNR, Water Research Institute, Italy	Water Microbiology	International
Filamentous bacterial expertise and collaboration			
Dr R Shanker	Institute of Life Sciences, Ahmedabad University, Ahmedabad, India	Water and Health	International
WP 4 and 5. Risk assessment framework.			
Prof R Seidu	Water and Environmental Engineering Group, Alesund University, Norway	Water and Environmental Engineering	International
WP5: Risk Assessment and Management of Wastewater Reuse in Agriculture.			
Prof L I Jianhua	Institute of Environment for Sustainable Development (IESD), Tongji University, Shanghai	Environment and Sustainable Development	International
South African-China Bilateral: Anamox Reactor: Design, enrichment and application for treatment of ammonia rich waste water			

Dr D Zerrouki	Department of Chem. Engineering University of Ouargla	Chemical Engineering	International
linked to WP 2, WP 3 and WP 5. Determining the suitability of Wastewater as a substrate for algal propagation			
Dr B Jimenez-Cisneros	United Nations Educational, Scientific and Cultural Organization	Water Sciences	International
WP 5. Risk Assessment and Management of Wastewater Reuse in Agriculture.			
Dr B Levecque	Ghent University · Department of Virology, Parasitology and Immunology	Parasitology	International
Work related to WP2			
Prof R F Goncalves	Federal University of Espírito Santo	Environmental engineering	International
Work related to WP2			
Dr P L Paulo	Federal University of Mato Grosso do Sul	engineering, architecture, urbanism and geography	International
Work linked to WP2			
Dr C E Hensman	Bill and Melinda Gates Foundation	Water, Sanitation and Hygiene	International
Work Linked to WP5			
Prof N Ashbolt	Environmental Health Sciences, University of Alberta, Canada	Environmental Health Sciences	International
Linked to various Wp's			
Dr J Thomas	IFKARA Institute, Tanzania	Water, Sanitation and Hygiene	International
Linked to WASH			
Dr K Torell	Swedish National Veterinary Institute	Microbiology	International
Linked to protozoan work			
Dr C M Rendon	National Autonomous University of Mexico, UNAM, Mexico	Parasitology	International
Linked to WASH			
Dr J A B Perez	National Autonomous University of Mexico, UNAM, Mexico	Parasitology	International
Linked to various WP's			
DrE Solokova	Chalmers University of Technology	Environmental Modelling	International
NRF STINT joint PI			
Prof T Pettersson	Chalmers University of Technology	Environmental Modelling	International
NRF STINT joint PI			
V Bergion	Chalmers University of Technology	Environmental Modelling	International
NRF STINT joint PI			

EXTERNAL GRANTS

Stockholm Environment Institute (SEI) - (2014-2015) - Disaster Risk Reduction- WASH and RESCUE. Water, Sanitation and Hygiene in ReSilient Cities and Urban areas adapting to Extreme waters- Sweden

Bill and Melinda Gates Foundation (2015-2016): Developing a uniform Soil Transmitted Helminths analysis consortium for analysing faecal waste samples- India, Senegal, Mexico, Belgium and U.S.A

National Council for Scientific and Technological Development (CNPQ/MCTI), Brazil (2015-2017)- Quantitative and qualitative microbiological risk assessment of decentralized sanitation technology arrangements- Brazil

Water Research Commission: Demonstration of how healthy ecological infrastructure can be utilized to secure water for the benefit of society and the green economy through a programmatic research approach based on selected landscapes

NRF STINT- Cryptosporidium and Giardia: water quality modelling, microbial source tracking, and risk assessment

AWARDS AND RECOGNITION

Professor Thor Axel Stenstrom has been selected as a member of a “Technical Advisory Group on Water Quality and Health (WQTAG)” by the World Health Organisation. “WQTAG” comprises of few experts, from various disciplines, who are appointed by the Coordinator of the Water, Sanitation, Hygiene and Health Unit at WHO after consultation with WHO regional offices. The WQTAG acts as a global advisory body to the WHO Secretariat on matters relating to water quality and health. They are responsible for developing international ‘Guidelines for Drinking Water’ as well as ‘International Standards for Drinking Water’

SARCHI was awarded a grant from the Bill and Melinda Gates Foundation to the value of \$385,363.00 (US Dollar) for developing publicly available environmental analytical methods that present uniformity and consistency in assessing and quantifying the global problem with Soil Transmitted Helminths and their detection.

Professor Stenstrom has also received the following recognitions:

Honorary position as a senior associated researcher Inst de Salud Ambiente Universidad el Bosque, Bogota, Colombia

Inducted as a member of the Sustainable Sanitation Alliance (SuSanA)

Associate Researcher at the Stockholm Environment Institute(SEI)

Water South Africa – Subject editor assignment for 2016 – 2017. Nomination approved 2015

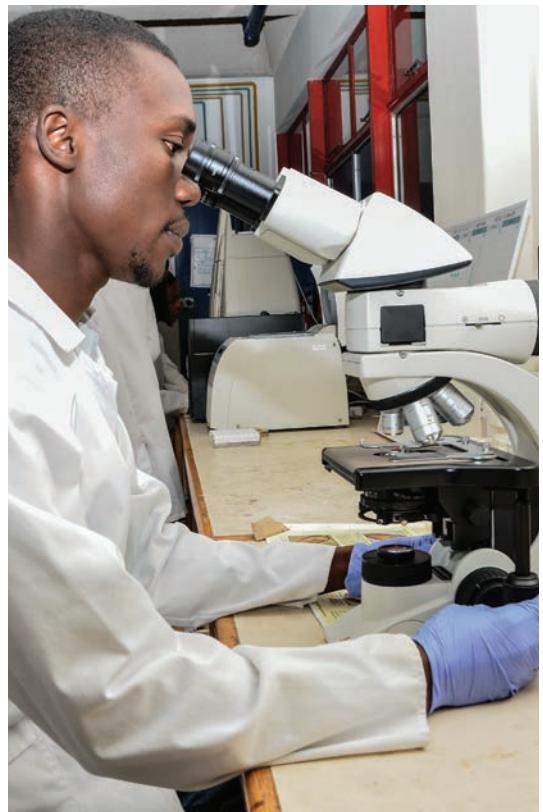
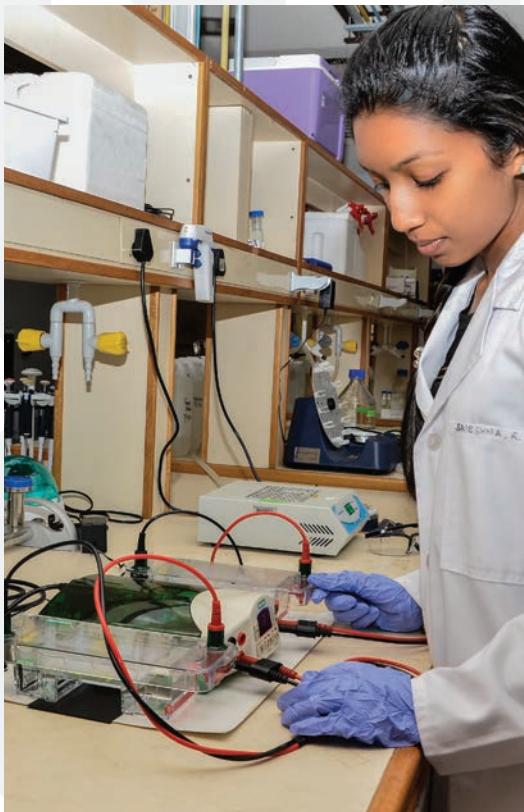
Associate and researcher involved in UNESCO’s “Global Water Pathogen Project”

Facilitator at SEI’s WASH and RESCUE project in Stockholm (June 2015)

International Water Association member

Water Institute of Southern Africa member

Subject area Editor for Water SA







RESEARCH FOCUS AREA

THE URBAN FUTURES CENTRE (UFC)

THE URBAN FUTURES CENTRE (UFC)

The Urban Futures Centre (UFC) based at the Durban University of Technology (DUT) started in 2014, headed up by Professor Monique Marks. The centre's aim is to be an intellectual and practical hub geared toward shaping urban spaces that are vibrant, resilient, accessible, egalitarian, caring and well-designed. While there are urban centres at universities in Cape Town and Johannesburg, no such centre existed in Durban. DUT was an ideal home for the UFC. The university strives to send graduates into the world as productive citizens who can think critically, who have advanced technical skills and who impact positively on their environment, both industriously and ethically.

CORNERSTONE PROJECTS

When the UFC was constituted, a workshop was held with key potential actors to decide what themes would hold the centre together. These themes were based on current debates within urban centres nationally and internationally, and on the urban dynamics of Durban. The projects the UFC undertakes 'fit' with at least one of these themes. Project choices are determined by their resonance with the guiding principles of the centre.

Urban safety and risk management - Perceived and real safety are fundamental to the health of any city. Safety includes physical safety and the management and securitisation of health, food, energy and water.

Urban mobility and flows - The UFC believes that cities are places of flow. This includes the flows of goods, services, information, people, water, energy, transportation and food.

Urban creativity, aesthetics and cultural dynamism - Urban spaces are, and should be, co-created spaces of creativity, cultural dynamism and social connection.

The governance of transition and the transition of governance - As cities shift and flows occur, new forms of governance are required. At the same time, governance arrangements need to be established to facilitate flows and transitions.

Digital and invisible cities - Cities are not simply 3D entities. They operate digitally, and in some instances, their existence is virtual. Cities hold within them people, places and even structures that are 'invisible' (especially regarding dominant and elite groupings). It is the less visible entities of cities that have proven time and again to be the most resilient components of them.

BLUE SKIES

How Design Could Contribute Towards More Equal and Just Urban Spaces

Apartheid was a profoundly spatial form of segregation. In South Africa, today, there is emphasis on transformation – a move towards a more equal and just society. The Blue Skies project looked at the role of urban design and planning in making this shift. Undoubtedly, there have been individuals and organisations that have worked towards dismantling segregatory practices, but there is little evidence to suggest a consciously engineered re-imagining of disciplinary practices towards radically transforming our cities.

Too often, urban planning primarily represents the interests of those who possess capital- economic, cultural or social. Seldom is it designed to serve the people who already live and work in a space, and uniquely shape the built environment. The Blue Skies project, in contrast, aims to provide an exploratory and imaginative space to inform designs that break away from this conventional practice; ideas that take seriously co-producing urban designs through participation and collaboration. The UFC formed a multidisciplinary laboratory, drawing from the fields of architecture, drama, sociology, art, and town planning, to experiment with alternative methodologies focusing on the co-production of spatial knowledge. Like any good laboratory, it wanted to test out what this alternative praxis means when compared to the conventional methods. DUT had designed, with limited participation from staff and students, a master plan for an educational precinct around its campuses. The Blue Skies project put out a call for proposals for pilot studies focusing on the precinct. The idea was that the pilot studies would throw light on whether alternative methods could raise critical questions for the existing master plan, and whether the design process would be different if different types of data were collected. Five proposals were accepted:

Pedestrians, commuters and minibus taxis: This project collected ethnographic and narrative data from the public, including the taxi drivers and passengers, who move through the DUT campuses (Abigail Knox, Andile Shange and Kgabo Makghato).

Happitecture: This study aimed to creatively capture emotional responses and feelings of happiness in relation to the built environment on campus, and what this means for designing happy spaces (Jonathan Edkins, Thobani Ndlovu, Thashalen Naidoo, Mxolisi Hlongwa, Lungile Cele, Bonke Duma, Nelisiwe Beryl Xaba and Euridice Lutucuta).

Strengthening the social in spatial planning processes - a focus on land use management: This project investigated some of the obstacles to the lack of social planning in planning practices in South Africa (Vicky Sims).

Masihambisane: This pilot study focused on developing new pedagogies for teaching architecture through collaborative explorations of spaces that moved students and practitioners out of their comfort zones (Bridget Horner, Miranda Young-Jahangeer and Doung Jahangeer). The pilot studies illustrate that the ‘chaos’ of Steve Biko street has some unexpected benefits. Busy streets are safer streets. Taxi drivers, informal traders, students, pedestrians and DUT security guards create an informal security network. When women pedestrians arrive in Warwick Junction they purposefully walk up Steve Biko Road because they feel safer. The students and the busy street gives protection. The informal security network in Steve Biko Road provides another form of university and public engagement, which the university until this point had not taken into consideration.

These findings are in direct contrast to the DUT master plan’s views that the “transport hub provides particular challenges for the University in ensuring safety and security”. Participants in a number of the pilot studies identified streets around DUT as unsafe but never once identified Steve Biko Road as having negative safety issues. What appears logical to the ‘experts’ who drew up the plan, and perhaps to a vehicle driver, may, in fact, make commuting more difficult and less safe for the many pedestrian users of Steve Biko Road. Even in this small experimental study there was a clear discord between the ideals of planning and urban design that tends to lean towards regulated and orderly spaces, and on the other side, the experiences of everyday people who live, work and use urban spaces.

The desire to turn chaos into order can act as an exclusionary mechanism that disregards the benefits of informality and the organic networks built through unregulated inclusive spaces. The project also engaged directly with these ideas in how we teach architects and planners to think differently about designing spaces. The research outcomes for 2015 are listed later in this report. In 2016, the Blue Skies project participants plan to present three conference papers, publish a trade journal article, and present findings to a large MILE seminar to be attended by over 60 academics, students, professional planners, and eThekweni municipal officials.

PARTNERS:

- DUT Architecture Department
- Dala Architects
- DUT Town Planning Department
- MILE

FUNDERS:

- National Research Foundation



GCRO/AHMED KATHRADA FOUNDATION

In 2015, Dr Kira Erwin undertook two pieces of research funded by the Gauteng City-Region

Observatory (GCRO) and the Ahmed Kathrada Foundation (AKF). The first research paper produced for this study, titled Global Anti-Racism Strategies and Practice project, reviewed different countries' action plans against racism, and identified within these strategies successful outcomes that may inform South Africa's National Action Plan against Racism, Xenophobia and Related Intolerances. This Action Plan is currently under design by the Department of Justice and Constitutional Development (DoJ&CD).

The second paper, Anti-Racism in Post-Apartheid South Africa, critically reviewed and synthesized selected antiracism strategies and practices in South Africa after 1994. The selected strategies and practices came from civil society, faith-based organisations, business and the public sector. The paper looked at how South Africa may pursue a more plural, rather than purist, anti-racism agenda through forming government and civil society partnerships.

In 2015, the two papers were shared with the DoJ & CD and presented as part of a workshop for civil society organisation hosted by the Nelson Mandela Foundation and the Ahmed Kathrada Foundation in Johannesburg. A decision to create a civil society grouping against racism, the Anti-Racism Network in South Africa (ARNSA), was made at this workshop. Dr Erwin joined the ARNSA National Steering Committee as a supporting member in 2015. The two papers will be published as part of a GCRO research report in 2016.

INTERNATIONAL PARTNERSHIPS

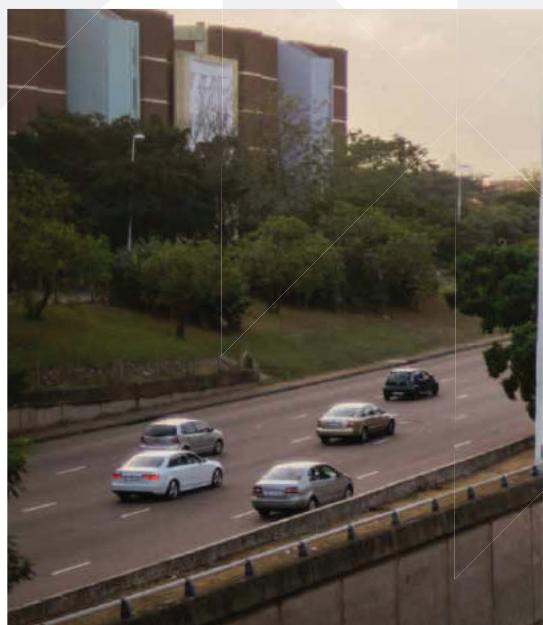
In 2014 the UFC hosted a group of eleven students from the University of California Davis who worked in partnership with six DUT students on the Kenneth Gardens, and two other DUT community engagement projects. The student teams created documentaries for the two NPOs in Kenneth Gardens, designed a community centre for a piece of community run land in KwaDabeka, and scripted a play and talent show performed by the children living in a local children's home. In 2015 the UFC collaborated with the University of California Santa Cruz, where two digital and media students from Santa Cruz worked with community NPOs to create working email accounts, a functional website and a funding portfolio.

PROJECT PARTNERS

- Alliance Francise Durban
- DUT Architecture Department
- Council for Scientific & Industrial Research
- Blue Security
- ADT
- Durban Metropolitan Police
- SAPS Umbilo and Westville
- Morningside Residents' Committee
- Dala Architects
- Safer Cities Department, eThekweni Municipality

SEMINAR SERIES

Every Wednesday the UFC hosts a seminar. Between 15 and 70 participants attend and include government officials, NGO representatives, academics and students from both DUT and UKZN (from a variety of disciplines). Presenters have included urban design practitioners, urban scholars, architects, philosophers, city activists and city officials. The seminar series has created a sense of inter-disciplinary engagement across the wide variety of disciplines at DUT. The UFC also hosts public debates on issues of critical public interest including urban design and security, whoonga dilemmas, and xenophobia.



EDITORIAL BOARD MEMBERSHIP (Prof Monique Marks)

1999 - 2009	Transformation: Critical Perspectives on Southern Africa
2003 - present	Loyola Journal of Social Sciences
2004 - present	Policing and Society
2004 - present	British Journal of Criminology (International Advisory Board)
2009 - present	International Review of Organisational Analysis
2009 - present	The Journal of Criminal Justice Research
2010 - present	Transnational Crime, Crime Control and Security
2011 - present	Australian and New Zealand Journal of Criminology
2014 - present	Contemporary Social Science (invited in December 2014)
2016 - present	Criminology and Criminal Justice Journal
2015 - present	Transformation: Critical perspectives on Southern Africa (Dr Kira Erwin)







RECOGNISING RESEARCHERS

RECOGNISING RESEARCHERS

RECOGNITION OF DUT NEWLY RATED and RE-RATED RESEARCHERS

The NRF rating system is a key driver in the NRF's aim to build a globally competitive science system in South Africa. It is a valuable tool for benchmarking the quality of our researchers against the best in the world. NRF ratings are allocated and based on a researcher's recent research outputs and impact as perceived by international peer reviewers. The rating system encourages researchers to publish high quality outputs in high impact journals/outlets. Rated researchers as supervisors will impart cutting-edge skills to the next generation of researchers.

SURNAME	INIT	TITLE	BROAD RATING CATEGORY	CURRENT AFFILIATION	SPECIALISATION	RATING AS AT 2016
Amonsou	EO	Dr	Promising young researcher	Durban University of Technology	Food processing, Food chemistry- specialising in legume proteins: functional characterisation of protein-polysaccharide complexes	Y2
Bharuth-Ram	K	Prof	Established researcher	Durban University of Technology	Nuclear Physics, Materials Research, Ion implantation in diamond and related materials, Emission channeling, Radioactive ion beams, Hyperfine Interactions, Nuclear Physics, Materials Research and technology, Ion implantation, Hyperfine Interactions, ion irradiation	C2
Bisetty	K	Prof	Established researcher	Durban University of Technology	Computational chemistry, Bioanalytical chemistry	C3
Bux	F	Prof	Internationally acclaimed researcher	Durban University of Technology	Wastewater technology, Algal biotechnology, Wastewater bioremediation, Biological wastewater treatment	B3
Chapman	MJF	Prof	Leading international researcher	Durban University of Technology	Literary criticism, Literary culture, English literature	A2
Collins	AJL	Prof	Established researcher	Durban University of Technology	Critical psychology, Gender studies, Media studies, Counselling psychology, Cultural studies	C2
Deenadayalu	N	Prof	Established researcher	Durban University of Technology	Thermodynamics, Ionic liquids, Pulp and paper, Solvent extraction, Phase equilibria, Chemical thermodynamics, Activity coefficients, Lignocellulose, Pulp and paper - Biotechnology, Chemical biotechnology	C2
Dorasamy	N	Prof	Established researcher	Durban University of Technology	Governance and public management, Public administration - Ethics, Values based leadership	C3
Duffy	KJ	Prof	Established researcher	Durban University of Technology	Mathematical modelling, Ecological modelling, Monte Carlo methods, Computational mathematics	C3
Erwin	K	Dr	Promising young researcher	Durban University of Technology	Sociology, Urban, Community based research, Ethnography, Sociology - Race, Class and Gender, Urban housing, Race	Y2
Govender	M	Prof	Established researcher	Durban University of Technology	Relativistic astrophysics, Thermodynamics, Gravitation, General relativity (Physics)	C2
Gqaleni	N	Prof	Established researcher	Durban University of Technology	African traditional medicine, Indigenous health system, African traditional medicine	C3
Harris	GT	Prof	Established researcher	Durban University of Technology	Development studies, Economics, Education, Development economics, Peace studies	C2
Kanny	K	Prof	Established researcher	Durban University of Technology	Nanomaterials, Conductive polymer nanocomposites, Analytical polymer science, Natural fibre reinforced composites, Robotics, Nanoclay polymers, Nanostructures, Plastic design of structures, Fatigue and fracture	C2
Kudanga	T	Prof	Promising young researcher	Durban University of Technology	Biocatalysis, Bioactive compounds, Antioxidants, Biotransformations, Antimicrobials, Environmental biotechnology, Lignocellulose	Y2
Kuttan Pillai	SK	Dr	Established researcher	Durban University of Technology	Applied and Environmental Microbiology, Biological wastewater treatment, Biohydrogen, Microalgae	C3
Marks	M	Prof	Internationally acclaimed researcher	Durban University of Technology	Community development, Community based research, Policing Studies, Security management, Ethnography, Community engagement, Urban studies	B2
Meyiwa	T	Prof	Established researcher	Durban University of Technology	Gender and culture, Self-directed learning	C3

Odhav	BO	Prof	Established researcher	Durban University of Technology	Antimalarial drugs, Anticancer drug development, Biochemistry (Medicinal plant), Cellular and molecular biology, Food - Nutrition, Anti-tb compound tests, Anti-diabetic drugs - Research, HIV drugs, Plant tissue culture, Algae biotechnology	C3
Olugbara	OO	Prof	Established researcher	Durban University of Technology	Smart city technologies, Scientific computational methods in the fields of machine learning, Mobile computing and Computer vision	C3
Permaul	K	Prof	Established researcher	Durban University of Technology	Enzyme application in biocatalysis, Microbial enzymes, Directed evolution, Enzymes - Industrial application	C2
Pillay	JD	Dr	Promising young researcher	Durban University of Technology	Physical Activity & Public Health	Y2
Preece	J	Prof	Internationally acclaimed researcher	Durban University of Technology	Adult education, Lifelong learning, Community engagement	B3
Singh	S	Prof	Established researcher	Durban University of Technology	Environmental enzymology	C1
Stenstrom	TA	Prof	Internationally acclaimed researcher	Durban University of Technology	Applied and Environmental Microbiology, Environmental Impacts, Applied environmental science, Advanced microbiology	B3
Venugopala	K	Dr	Promising young researcher	Durban University of Technology	Antimicrobial screening, Pharmaceutical sciences, Antimalarial compounds, Antituberculosis drugs, X-ray crystallography, Anticancer plant products, Antimicrobial peptides, Isolation and structural elucidation, Antioxidants, Anticancer drug development	Y2
Zloschastiev	KG	Dr	Established researcher	Durban University of Technology	Superfluidity, Gravitation, Quantum physics, Degenerate quantum gases, Open quantum systems, Quantum field theory, Elementary particles, Cosmology, Differential equations, Nonlinear and complex systems	C3



UNIVERSITY RESEARCH AWARDS 2015

TOP UNIVERSITY JOURNAL PUBLISHERS FOR ACCREDITED OUTPUTS 2014

In this category, researchers had produced two units and above for DHET accredited publications.

Professor J McKenzie from the Faculty of Applied Sciences was recognised posthumously.

Ranking	Name	Faculty/Institute/Department	Units Allocated
1	Professor F Bux	IWWT	9.46
2	Dr LM Lekhanya	Management Sciences	7.00
3	Professor DS Ilcev	Technology, Transfer & Innovations	6.00
4	Professor N Dorasamy	Management Sciences	5.55
5	Professor K Kanny	Engineering & Built Environment	3.84
6	Dr PE Green	Accounting & Informatics	3.50
7	Professor JA Adeyemo	Engineering & Built Environment	3.06
8	Professor OO Olugbara	Accounting & Informatics	2.99
9	Professor D Brijlall	Applied Sciences	2.83
10	Professor J McKenzie (Posthumous)	Applied Sciences	2.36
11	Professor R Mason	Management Sciences	2.33

TOP JOURNAL PUBLISHERS FOR 2014 ACCREDITED OUTPUTS 2014 (PDFS, RAS & RFS)

In this category, researchers had produced three or more DHET accredited publications.

Ranking	Name	Faculty	Number of Published Accredited Journals
1	Dr LM Lekhanya (RA)	Management Sciences	9
2	Dr SK Gupta (PDF)	Applied Sciences	5
2	Dr N Venugopala	Applied Sciences	5
3	Dr I Skoryk (PDF)	Accounting & Informatics	4
4	Dr A Govender (PDF)	Applied Sciences	3
4	Dr S Kanchi (PDF)	Applied Sciences	3
4	Dr A Giampiccoli	Management Sciences	3

RECOGNITION OF SUPERVISORS

In this category, Supervisors had successfully supervised the most students in the last graduation.

Faculty	Supervisors
ACCOUNTING AND INFORMATICS	Professor OO Olugbara
ARTS AND DESIGN	Professor DD Pratt
APPLIED SCIENCES	Professor S Singh
ENGINEERING AND BUILT ENVIRONMENT	Dr S Rathilal
HEALTH SCIENCES	Dr CM Korporaal
MANAGEMENT SCIENCES	Dr M de Beer

TOP UNIVERSITY FEMALE RESEARCHER OF THE YEAR AWARD

Top University Woman Researcher: In this category, the researcher had to have shown evidence of making a significant contribution to her field of study. The individual must be an academic/academic support staff member at the University, currently involved in research and/or creative productivity and a minimum of 3 units of DHET subsidy for award.

Professor Nirmala Dorasamy from the Department of Public Management and Economics, Faculty of Management Sciences was the awardee.

SENIOR RESEARCHER OF THE YEAR

Senior Researcher of the Year Award: In this category, the researcher demonstrated commendable performance and achievements, providing significant value to the University, as well as demonstrating evidence of making a significant contribution to the relevant field of study on a national/international platform. The impact of research is considerable. The individual must be an academic/academic support staff member at the University, currently conducting research and/or creative productivity and had to have a minimum of four units of DHET subsidy for the award year.

Professor Faizal Bux from the Institute for Water and Wastewater Technology was the awardee.

JUNIOR RESEARCHER OF THE YEAR AWARD

Junior Researcher of The Year Award: In this category, the researcher had to be a faculty member at DUT and must have completed a doctorate within the last 5 years. The researcher had to be currently involved in research and/or creative work and have a minimum of at least two **accredited publication units** for the award year.

Dr Paul Edmund Green from the Department of Finance and Information Management, Faculty of Accounting and Informatics was the awardee.

TOP RESEARCHER IN THE FACULTY

In this category, the researcher had to be an academic staff member at the University, currently conducting research and/or creative productivity and must have published a minimum of 1.5 units of DHET publication subsidy for the award. This category had awardees in one faculty only, viz:

Professor Oludayo O Olugbara from the Department of Information Technology, Faculty of Accounting and Informatics was the awardee.



Research Awards 2015



Research Awards 2015

CREATIVE OUTPUTS OF THE YEAR AWARD

In this category, the researcher had to be an academic/academic support staff member at the University and currently conducting research and/or engaged in creative productivity.

Ms Lee Scott from the Department of Fashion and Design, Faculty of Arts and Design was the awardee.

DOCTORAL STUDENT OF THE YEAR AWARD

In this category, the student had to be a full-time student studying towards a doctoral degree and should have been registered for the programme at DUT for at least a year before the nomination. The applicant should have conducted research and/or creative productivity and should not be a staff member at the time of nomination. The applicant should have published at least one accredited publication unit before nomination.

Dr Abhishek Guldhe from the Institute for Water and Wastewater Technology was the awardee.



Vice-Chancellor Prof Thandwa Zizwe Mthembu with DUT Drama Students
Research Awards 2016

UNIVERSITY RESEARCH AWARDS 2016

TOP UNIVERSITY JOURNAL PUBLISHERS FOR ACCREDITED OUTPUTS 2015

In this category, researchers who produced 2 units and above for DHET accredited publications:

Ranking	Name	Faculty/Institute/Department
1	Professor F Bux	Institute for Water and Wastewater Technology
2	Professor N Dorasamy	Department of Public Management
3	Dr LM Lekhanya	Faculty of Management Sciences
4	Dr A Giampiccoli	Faculty of Management Sciences
5	Professor K Kanniy	Department of Mechanical Engineering
6	Professor JP Govender	Department of Marketing & Retail
7	Professor OO Olugbara	Faculty of Accounting & Informatics
8	Professor MN Sibiya	Department of Nursing
9	Professor DS Ilcev	Space Science Centre (Research & Postgraduate)
10	Professor PE Green	Faculty of Accounting & Informatics

TOP JOURNAL PUBLISHERS FOR 2015 ACCREDITED OUTPUTS (PDFS, RAS & RFS)

In this category, researchers who produced three or more DHET accredited publications

Ranking	Name	Affiliation
1	Dr A Guldhe	Institute for Water and Wastewater Technology
2	Dr S Kumari	Institute for Water and Wastewater Technology
3	Dr P Mohan	Department of Mechanical Engineering
4	Dr E Adetiba	Department of Information Technology
5	Dr A Govender	Department of Chemistry
6	Dr S Ngcobo	Faculty of Arts and Design
7	Dr S Kanchi	Department of Chemistry
8	Dr A Krishnan	Department of Chemistry

RECOGNITION OF DUT NEWLY RATED & RE-RATED RESEARCHERS

The NRF rating system is a key driver in the NRF's aim to build a globally competitive science system in South Africa. It is a valuable tool for benchmarking the quality of our researchers against the best in the world. NRF ratings are based on a researcher's recent research outputs and impact as perceived by international peer reviewers. The rating system encourages researchers to publish high quality outputs in high impact journals/outlets. Rated researchers as supervisors will impart cutting-edge skills to the next generation of researchers.

Name and Surname	Department	Faculty	RATING
National Research Foundation (NRF) newly Rated Researchers			
Professor O O Olugbara	Information Technology	Accounting and Informatics	C3
Professor J D Pillay	Basic Medical Sciences	Health Sciences	Y2
National Research Foundation (NRF)re-rated Researchers			
Professor K Permaul	Biotechnology and Food Technology	Applied Sciences	C2
Professor N Deenadayalu	Chemistry	Applied Sciences	C2

RECOGNITION OF SUPERVISORS

In this category, Supervisors who have successfully supervised the most students in the last graduation:

RANKINGS - FACULTY OF ACCOUNTING & INFORMATICS			
No	Name	Department	No of Units
1	Prof ESD Obono	Information Technology	8
*2	Prof OO Olugbara	Information Technology	4
*2	Dr H Garbharran	Management Accounting	4

** - indicates a tie*

RANKINGS - FACULTY OF APPLIED SCIENCES			
No	Name	Department	No of Units
1	Prof B Odhav	Chemistry	10
*2	Prof N Deenadayalu	Biotechnology & Food Technology	6.5
*2	Prof F Bux	Institute for Water and Wastewater Technology	6.5

** - indicates a tie*

RANKINGS - FACULTY OF ARTS & DESIGN			
No	Name	Department	No of Units
1	Prof D Pratt	Media Language and Communication	6
2	Dr R L Makhubu	Media, Language and Communication	5

RANKINGS - FACULTY OF ENG & THE BUILT ENVIRONMENT			
No	Name	Department	No of Units
1	Prof S Rathilal	Chemical Engineering	10
2	Prof D Allopi	Civil Engineering & Surveying	5

RANKINGS - FACULTY OF HEALTH SCIENCES			
No	Name	Department	No of Units
1	Prof N Sibiya	Nursing	19
2	Prof JK Adam	Biomedical & Clinical Technology	7.5

RANKINGS - FACULTY OF MANAGEMENT SCIENCES			
No	Name	Department	No of Units
1	Prof G Harris	Peace Studies	27.5
2	Dr S Kaye	Peace Studies	11.5

STRENGTHENING POSTGRADUATE SUPERVISION COURSE

This innovative short course was offered through Rhodes University. The three-phase course provided structured support needed by academics as they take on the complex and demanding role of doctoral and masters supervision. The phases consisted of two face-to-face workshops and one online component. The course combines discussions, case studies, research literature, video clips, and numerous other activities and information, both online and face-to-face, to help the new supervisor engage with the practice and process of doctoral supervision in a reflective and informed way.

No	Name	Department
1	Dr Petro Magdalena Basson	Nursing
2	Professor Nokuthula Sibiya	Nursing
3	Dr Alveen Singh	Information Technology
4	Ms Astrid Beverley Badenhorst	Horticulture
5	Dr Duduzile Mzindle	School of Education
6	Ms Michelle Munsamy	Nursing
7	Professor Tukayi Kudanga	Biotechnology and Food Technology
8	Mr Greg Streak	Visual Communication
9	Mr Manduth Ramchander	Operations & Quality Management

SENIOR RESEARCHER OF THE YEAR AWARD

The criteria for this award are: the applicant must be a faculty member at DUT with a doctorate; must be currently involved in research and/or creative work; cannot simultaneously receive this award and the Top University Junior Research Award; must have a minimum of at least four accredited publication units for the award year.

PROFESSOR N DORASAMY from the Department of Public Management and Economics, Faculty of Management Sciences was the awardee.

JUNIOR RESEARCHER OF THE YEAR AWARD

The criteria for this award are: the applicant must be a faculty member at DUT and must have completed a doctorate within 5 years; must be currently involved in research and/or creative work; cannot simultaneously receive this award and the Top University Senior Research Award; must have a minimum of at least two (2) accredited publication units for the award year.

DR M BRAUNS from the Department of Public Management, Law & Economics, Faculty of Management Sciences was the awardee.

INNOVATOR OF THE OF THE YEAR AWARD

The Criteria for this award are: previous recipients of this award are not eligible for nomination within two years of the award; proof-of-concept prototypes do not qualify; the entry must be in working marketable readiness; any new technical product or process that was first available for purchase or licensing between 1 January and 31 December of the previous calendar year is eligible for the current year's nominations.

PROFESSOR EO AMONSOU from the Department of Biotechnology and Food Technology, Faculty of Applied Sciences was the awardee.

RESEARCH GROUP OF THE YEAR AWARD

The criteria for this award are: the applicant must be a faculty member at DUT and a group leader who has completed a Doctorate; must be currently involved in a research group of 5 or more people; must show evidence of making a significant contribution to their field of study; previous recipients are not eligible; group leader may simultaneously be nominated for this award and Top Senior Research Award and a minimum of six (6) accredited publication units in the reporting year.

PROFESSOR K KANNY from the **COMPOSITE RESEARCH GROUP**, Department of Mechanical Engineering, Faculty of Engineering and the Built Environment was the awardee.

FACULTY RESEARCHER OF THE YEAR AWARD

The criteria for this award are: the applicant must have been at DUT for minimum of one academic year before nomination; must be an academic staff member currently conducting research and/or creative productivity; must have a minimum of 1.5 accredited publication units for the award year; units for postgraduate students are not included in this calculation.

FACULTY OF ACCOUNTING & INFORMATICS

PROFESSOR PE GREEN

FACULTY OF APPLIED SCIENCES

PROFESSOR K BISETTY

FACULTY OF ARTS & DESIGN

DR S LAND

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

PROFESSOR K KANNY

FACULTY OF HEALTH SCIENCES

PROFESSOR MN SIBIYA

FACULTY OF MANAGEMENT SCIENCES

PROFESSOR N DORASAMY



Research Awards 2016

ASSOCIATE PROFESSORSHIPS AWARDED IN 2015

Professor C Meintjes

Department of Marketing and Retail Management

Faculty of Management Sciences

ASSOCIATE PROFESSORSHIPS AWARDED IN 2016

Prof. PE Green	Department of Finance and Information Management
Prof. E O Amansou	Department of Biotechnology and Food Technology
Prof. I J Lazarus	Department of Physics
Prof. F M Swalaha	Department of Biotechnology and Food Technology
Prof. S Rathilal	Department of Chemical Engineering
Prof. J D Pillay	Department of Basic Medical Science
Prof. S Singh	Department of Operations and Quality Management

PROFESSORSHIPS AWARDED IN 2016

Professor M Govender Department of Physics



THE ACADEMY OF SCIENCE OF SOUTH AFRICA (ASSAf)

We would like to congratulate Professor Faizal Bux for his inauguration as the first "DUT Timber" member of ASSAf. ASSAf is the South African Academy of Science of South Africa. DUT nominated Prof Bux and we are glad that the nomination was successful.



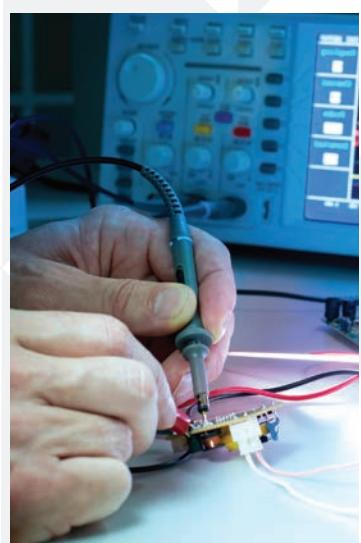
Research Awards 2016



Research Awards 2016









POSTGRADUATE DASHBOARD



FACULTY OF ACCOUNTING AND INFORMATICS

DR MOGIVENY RAJKOOMAR

DEPARTMENT OF INFORMATION AND CORPORATE MANAGEMENT

Dr Rajkoomar's doctoral research was titled "The development of a framework for blended learning in the delivery of Library and Information Science curricula at South African universities".

The many challenges that face South African Higher Education include: the diversity of the student body, student protests, cost efficiency, achieving measurable outcomes, the potential of new and advanced technologies to provide personalized learning while still adhering to the traditional ideas of the purpose of education. The increasing use of the Internet and digital technologies by higher education students calls for a transformation of the teaching and learning environments in higher education settings. However, this transformation should be facilitated by careful choice of, and effective combination of various modes of delivery, models of teaching and styles of learning achieved through effective communication.

This study, firstly, explored the impact of technologies in the delivery of LIS curricula at South African universities in terms of the instructional design and implementation of blended learning as well as, using more transformative and interactive teaching and meaningful learning practices in LIS education. The study focused on exploring the educational and pedagogical aspects in the use of blended learning with the aim of developing a framework for effective and meaningful blended learning in the delivery of LIS curricula.

The key findings of the study revealed that blended learning remained a complex concept with no clear consensus on the key components that needed to be blended. This flexibility, to an extent, allows for institutions to tailor the concept and maximise the potential of blended learning while still being responsive to the diverse student populations at South African higher institutions. The use of blended learning has the potential to transform LIS education and training by encouraging LIS educators to reflect on their teaching and learning practices and to use the proposed framework as a guideline to design pedagogically sound blended learning interventions for LIS education and training and in higher education generally.

FACULTY OF ARTS AND DESIGN

MR KUNLE OPARINDE

DEPARTMENT OF MEDIA, LANGUAGE AND COMMUNICATION



Mr Oparinde's research was titled *A Comparative Socio-semiotic Perspective of Invectives in isiZulu and Yoruba Languages*. Motivated by the paucity of academic literature on invective-related studies and other stereotypes in human communication, the research focused on the socio-cultural factors embedded in the Zulu and Yoruba cultures in their approach of invectives. Over the years, there have been attempts by academics to study issues of politeness in different languages while impoliteness has been greatly neglected in intellectual discourse. Hence, the reason to study language from a relatively unaccustomed and unfamiliar perspective. The study examined a comparative taxonomy of invectives in the two African languages not only from diction but also visual images/signs that can translate to impoliteness. The research findings were that invectives are context and culture-dependent as well as humanly-determined. The study further revealed striking similarities and differences in the invective-related discourses of isiZulu and Yoruba. Finally, the study noted that studies in invectives and related issues are good means of enlightenment and could be useful in reducing intercultural misuses, misrepresentations and avoidable communication breakdown especially in Africa where the same word/signs may have different interpretations in divergent cultures.

A presentation on the study was delivered at the 18th International Conference of the African Language Association of Southern Africa (ALASA) held between 24th and 25th of June 2016 in Cape Town. Being a new dimension of research in the field of linguistics, the study resonates with the theme of the conference: New Directions and Perspectives in African Language Research in the 21st Century.

A journal publication on the study is currently being reviewed by the Journal of African Languages and Linguistics.



FACULTY OF HEALTH SCIENCES



DR THEMBELIHLE NGXONGO

DEPARTMENT OF NURSING

Dr Ngxongo was registered for the Doctor of Nursing in 2013 and graduated in April 2016. Her research experience was challenging but rewarding at the end. There were several instances when she considered quitting. However, Dr Ngxongo credits her colleague and companion Dr DG Sokhela, who gave her unconditional support and encouragement to continue. Dr Ngxongo also credits both her supervisors Professor MN Sibya and Professor NS Gwele for shaping her research project into a professional thesis from the beginning to the end of her doctoral studies. Dr Ngxongo expresses her sincere gratitude to the SANTRUST Predoctoral project as this helped with making the doctoral journey manageable even though attending the SANTRUST workshops in Cape Town came with its own challenges especially with regards to finances for travelling and accommodation; but the information gained from these workshops was incomparable to these challenges. She would also like to thank her colleagues from the Department of Nursing for accommodating and supporting her during this period and her appreciation goes to DUT as an institution, Institutional Research and Postgraduate Support Directorate, the Faculty of Health Sciences the Nursing Department and the gate-keepers for the eThekini District where she collected the data, PHC managers and the study participants. During her studies, Dr Ngxongo's family life was severely under strain as several of her close relatives were critically ill, a number of them passing on which included her father and her sister. Dr Ngxongo expresses her sincere gratitude and thanks to her surviving family members who gave her the support and the strength to cope with the crisis and continue with her studies. Dr Ngxongo also expresses her thanks to the NRF, SANTRUST and FUNDISA and DUT for the financial support which made it possible for her to cover the financial requirements of her studies.



DR BUSISIWE A NDLOVU

DEPARTMENT OF NURSING

Dr Busisiwe A Ndlovu, recently graduated as a Doctor of Nursing. The title of her research was: A model to improve the quality of life for elderly people living in a rural setting of uThungulu district, KwaZulu-Natal. The study aimed at developing a model that would improve the quality of life for elderly people living in the uMhlathuze and uMlalazi sub-districts of the uThungulu district, KwaZulu-Natal.

Dr Ndlovu had to initially submit a concept paper on the study. The feedback received was invaluable and it further encouraged her to continue with this study. Dr Ndlovu was allocated a supervisor and a co-supervisor, Professor Nokuthula Sibya and Professor Puckree respectively who took her through expectations, time frames and the administrative process of the whole research. The contact sessions with her supervisor helped, giving her guidance and direction.

The supervisors have a wealth of knowledge and critiqued her work from different angles. The platforms: DRC and RHDC where she presented her work were useful and positive criticism was given and helped in broadening the scope of her work.



FACULTY OF HEALTH SCIENCES



DR DUDU SOKHELA

DEPARTMENT OF NURSING

Dr Dudu Sokhela is a Primary Health Care (PHC) lecturer at the Durban University of Technology's (DUT) Department of Nursing. She started her nursing career in 1979 with training as a General Nurse at McCord Hospital. She then proceeded to King Edward VIII Hospital for Midwifery in 1982 and Community Health Nursing in 1991 at Mangosuthu Technikon. PHC was her area of specialization when she pursued a Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care. In 1998, she obtained a B Cur degree at the University of South Africa, with majors in Nursing Education and Nursing Management before obtaining a Master's Degree at DUT in 2011.

Over the years, she has gradually grown through the ranks, from professional nurse to senior professional nurse then nursing service manager. Her doctoral research journey began with her acceptance into the Nursing Pre-Doctoral Programme by SANTRUST South Africa in 2012. One week a month, for six months, she attended workshops in Cape Town where local and international researchers particularly from Dublin University in Ireland, facilitated workshops and guided her through study. Through these workshops, she developed as a researcher and is grateful to DUT's Research and Postgraduate Directorate, the Dean of Health Sciences and the Department of Nursing for their support. The doctoral journey was challenging, and she had to overcome being overwhelmed by work demands, family, financial and health challenges. Support from Professor MN Sibiya (Supervisor) and Professor NS Gwele (Co-supervisor) enabled her to pull through and graduate in April 2016. Since obtaining her doctoral degree, she has published five papers in accredited journals. She has also successfully supervised three Masters Students and is currently supervising and co-supervising nine Masters Students and one Doctoral student.



MS URSULA SMITH

DEPARTMENT OF NURSING

Ms Smith's study was on "The effects of information technology on the delivery of nursing care: A comparative study". Ms Smith has indicated that completing her research was a rewarding, albeit challenging experience as she needed to balance the time spent on the research with that spent at work and in her personal life. Ms Smith was ready to give it all up at one stage when nobody wanted to participate in her study. It was through this process that it dawned on her that she would always be willing to help future researchers in whatever capacity that she could. Ms Smith credits the completion of her studies to the support and guidance of her Supervisor whose expert knowledge of research directed her throughout the study. During the study there were compulsory workshops that the students had to attend. These workshops helped refine their skills as researchers.



World Congress of Chiropractic Students
Durban University of Technology



MESSAGE FROM THE WCCS DUT Chapter Chair

MR MYNHARDT ERASMUS

The WCCS-DUT Chapter celebrated World Spine Day this year by putting the emphasis on the SPINE.

The word SPINE was broken up into letters that would best emphasise the needs of the community in Durban, South Africa and ended up with 5 mini events, one for each letter of the word SPINE.

First off for "S", the "Straighten Up South Africa program" with the kids and staff members from Durban Children's Home with whom the WCCS-DUT Chapter has built a bond with over the past year. The staff members were taught on how to exercise to take better care of their backs and the kids joined in, also learning about the benefits of taking care of the spine from an early age, as one day, they too will enter the work force.

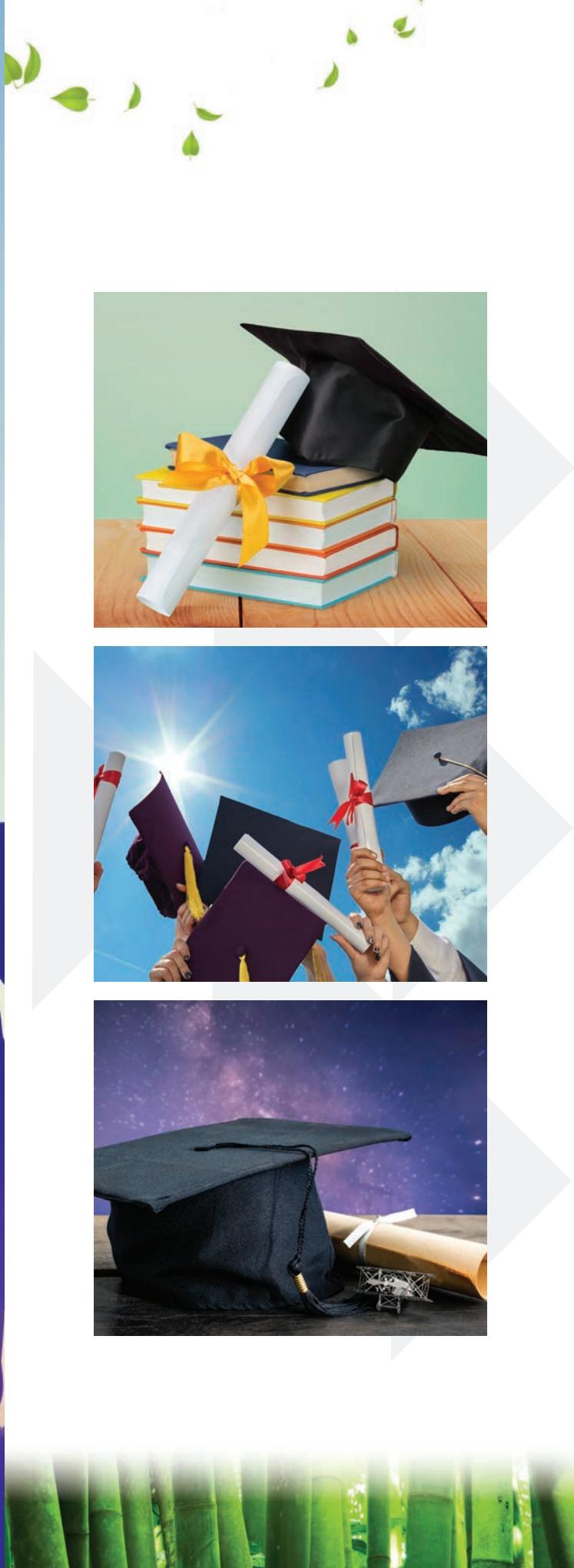
For "P", an early morning (7am) beach "Pilates" class at North Beach in Durban. This event was open to the public and the time was decided to be before the normal work day, so everyone is energised and ready for a day at the office. This event was also to emphasise the importance of what strengthening the core muscles and stretching can do for posture and how routine exercise can increase your overall health and performance in the workplace.

The letter "I" represented 'Information'. The WCCS-DUT Chapter thought by educating the public about spinal health and providing information about chiropractic care and local availability thereof they could provide the knowledge that individuals could use for a lifetime of spinal health. The WCCS-DUT Chapter has great passion for sharing knowledge as they believe that by sharing knowledge about spinal health, they are not just helping someone today, but are equipping them with the knowledge of taking care of their spines in the long run. Good spinal health is important for daily activities such as going to work, class, etc.

For the "N" event, the focus was on "Nutrition". Good nutrition impacts on the body and daily lives. Therefore, the WCCS-DUT Chapter decided to provide nutritional parcels to the homeless people in the community, so that they could also reap the rewards of a healthy immune system and nutritional state, thereby increasing their chances of finding employment opportunities and entering the work force. Food parcels contained items such as sandwiches, fruits and drinks.

The "E" event focussed on "Exercise". The WCCS-DUT Chapter appreciates the effect daily exercising has on your health and general wellbeing. The WCCS-DUT Chapter also promoted chiropractic by wearing the chiropractic shirts and talking to other runners about chiropractic and spinal health. More information was provided to the runners of our local chiropractic student clinic at DUT.

As the theme for this year's World Spine Day was "Your Back at Work", a whole-body approach was utilized to illustrate ways to better improve your spinal health including posture, stretching, exercise, nutrition and education.





MASTERS AND DOCTORATE GRADUATES

MTECH AND DTECH GRADUATES SEPTEMBER 2015

FACULTY OF ACCOUNTING & INFORMATICS			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
MTech: Accounting	MB Cloete	The impact of the integrated assessment on the critical thinking skills of the first-year Extended Curriculum Programme students in the Department of Management Accounting at the Durban University of Technology	Dr HL Garbharran
DTech: Information Technology	S Thakur	System architecture for secure mobile internet voting	Prof OO Olugbara Prof R Milham
MTech: Information Technology	ST Obafemi	Advantages and disadvantages of E-Learning in primary and secondary schools in context of developing countries.	Prof SDE Obono
	KE Oyetade	Early introduction of cost effective e-learning ICT in schools	Prof SDE Obono
	Y Aiyaduria	Hippocratic data sharing in e-government space with contract management	Prof OO Olugbara Prof T Nepal
	DO Adebehingbe	Factors affecting computing students' awareness of the latest ICTs	Prof SDE Obono
PhD: Library and Information Science	M Rajkumar	The development of a framework for blended learning in the delivery of library science and information curricula at SA universities	Prof J Raju
MTech: Library and Information Science	S Makhathini	The preparedness of subject librarians to meet the challenges of information technology in higher education institution in KwaZulu-Natal.	Dr N Sentoo
	S Mayowa	Examining the perceived reliability of Cost Effective E-learning handsets for teaching and learning in Secondary Schools	Prof SDE Obono

FACULTY OF APPLIED SCIENCES			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
MTech: Biotechnology	K Kasumbwe	Biological activities of seven synthesis substituted halogenated coumarins	Prof B Odhav Dr V Mohanlall Dr KN Venugopala
DTech: Chemistry	Z Tywabi	Processing of dissolving pulp in ionic liquids	Dr B Sithole Prof N Deenadayalu

FACULTY OF ART & DESIGN			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
MTech: Fashion	ST Akal	Costuming Gender: An investigation into the Construction of Gendered identity through Drag Costume in Mainstream Film	Ms N Madhoo-Chipps Prof B Pearce
	M Cavanagh	An analysis of modular fashion for the purpose of being fashionably sustainable	Prof T Meyiwa Ms S Moodley
MTech: Fine Art	VA Van Wyk	Narratives of the mind: performativity in art as reconstruction of the self in addressing conditions of depression.	Dr J Roome Dr K Wells
	J De Vries	An investigation of cultural dislocation in the work of selected artists	Mr A Starkey Dr J Roome
MTech: Language	L Els	The impact of medium of instruction on the learning of Computer Application Technology in tertiary teacher education	Prof D Pratt Prof P Siyakwazi
	OT Adekunle	A linguistic relatively appraisal of an African drama: the Lion and the Jewel	Dr RL Makhubu Ms CN Ngwane
	TR Khumalo	Interpreting services provided during consultations in the medical sector: identifying shortcomings	Dr RL Makhubu
MTech: Photography	LK Du Plessis	Through the lens of Google: development of lecturing practice in photography	Dr D Timm Mr P Carey

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT			
DEGREE	NAME	IREC APPROVED TITLE	SUPERVISORS
MTech: Chemical	EN Alfa	Development and Evaluation of a Small-Scale Water Disinfection system	Dr S Rathilal Prof VL Pillay
	TS Dlamini	Development of a small water treatment system for fluoride removal	Dr S Rathilal Prof VL Pillay
	RL Pambi	Feasibility of using Chitosan as a coagulant in the treatment of sugar refinery effluent	Prof P Musonge
	K Pikwa	Development and evaluation of flux enhancement and cleaning strategies for woven fibre microfiltration membrane in production of potable water.	Dr S Rathilal Prof M Carsky
	ND Sincuba	Effect of tray design on the performance of a vibrating plate Extraction column	Dr S Rathilal Prof M Carsky
	V Thorusley	Development of a flat sheet woven fabric membrane fermenter for xylanase production by Themomycetes lanuginosus	Dr S Rathilal Prof S Ramsuroop Prof VI Pillay
	RR Mwaipungu	The formulation and application of gravel roads in Iranga region Tanzania	Prof D Allopi
DTech: Civil and Surveying	S Hariparsad	Exploring industries contribution to the curriculum design of the Civil Engineering programs at Universities of Technology A case study of the DUT	Prof P Ramrathan Prof Dhiren Allopi
	BP Khuzwayo	Improving Efficiency in the Design, Manufacturing and Construction of the Beam and Block Slab System	Mr Pieter AW Boorsma Prof M Walker
MTech: Civil and Surveying	DG Stuart	The development of a teaching tool using Google Sketchup to enhance surveying competence at the Durban University of Technology	Prof K Landman Prof D Allopi
	NT Adugna	A study of the causes of cost overrun and delay in office construction Project around Durban, South Africa	Dr PL Utting
MTech: Industrial	H Jackson	Learning styles, Teaching Methods, and Student Performance in Industrial Engineering at a University of Technology	Prof T Andrew
DTech: Mechanical	M Gilpin	Material characterisation for the modelling of the vacuum infusion process	Prof D Johnson

FACULTY OF HEALTH SCIENCE			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
DTech: Biomedical Technology	CJ Grobler	Impact of vitamins B12, B2 and folate supplementation on the cardiovascular risk markers in an elderly community of Sharpeville	Prof WH Oldewage-Theron Prof JK Adam Prof C Napier
DTech: Clinical Technology	SC Benjamin	Contribution factors affecting erythropoiesis and analysis of erythropoiesis bioassay in renal patients in KwaZulu-Natal.	Prof JK Adam Prof Assounga
MTech: Clinical Technology	MM Henema	Infective endocarditis at Dr George Mukhari Hospital: correlating echocardiography findings with intra-operative findings.	Prof JK Adam Prof PS Mutla
MTech: Chiropractic	C McAlery	An analysis of injury profiles and management strategies utilized by chiropractic students at the 2014 Durban 'Rugby Rush Tournament'	Dr G Haswell
	MMA Crestani	An Epidemiological investigation into primary headaches in an adolescent population in public high schools in the Westville Ward of the Pinetown School District	Dr D Varatharajulu
	CAB Da Silva	A profile of injuries among participants at the 2013 Crossfit Games in Durban	Dr N Gomes
	MJ McBean	An Injury surveillance of patients utilising the Durban University of Technology (DUT) Chiropractic Treatment Facilities at the 2013 World Transplant Games.	Dr H White Dr D Nook
	A Rajballi	The relative effectiveness of homoeopathic simillimum versus oral Traumeel in the treatment of acute mechanical neck pain	Dr I Botha Dr AH De Waard
MTech: Homoeopathy	SF Majola	The perceptions of homoeopathic doctors practicing in KwaZulu-Natal on their role in the public healthcare system in South Africa	Dr I Couchman Dr K Erwin
	K Naidoo	A double blind placebo controlled proving and comparative Material Medical of Ubichimon 30CH	Dr I Botha
	PSG Khumalo	Patients' experiences of homoeopathy care rendered at a primary health café facility in the eThekweni district.	Dr CM Hall Prof MN Sibiya

FACULTY OF HEALTH SCIENCES

PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
MTech: Radiography	NP Gam	Occupational stressors in diagnostic radiographers working in public health facilities in the eThekweni District of KwaZulu-Natal	Prof T Puckree Mrs S Naidoo
	S Ackah	The association of demographics and occupational factors with Latent Tuberculosis Infection in radiology staff at public sector hospitals in the eThekweni Health District.	Mrs LD Swindon Dr S Naidoo
MTech: Somatology	S Nkwanyana	An investigation of the professional relationship between somatologists and medical professionals practising non-invasive aesthetic and anti-aging medicine in eThekweni	Prof A Mosam Mrs D Borg
MTech: Nursing	NH Cele	Experience of Homosexuals' access to primary health care services at Umlazi, KwaZulu Natal	Prof MN Sibya Ms DG Sokhela
	ST Madlala	Perceptions of young males at the Free State School of Nursing with regards to teenage pregnancy	Prof MN Sibya Ms TSP Ngxongo
	TM Sinqotho	Case Based Learning in the undergraduate Nursing programme at the University of Technology: A case study	Prof JK Adam Prof MN Sibya
	SY Beepat	The influence of peer mentoring on the critical care nursing student's learning outcomes	Prof MN Sibya Ms TSP Ngxongo
	P Maharaj	Evaluating the use of nursing care plans in general practice at a level 3 hospital in the uMgungundlovu District of KwaZulu-Natal: a case study	Prof AHA Ross Ms SD Ngcobo
	NN Mazibuko	Experiences of community care givers caring for clients suffering from Tuberculosis in eThekweni District, KwaZulu-Natal	Prof MN Sibya Ms TSP Ngxongo
	L Maharaj	Perceptions of professional nurses towards alternative therapies in the uMgungundlovu District, South Africa	Prof R Bhagwan Prof MN Sibya
	P Singh	Causes and effect of student nurses absenteeism at the KwaZulu-Natal College of Nursing	Prof MN Sibya

FACULTY OF MANAGEMENT SCIENCES

PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
Masters of Management Sciences: Business Administration	NP Mbatha	An investigation of selected financial management fundamentals influencing financial stability of small and medium enterprises in Durban.	Dr M de Beer
	SM Ngubane	Identifying and examining the nature and extent of external factors influencing growth and development of selected SMMEs in Durban	Dr M de Beer
Masters of Management Sciences: Public Management	M Awung	Factors influencing the career progression of women in higher education: The case of the Durban University of Technology	Prof N Dorasamy
	ME Moloantoa	Factors affecting job satisfaction of academic employees: A case study of the National University of Lesotho.	Prof N Dorasamy
Doctorate of Management Sciences: Public Management (Peace Studies)	JO Adebayo	Building capacity for conflict-Sensitive Reportage of elections in Nigeria.	Prof GT Harris
Masters of Management Sciences: Public Management (Peace Studies)	A Katembo	Reducing cases of gender based violence in Mashonaland Central Province, Zimbabwe	Prof GT Harris
Doctorate of Management Sciences: Marketing	N Govender	Magazines' representation of women and the influence on identity construction	Prof VP Rawjee
	RO Adebayo	The use of marketing tactics by the church in fulfilling its social mandate in KwaZulu-Natal.	Prof JP Govender
Masters of Management Sciences: Marketing	KS Msosa	Assessing customer service in the Malawian Public Postal Services.	Prof JP Govender
Masters of Management Sciences: Tourism	S Ramouthar	Aligning Private Higher Education and Tourism Employment in KwaZulu-Natal	Dr KM Naidoo

MASTERS AND DOCTORATE GRADUATES APRIL 2016

FACULTY OF ACCOUNTING AND INFORMATICS			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISOR
Degree of Masters of Information and Communications Technology	M L Lingwati	The ease of use and perceived usefulness of a selected computer game in expanding vocabulary in English among students at a University of Technology	Prof R. Millham Dr D Heukelman
Degree of Masters of Accounting	M W Khanyile	Evaluation of financial accountability, financial control and financial reporting at Umtshezi Municipality: A case study	Dr HL Garbharran
	O A Tajelawi	Using Material Flow Cost Accounting to determine the impacts of packaging waste costs in alcoholic beverage production in an alcoholic beverage company in Durban	Dr HL Garbharran
FACULTY OF APPLIED SCIENCES			
PROGRAMME	STUDENT NAME	IREC APPROVED TITLE	SUPERVISOR
PHD: Biotechnology	MS Mthembu	Removal of organic and inorganic nutrients in a constructed rhizofiltration system using macrophytes and microbial biofilms	Dr F Swalaha Prof F Bux
MASTERS: Biotechnology	R Govender	Pharmacological screening of substituted 1,4 Dihdropyrimidines	Prof B Odhav Dr KN Venugopala
	L Naicker	Pharmacological screening of synthetic piperidine derivatives	Prof B Odhav Dr KN Venugopala
MASTERS: Chemistry	SB Chule	Thermodynamic properties of 1-ethyl-3-methylimidazolium ethylsulphate with nitrogen and sulphur compounds at T=(298.15) K and P= 1 bar	Prof N Deenadayalu
	LD Mthembu	Production of levulinic acid from sugarcane bagasse	Prof N Deenadayalu Dr P Reddy
	MB Nduli	Thermophysical properties of biofuel components derived from biomass	Prof N Deenadayalu
MASTERS: Food and Nutrition	Khuluse	Food hygiene and safety practises of food vendors at a University of Technology in Durban	Prof CE Napier Ms H Grobbelaar
	T Naidoo	Evaluation of nutrition information embedded in the grade 8 to 12 Kwa-Zulu Natal school curriculum	Prof CE Napier
	S Vardan	Health indicators and nutritional profile of staff at a training institution as a foundation for the development of nutrition wellness education material	Prof CE Napier
FACULTY OF ARTS AND DESIGN			
PROGRAMME	STUDENT NAME	IREC APPROVED TITLE	SUPERVISOR
MASTERS: Fashion	CJ Walters	How do I improve my practise as a bridal gown designer in a highly competitive market? A practise-based action research self-study	Ms L Scott Dr J Roome
	R Naidu	Fashion entrepreneurship: Best practises in establishing and sustaining small to medium clothing and fashion enterprises	Prof D Penceliah Ms S Moodley
DOCTORATE: Language Practise	L Govindsamy	A critical linguistic analysis of the discourse on religious observances in public schools to establish the hegemonic influence of colonial religious observances and their effect on school populations	Prof DD Pratt Dr D Moodley
MASTERS: Language Practise	NL Mnyandu	The provision of interpreting services in isiZulu and South African sign Language in some of the courts in KwaZulu-Natal	Dr RL Makhubu
	KM Oparinde	A comparative socio-semiotic perspective incentive in isiZulu and Yoruba languages	Dr RL Makhubu Prof I Bariki

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

PROGRAMME	NAME	TITLE OF STUDY	SUPERVISOR CO-SUPERVISOR
MASTERS: Chemical Engineering	C P Dlamini	Evaluation of micro-scaled TiO ₂ on Bacterial Degradation and Recovery of TiO ₂ from Treated Water	Prof P Musonge
	T P Makhathini	Investigation of BTEX compounds adsorption onto Polystyrenic Resin and GAC for Process Modelling	Dr S Rathilal
MASTERS: Mechanical Engineering	B R Graham	Analysis of national Diploma and Btech Student Success in Mechanical Engineering at the Durban University of Technology	Prof M Walker
	H C Tshimbiluni	Optimisation of the Warm Up Process of the Tyre Compression Mould for the Tyre Manufacturing Industry	Prof PY Tabakov Mr G Thurbon
MASTERS: Electrical (Light current)	J D Y Dakora	Design and Implementation of a 3-Phase 4 Quadrant variable Speed Drive for Permanent Magnet Brushless DC Motors	Dr P Govender Mr N Pillay
	A D Dhaniram	The Development of SCADA Control and Remote Access for the Idlebe Radio Telescope	Mr GP Janse van Vuuren Dr P Govender
MASTERS: Electrical	S Sewdass	Design and Development of a Process Control Valve Diagnostic System	Dr P Govender
	AT Jaiyeola	Estimation of Suspended Sediment Yield into Inanda Dam using Genetic Programming	Prof J Adeyemo Prof F Otieno
MASTERS: Civil	TI Mashiyane	Hydrological Modelling under Limited Data Availability: Case Study of uMdloti River	Prof J Adeyemo
	LT Mwelase	Non-Revenue Water: Most suitable Business Model for Water Service Authorities in South Africa - UGU District Municipality	Dr B Dzwairo Prof F Otieno
	BNS Ntuli	Factors Associated with Insolvencies among Civil Engineering Contractors	Prof D Allopi

FACULTY OF HEALTH SCIENCES

PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISOR
MTech: Chiropractic	J Basdav	The prevalence and impact of headaches on students at the Durban based campuses of the Durban University of Technology (DUT)	Prof T Puckree Dr F Haffejee
	LS Eloff	The Impact of cervical spine radiographs in the diagnosis and management of patients that presented with neck pain to the Chiropractic Day Clinic at the Durban University of Technology	Dr G Harpham Dr S McPhail
	MC Benporath	A musculoskeletal injury profile of league tennis players in the northern eThekweni region	Dr G Haswell
	BJ Lombard	An investigation into the patient management protocols of selected cervical spine conditions by Chiropractors in KwaZulu-Natal	Dr NL De Busser
	G Van Niekerk	An injury profile and management analysis of marathon runners at selected marathons in the greater eThekweni and uMgungundlovu Municipalities during 2014	Dr C Korporaal Dr AN Gomes
	H Cawood	Knowledge, Understanding and Perceptions of Parents Towards the Utilisation of Chiropractic Treatment for Paediatric Patients in the Durban Metropolitan area	Dr P Basson Dr P Maharaj
	JL Redman	The correlation between the suspected clinical diagnoses and the radiographic diagnoses for patients with shoulder pain	Dr J Shaik
	V Bramuzzo	A psychometric profile of patients attending the Durban University of Technology Chiropractic day clinic with non-specific low back pain	Dr PZ Twala Ms A Essack
	JA Botes	The effect of four different manipulative techniques on Iliotibial Band Friction Syndrome (ITBFS) in terms of primary and secondary outcome measures	Dr AN Gomes Dr C Korporaal
	A Makowe	The effectiveness of the Impulse iQ® Adjusting Instrument compared to Ischaemic compression in the treatment of upper trapezius myofascial trigger points in participants with non-specific back pain	Dr D Varatharajulu
	HJ Myburgh	The impact of thoracic spine radiographs in the diagnosis and management of patients who present with thoracic spine pain at the Chiropractic Day Clinic at the Durban University of Technology	Dr G Harpham Dr S McPhail

FACULTY OF HEALTH SCIENCES

PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISOR
MTech: Chiropractic	S Kleingeld	An investigation into the diagnosis and management of patients presenting with selected headaches by chiropractors in the greater Durban area	Dr GD Matkovich
	DA Jack	The prevalence of and risk factors associated with musculoskeletal injuries in Mixed Martial Arts athletes in the greater Durban area	Dr G Haswell
	ISM Mateus	The prevalence and profile of musculoskeletal pain in elite wheelchair basketball players of different point classifications in South Africa	Dr JD Pillay Dr K Padayachy
	DM Rankin	The intra and inter examiner reliability of the radiographic assessment of the cervical lordosis	Dr J Shaik
	J Puttergill	Immediate effect of two myofascial interventions on navicular position, great toe extension and balance measures in asymptomatic subjects with pronation - placebo controlled	Dr HM Kretzman
Masters of Health Sciences: Medical Laboratory Science	V Malapermal	In vitro evaluation of the Antidiabetic and Antimicrobial properties of Ocimum species (<i>O. sanctum</i> <i>O. basilicum</i> (L.))	Ms JN Mtshali Dr I Botha Dr K Suresh Babu Naidu
Masters of Health Sciences: Clinical Technology	K Pillay	Comparative in vitro analysis of a balanced electrolyte solution versus an unbalanced electrolyte solution, for processing of residual pump blood using cell saver for patients undergoing elective cardiac surgery	Prof JK Adam Mr MJ Mohapi
Masters of Health Sciences: Dental Technology	SC Onwubu	Using eggshell for the development of a quality alternative material to pumice in reducing the surface roughness of heat-cured acrylic resins	Dr A Vahed Dr S Singh Prof K Kanny
Masters of Health Sciences: Emergency Medical Care	K Moodley	An investigation into the clinical practicum experience of ALS paramedic students and their preparedness for professional practice	Prof R Bhagwan Mr R Naidoo
	R Cermak	An investigation into recognition of prior learning within the National Certificate: Emergency Care Programme in the Western Cape	Prof R Bhagwan Mr R Naidoo
	G Mdlozini	A situational analysis and knowledge, attitudes and practices (KAP) study of waste management and recycling at the Durban University of Technology	Prof P Reddy Mr G Barratt
Masters of Health Sciences: Environmental Health	T Govender	The impact of access to antenatal care on maternal health outcomes among young adolescents on the North coast of KwaZulu-Natal, South Africa	Prof P Reddy Ms S Ghuman
	P Ramal	The association between acute childhood diarrhoea and diarrhoeagenic <i>E. coli</i> present in contaminated soil in informal settlements in Durban	Ms J Kistnasamy Prof AO Olaniran
	RH Hull	A group analysis evaluation of selected psychoactive plant remedies in terms of known <i>materia medica</i>	Dr CM Hall
	G Kleingeld	A comparison between the efficacy of radionically prepared gibberellic acid and Homoeopathically prepared gibberellic acid (GHP) on the germination rate and seedling development of barley seeds	Dr D Naude Prof AT Modi
MTech: Homoeopathy	M Laidlaw	A homoeopathic drug proving of <i>Withania somnifera</i> 30CH	Dr M Maharaj Dr N Somaru
	NC Shange	The efficacy of a Phytotherapeutic complex consisting of <i>Angelica sinensis</i> , <i>Dioscorea villosa</i> , <i>Matricaria chamomilla</i> , <i>Viburnum opulus</i> and <i>Zingiber Officinalis</i> compared with the homoeopathic simillimum in the treatment of Primary Dysmenorrhoea	Dr CM Hall
	EC Taylor	The efficacy of a homoeopathic protocol as an adjunct to standard care of the post-surgical effects of circumcision	Dr I Couchman
	SA Marsh-Brown	A comparative study of the NMR spectra of Sulphur 12CH prepared using Hahnemannian method and sonication	Prof AHA Ross Dr I Botha
	BR MoonSAMY	A double-blind placebo controlled homoeopathic proving of <i>Malus domestica</i> 30CH with a subsequent comparison of proving symptomatology to homoeopathic remedies of reportorial similarity	Dr M Maharaj Dr N Somaru
	PB Mkhize	A comparison of the efficacy of <i>Syzygium Jambolanum</i> (Java Plum) 6CH and <i>Syzygium Jambolanum</i> (Java Plum) homoeopathic mother tincture in the treatment of Type 2 Diabetes Mellitus in patients on Metformin*	Dr M Maharaj Ms J Ducray

FACULTY OF HEALTH SCIENCES

PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISOR
MTech: Homoeopathy	P Pramlall	A retrospective clinical audit of the Durban University of Technology homoeopathic satellite clinic in Redhill	Dr I Couchman Dr S Nienaber
	KJ Love	A study of the perceptions and experiences of patients receiving homoeopathic care in the context of primary healthcare services within the public sector	Dr CM Hall Dr TL Crankshaw
Doctor of Health Sciences: Nursing	DG Sokhela	The Fast Queue Service Point: the analysis of the quality of care for primary health care users in eThekweni District, KwaZulu-Natal	Prof MN Sibya Prof NS Gwele
	TSP Ngxongo	Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal	Prof MN Sibya Prof NS Gwele
Masters of Health Sciences: Nursing	NC Gqada	The use of dance and music programme on the functional ability of the residents of an old age home in Pietermaritzburg, KwaZulu-Natal	Prof T Puckree Ms S Govender
	V Govender	An evaluation of the culture of patient safety as a critical element of healthcare in a public hospital in Durban, KwaZulu-Natal	Prof AHA Ross
Masters of Health Sciences: Radiography	UA Smith	The effects of information technology on the delivery of nursing care: a comparative study	Dr P Basson
	JM Thambura	An investigation of the factors impacting on the retention of radiographers in KwaZulu-Natal	Ms LD Swindon Dr F Peer

FACULTY OF MANAGEMENT SCIENCES

PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
Masters of Management Sciences: Business Administration	Mr K Govender	The management of electronic waste: A case study of the Umboqintwini Industrial Complex and Southgate business park in KwaZulu-Natal, South Africa	Dr S Chetty
	Mr TR Ncube	The intrinsic motivational factors on small and medium business growth: a study on the furniture manufacturing sector in the Etheekweni Metropolitan Area	Dr RWD Zondo
	Ms XP Simamane	The influence of transformation on Financial performance of operational level of retail business: A case study	Dr RWD Zondo
	Ms G Nze	Exploring South African fast moving consumer goods Small, Medium and Micro Manufacturers need for innovation to achieve growth in KwaZulu-Natal	Dr LM Lekhanya Prof N Dorasamy
Doctorate of Management Sciences: Marketing	Ms SB Hussain	The role of relationship marketing at non-profit organisation in KwaZulu-Natal	Prof VP Rawjee Prof S Penceliah
Masters of Management Sciences: Marketing	Mr E Madondo	The Influence of Social Media in Promoting the Tourism Industry in Durban	Dr P Moodley
	Mr M Mupamhangwa	Customer experience with smartphones: A University student perspective	Mr T Tlapanwa Dr M Maharaj
Doctorate of Management Sciences: Peace Studies	Mr C Muchemwa	Building friendship between Shona and Ndebele ethnic groups in Zimbabwe	Prof GT Harris Dr S Kaye
Doctorate of Management Sciences: Peace Studies	Mr JB Binewa	Reintegrating ex-combatants: An action research project in a Rwandan Agricultural Project	Prof GT Harris
	Mr K Shonhiwa	Facilitating reconciliation in divided communities in Mashonaland Province - Zimbabwe	Prof GT Harris Dr S Kaye
	Mr M Hove	Nonviolent campaigns in Zimbabwe, 1999 to 2013: strategies, methods and effectiveness	Prof GT Harris Dr S Kaye
	Ms W Ndlovu	Preventing violence against lone women in Pumula community Bulawayo, Zimbabwe	Prof GT Harris
Doctorate of Management Sciences: Public Management	Ms MT Zulu	An Evaluation of the Management of Rural Ward- Based Primary Health Care: A case study of UThukela District Municipality in KwaZulu-Natal	Dr IG Govender
	Ms R Bansri	Commercialization of Innovation at Universities in South Africa	Prof N Dorasamy Prof GT Harris

FACULTY OF MANAGEMENT SCIENCES			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISORS
Masters of Management Sciences: Public Management	T Mapfumo	Monitoring and evaluation of HIV/AIDS programmes by non-governmental organisations: A case study of Umgeni local Municipality, KwaZulu-Natal, South Africa	Dr IG Govender
	C Nwafor	Factors influencing community protests in the Mbizana Municipality	Dr IG Govender
	BMS Khawula	An Evaluation of community participation in the Integrated Development Planning (IDP) process: A case study of Umzumbe Municipality in the province of KwaZulu-Natal	Dr IG Govender
Masters of Management Sciences: Public Management	ZR Nyembe	Performance Appraisal of Administrative personnel with the department of Education: A case study of Ilembe District office, KwaZulu-Natal	Dr KM Parker
Masters of Management Sciences: Hospitality and Tourism Management	TP Ndlovu	Modelling Community-Based Tourism: The case of Zulu-Mpophomeni Tourism experience	Mrs NP Sibiya Dr A Giampiccoli
	SE Dube	Assessing the effectiveness of a customer loyalty programme as marketing tool in the Ezemvelo KZN Wildlife Resort	Dr LM Lekhanya
	T Nkosana	An analysis of the use of Information and Communication Technology (ICT) and e-commerce for effective management, marketing and customer services quality in small remote hospitality establishments: A case study of the Midlands, KwaZulu-Natal, South Africa	Dr EM Mnguni
Doctorate of Management Sciences: Human Resources Management	ME Lourens	Developing an exploratory framework of Human Capital linked to Intellectual capital and knowledge Management for a selected University of Technology in South Africa: A case study	Prof DC Jinabhai Prof N Dorasamy

MASTERS AND DOCTORATE GRADUATES SEPTEMBER 2016

FACULTY OF ACCOUNTING AND INFORMATICS			
PROGRAMME	NAME	IREC APPROVED TITLE	SUPERVISOR/S
PhD: IT	S S Sibiya	Integration of satellite system and stratospheric communication platforms for weather observation	Prof DS Ilcev Dr W Kleynhans
Masters: I&CT	R O Fasasi	Developing a multi-usage assessment framework to measure E-skills level of Community Development workers in South Africa	Dr D Heukelman
	K M Ngcobo	A study of factors shaping learners' perceptions of ICT-based teaching and learning by applying personality and technology adoption theories on indigenous knowledge students	Prof SDE Obono

FACULTY OF APPLIED SCIENCES			
PROGRAMME	NAME	TITLE OF THESIS	SUPERVISOR/S
Degree of Doctor of Philosophy: Food Science and Technology	A K Arise	Composition and functional bioactive properties of bambara groundnut protein and hydrolysates	Dr E O Amonsou Dr O A Ijabadeniyi
Degree of Doctor of Philosophy: Biotechnology	O O Awolusi	Evaluation of seasonal impacts on nitrifiers and nitrification performance of a full-scale activated sludge system	Prof F Bux Dr S Kumari
	L Naicker	Anticancer activity of Ceratotheca triloba	Prof B Odhav Dr V Mohanlall Dr M G Matsabisa
	F O Odun-ayo	Inhibition of colon cancer in mice by microencapsulated probiotic	Dr L Reddy Dr J Mellam
	A Singh	Bioactive compounds from South African plants against Mycobacterium tuberculosis	Prof B Odhav Prof Y Coovadia

FACULTY OF APPLIED SCIENCES			
PROGRAMME	NAME	TITLE OF THESIS	SUPERVISOR/S
Degree of Doctor of Philosophy: Chemistry	N J Gumede	Computational and micro-analytical techniques to study the in vitro and in silico models of novel therapeutic drugs	Prof K Bisetty Prof S Sagrado
	M H Mabaso	Extraction of aromatic solvents from reformates and paint solvent wastes using ionic liquids	Prof G G Redhi Prof K G Moodley
Degree of Masters of Applied Science: Biotechnology	A Chanderman	Statistical optimization of phytase production in submerged fermentation	Prof S Singh Prof K Permaul Dr A K Puri
	T P Conco	Determination of the relationship between epiphytes and selected filamentous bacteria in activated sludge	Prof F Bux Dr S Kumari Prof T Stenstrom
	N Hadebe	Isolation and characterization of prebiotic oligosaccharides from algal extracts and their effect on gut microflora	Prof B Odhav
Degree of Master of Applied Science: Chemistry	K Reddy	Evaluation of biohydrogen production potential of sugarcane bagasse using activated sludge in a dark fermentation process	Prof F Bux Dr S Kumari Dr S K Gupta
	A O Jaiyeola	Rhodium Boron Nitride: A recyclable catalyst for the synthesis of α -aminophosphonates and dihydropyrimidinones	Prof R M Gengan
	T Y Mkhize	Selective extraction of lignin from lignocellulosic biomass using ionic liquids	Prof N Deenadayalu Dr P Reddy
Degree of Master of Applied Science: Food and Nutrition	T E Mpanza	Determination of capsaicin using carbon nanotube based electrochemical biosensors	Prof K Bisetty Dr P Singh
	K Govender	Snacking preferences of primary school children as a guideline to develop a sensory acceptable snack food item enhanced with Moringa oleifera	Dr A Naicker Prof C E Napier
	L B Mothepeu	Food insecurity and nutritional status relating to chronic disease of elderly caregivers within the rural households of Mpharane in Lesotho	Prof C E Napier Prof K J Duffy
Degree of Master of Applied Science: Biotechnology	A Mtolo	Food security and coping strategies of an urban community in Durban	Prof C E Napier
	B K Khan	Cloning, characterization and directed evolution of a xylosidase from Aspergillus niger	Prof K Permaul Prof S Singh
Degree of Master of Applied Science: Chemistry	D V Mashego	Preparation, isolation and characterisation of nanocellulose from sugarcane bagasse	Prof N Deenadayalu Dr P Reddy Prof S Sinha Ray

FACULTY OF ARTS AND DESIGN			
QUALIFICATION	NAME	TITLE OF STUDY	SUPERVISOR/S
MTech: Language Practise	G T Agbede	Stylistics in advertising: A comparative analysis of selected Bank Advertisements in Newspaper and magazine from South Africa and Nigeria	Dr R Makombe Dr RL Makhubu
MTech: Journalism	H Muindi	The influence of television soap operas on Zulu traditional	Prof D Pratt Dr RL Makhubu
MTech: Interior Design	H Mhlambo	The impact of impucuko (modernisation) of rural homestead living spaces on the dwellers in a selected area of Umbumbulu, South of Durban	Prof Brian Peace Mr R Harber

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT			
QUALIFICATION	NAME	TITLE OF STUDY	SUPERVISOR CO-SUPERVISOR
PHD: Chemical Engineering	C S Murutu	Evaluation of various process options for Potable Reclamation of Municipal WasteWater	Dr S Rathihall Dr VL Pillay
Masters: Chemical Engineering	T P Benecke	VLE Measurements of Ether Alcohol Blends for Investigation on Reformulated Gasoline	Dr S Rathihall Dr VL Pillay
Masters: Chemical Engineering	S Mtsweni	Performance of a Horizontal Roughing Filtration System in the Treatment of Greywater	Dr S Rathihall Dr D Ramjugernath
Masters: Electrical H/C	D J Reddy	Effectiveness of using low cost material combination for the Catalyst Layer of a Polymer Electrolyte Membrane Fuel Cell	Mr F d'Almanine Prof G Redhi

FACULTY OF HEALTH SCIENCES

DEGREE	NAME	IREC APPROVED TITLE	SUPERVISOR/S
Doctor of Health Sciences: Nursing	B A Ndlovu	A model to improve the Quality of Life for elderly living in a rural setting of uThungulu district, KwaZulu-Natal	Prof MN Sibya
	L S Eggers	Prevalence and selected risk factors for neck, shoulder and low back pain among primary school teachers in the Central Durban area – a cross-sectional study	Dr JD Pillay
MTech: Chiropractic	N Van Der Hulst	An investigation into the congruency between research perceived to be of relevance to Chiropractors practicing in KwaZulu-Natal and the student research completed at the Durban University of Technology	Dr A Van Der Meulen
	N Kader	Profiles of exercise participation by South African Indians residing in KwaZulu-Natal, South Africa	Prof T Puckree Dr F Haffejee
	T F Vivier	The immediate effect of thoracic spine manipulation on power output, speed and stroke rate in paddlers	Dr L O'Connor
	S Radtke	The prevalence and selected risk factors of musculoskeletal injuries affecting working canines in KwaZulu-Natal	Dr G Matkovich Dr SD Singh
	J T Dicks	The effect of ankle joint manipulation on peroneal and soleus muscle activity in chronic ankle instability syndrome	Dr L O'Connor Prof T Puckree
	D S Rieder	Patient satisfaction at the Durban University of Technology Chiropractic Satellite Clinics	Dr G Matkovich Dr C Kell
	S C J Le Roux	Concurrent validity of the Afrikaans versions of the Neck Disability Index Questionnaire and the Quadruple Visual Analogue Scale	Dr A Van Der Meulen
	L L Bezuidenhout	Practice characteristics of Chiropractic delegates attending the World Federation of Chiropractic's 12th Biennial Congress 2013	Dr L O'Connor Dr J Shaik
	A A Victor	The effect of spinal manipulation on biceps brachii muscle activity	Dr G Matkovich
MTech: Homoeopathy	R Sanjit	A repertorial comparison of the proving of a homoeopathic complex to the rubrics of the constituent parts	Dr R Steele
	T S Swana-Sikwata	A homoeopathic drug proving of Hoodia gordonii 30CH, with a subsequent comparison of proving symptomatology to its toxicology as a raw substance and to homoeopathic remedies of repertorial similarity	Dr CM Hall
	D Naicker	An ontological analysis of the visual expression of water based Homoeopathic remedy, Natrum muriaticum, as droplet glass stain patterns	Prof AHA Ross Dr I Botha
	R Desai	A retrospective clinic audit of the Kenneth Gardens homoeopathic clinic at Umbilo	Dr I Couchman
	G M Zondi	A homoeopathic drug proving of Acacia xanthophloea 30CH, with a subsequent comparison to the doctrine of signatures	Dr M Maharaj Dr CM Hall
	A Gobind	A homoeopathic drug proving of Acacia xanthophloea 30CH, with subsequent comparison to its use in African medical tradition	Dr M Maharaj Dr CM Hall
	N H Mavela	A needs analysis of relevant stakeholders on a short course in Homoeopathy for pharmacy front shop assistants in the greater Durban area	Dr I Couchman Dr K Erwin
Master of Health Sciences: Nursing	R Ragavadu	The impact of moral distress on the provision of nursing care amongst critical care nurses in the eThekweni District	Prof MN Sibya Ms P Pillay
	T O Zondi	Perspectives of undergraduate Nursing students on community-based education in Umsunduzi Municipality	Prof NS Gwele
	A Ramanand	An exploration of the childbirth experience amongst women from diverse religious backgrounds at public hospitals in the uMgungundlovu district of KwaZulu-Natal	Prof R Bhagwan Ms CN Adams
	N M Mhlongo	Experiences of midwives regarding practice breakdown in maternity units at a public hospital in KwaZulu-Natal	Prof MN Sibya Dr RM Miya
	T J Bhengu	Access and utilization of antenatal care services in a rural community of eThekweni district in KwaZulu-Natal	Prof MN Sibya Dr TSP Ngxongo
	N Z B Khambule	Experiences of pregnant women from a rural community regarding antenatal care services in eThekweni district, KwaZulu-Natal	Dr TSP Ngxongo Prof MN Sibya

FACULTY OF HEALTH SCIENCES

DEGREE	NAME	IREC APPROVED TITLE	SUPERVISOR/S
Master of Health Sciences: Nursing	S T Chonco	Factors influencing delayed HIV Testing: A Client Perspective	Dr PM Orton Dr A Razak
Master of Health Sciences in Environmental Health	G H Nkomo	Effectiveness of health and safety training on reducing occupational incidents among forestry harvesting contractors in KZN	Dr I Niranjan Prof P Reddy
Master of Health Sciences in Clinical Technology	M K E Gojo	An investigation of acute systemic inflammatory response and myocardial injury after cardiac surgery in patients infected with Human immunodeficiency virus using clinical and inflammatory markers	Dr DR Prakashandra Dr Y Harilall
Master of Health Sciences in Radiography	K Naidoo	Continuing Professional Development: Compliance challenges experienced by radiographers in KwaZulu-Natal	Ms S Naidoo Prof T Puckree



DUT Graduation September 2016

FACULTY OF MANAGEMENT SCIENCES

STUDENT'S PROGRAMME MMANSCI OR PHD	NAME	IREC APPROVED TITLE	SUPERVISOR/S
Masters of Management Sciences: Business Administration	Mr M Gina	Customer satisfaction analysis of Conlog Electricity repayment metres in KwaZulu-Natal: a customer perspective	Prof G Allen
	Mr T Mbele	Factors affecting young prospective entrepreneurs in the Umdoni Local Municipality area	Dr G Chetty
	Mr S Dladla	Factors influencing operational performance for SMMEs in Textile and Clothing manufacturing sector in the eThekweni district	Dr RWD Zondo
	Mr F Neshehe-Mukhithi	An exploratory study into South African consumers' perceptions and attitudes of Jamaican restaurant: Country of origin effect	Dr LM Lekhanya
Doctorate of Management Sciences: Marketing	Mr X Yu	The application of marketing intelligence for the survival, growth and success of Chinese entrepreneurs in KwaZulu-Natal.	Prof S Penceliah Prof JP Govender
Masters of Management Sciences: Marketing	Ms A Ncube	Branding in small and medium enterprises in KwaZulu-Natal as a means of ensuring business survival	Prof C Meintjes
	Mr T Musasa	The influence of customer service on customer buying behaviour at selected supermarkets in the greater Durban area	Dr P Moodley
Doctorate of Management Sciences: Public Management	Ms N Moyo	Peacebuilding among ex-prisoners and their families: enhancing the impact of the second chance rehabilitation centre, Zimbabwe	Prof GT Harris Dr S Kaye
Doctorate of Management Sciences: Public Management	Mr C Kiyala-Kimbula	The effectiveness of restorative Justice in preventing children's participation in Armed conflict in North Kivu Province, Democratic Republic of Congo	Prof GT Harris Dr S Kaye
Doctorate of Management Sciences: Public Management	Mr D Dianzenza	Building the capacity of young South African men in responsible, loving and non-violent fathering	Prof GT Harris Dr S Kaye
Masters of Management Sciences: Public Management	Mr B Mkhize	Improving conflict resolution in cooperatives: A study in the Vumengazi Authority, Umlazi	Dr S Kaye
Masters of Management Sciences Human Resources Management	Ms N Ngcobo	Public perceptions of motivational factors influencing employee's service delivery performance in Gauteng Province/Region	Dr LM Lekhanya
Masters of Management Sciences: Human Resources Management	Mr N IsahLeontes	An investigation into talent management and employee retention in the higher education sector of South Africa: A case of the Durban University of Technology	Dr G Chetty Dr M Lourens







RESEARCH PUBLICATIONS

RESEARCH PUBLICATIONS

FACULTY OF ACCOUNTING AND INFORMATICS

ACCREDITED JOURNAL ARTICLES 2015

Adekanmbi, O. and Green, P. 2015. Assessment of user authentication risks in a healthcare knowledge management system. *The International Business & Economics Research Journal* 14(1), p.95.

Adekanmbi, O., & Green, P. (2015). Conceptual Comparison of Population Based Metaheuristics for Engineering Problems. *The Scientific World Journal*, 2015, 936106. <http://doi.org/10.1155/2015/936106>

Adekanmbi, O. and Olugbara, O. 2015. Multiobjective Optimization of Crop-mix Planning Using Generalized Differential Evolution Algorithm. *Journal of Agricultural Science and Technology*, 17(5), pp.1103-1114.

Adetiba, E. and Olugbara, O.O. 2015. Improved classification of lung cancer using radial basis function neural network with affine transforms of Voss representation. *PloS one*, 10(12), pp 1-25

Adetiba, E. and Olugbara, O.O. 2015. Lung cancer prediction using neural network ensemble with histogram of oriented gradient genomic features. *Mathematical problems in engineering* 2015 (1) pp 1-17

Adetiba, E., Oyewole, S.A. and Olugbara, O.O. 2015. Pixel intensity clustering algorithm for multilevel image segmentation. *Mathematical problems in engineering* 2015(1) pp 1-19

Assensoh-Kodua, A. 2015. Socio-Psychological Factors Influencing Continuance Intention of Participants Using Online Social Networks to Buy. *Journal of governance and regulation* 4(2), pp 92-101

Basak, S.K. 2014. A Comparison of Researcher's Reference Management Software: Refworks, Mendeley, and EndNote. *Journal of Economics and Behavioural Studies*, 6(7), p.561.

Doorasamy, M. and Garbharran, H.L. 2015. The effectiveness of using material flow cost accounting (MFCA) to identify non-product output costs. *Environmental economics* 6(2) pp 56-68

Doorasamy, M. 2015. Environmental management tools. *Environmental economics* 6(2) pp 45-55

Doorasamy, M., 2015. Identifying environmental and economic benefits of cleaner production in a manufacturing company: a case study of a paper and pulp manufacturing company in KwaZulu-Natal. *Investment Management and Financial Innovations* 12(1) pp 235-246

Elujide, I. O., Olugbara, O.O., Nepal, T. and Owolawi, P. A. 2015. Performance of local averaging handover technique in long term evolution networks. *SAIEE Africa Research Journal (Transactions of the South African Institute of Electrical Engineers)*, 106(4).

Green P., E. and Adekanmbi O. A. 2015. Examination of employee factors influencing organisational productivity: perspective of a public entity. *Corporate board: role, duties and composition*, 11(2).

Green, P. and Sewnunan, T. 2015. Enactment of the National Credit Act and its implication on new and improved borrowers' rights in South Africa. *Journal of Applied Business Research*, 31(5), p.1757.

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Neboh, N., Adeyemo, J. and Olugbara, O.O. 2015. Performance appraisal of evolutionary algorithms in river basin management: a review. *Environmental Economics* 6(3) 72-80.

Sewnunan, T.D. and Green, P. 2015. The effect of the National Credit Act, 2005 on home loans: a selected case in South Africa. *Public and municipal Finance* 4(1) pp 7-14.

Tebele, C., Nel, K.A. and Dlamini, B., 2015. Career support needs of learners with historical disadvantage: an exploratory study. *Journal of Psychology in Africa*, 25(3), pp.258-261.

Thakur, S., Adetiba, E., Olugbara, O.O., and Millham, R. 2015. Experimentation using short-term spectral features for secure mobile internet voting authentication. *Mathematical Problems in Engineering* 2015(1), pp 1-21

RESEARCH PUBLICATIONS

FACULTY OF ACCOUNTING AND INFORMATICS

ACCREDITED JOURNAL ARTICLES 2016

Assensoh-Kodua A. 2016. Mobile banking in South Africa: a systematic review of the literature. Banks and bank systems, 11 (1).

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Assensoh-Kodua A. and Ngwane K. S. V. 2016. Habits as a moderator and exogenous predictor of social networks: the case of online social networking. Journal of governance and regulation, 4(4).

Assensoh-Kodua A. 2016. Marketing potentials of the social media tools in the banking market of an emerging country. Risk governance and Control: Financial Markets and Institutions, 6(4).

Govender, T. P. and Govender W. 2016. Peer-to-peer programming versus individualized programming: the real world. The Independent Journal of Teaching and Learning 11(1), pp 56-68

Gqaji A., Proches C. and Green P. E. 2016. Perceived impact of public sector leadership on road infrastructure service delivery. Investment Management and Financial Innovations, 13(3), pp. 51-59.

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Junpath, S.V., Kharwa, M.S.E. and Stainbank, L.J. 2016. Taxpayers' attitudes towards tax amnesties and compliance in South Africa: an exploratory study. South African Journal of Accounting Research, 6(1) pp.1-23.

Mungal, A. and Cloete, M. 2016. Preparing underprepared students for higher education and beyond: the development and implementation of an integrated project. Accounting Education, 1(2) pp.1-20.

Ngibe, M. and Lekhanya, L.M. 2016. Governance of the research activities in higher educational institutions: factors and outcomes. Risk Governance and Control: Financial Markets and Institutions 6(3) pp 26-30

Ngibe, M. and Lekhanya, L.M. 2016. Perceptions of research structures and service quality within various faculties at Durban University of Technology: staff and students' perspective. Problems and Perspectives in Management 14 (1) pp 63-71

Sithole, N. and Ngibe, M. Developing and improving human capital and productivity in public companies. Risk Governance & Control: Financial markets and institutions, 6 (3), pp 34-40

RESEARCH PUBLICATIONS

FACULTY OF APPLIED SCIENCES ACCREDITED JOURNAL ARTICLES 2015

Ally, N., Briljall, D., Rajah, S.S., Day, D., Maharaj, A. and Lortan, D. 2015. Using e-learning support as a sustainable communication tool. *Journal of Communication*, 6(1). Pp. 172-181.

Anand, K., Gengan, R.M., Phulukdaree, A. and Chuturgoon, A. 2015. Agroforestry waste Moringa oleifera petals mediated green synthesis of gold nanoparticles and their anti-cancer and catalytic activity. *Journal of Industrial and Engineering Chemistry*, 21, pp.1105-1111.

Arise, A.K., Amonsou, E.O. and Ijabadeniyi, O.A. 2015. Influence of extraction methods on functional properties of protein concentrates prepared from South African bambara groundnut landraces. *International Journal of Food Science & Technology*, 50(5), pp.1095-1101.

Awobusuyi, T.D., Siwela, M., Kolanisi, U. and Amonsou, E.O. 2016. Provitamin A retention and sensory acceptability of amahewu, a non-alcoholic cereal-based beverage made with provitamin A-biofortified maize. *Journal of the Science of Food and Agriculture*, 96(4), pp.1356-1361.

Bahadur, I., Letcher, T.M., Singh, S., Redhi, G.G., Venkatesu, P. and Ramjugernath, D. 2015. Excess molar volumes of binary mixtures (an ionic liquid+ water): a review. *The Journal of Chemical Thermodynamics*, 82, pp.34-46.

Bahadur, I., Mabaso, M., Redhi, G., Singh, P., Kumar, S. and Moodley, K. 2015. Separation of aromatic solvents from oil refinery reformates by a newly designed ionic liquid using gas chromatography with flame ionization detection. *Journal of Separation Science*, 38(6), pp.951-957.

Bathinapatla, A., Kanchi, S., Singh, P., Sabela, M.I. and Bisetty, K. 2015. Fabrication of copper nanoparticles decorated multiwalled carbon nanotubes as a high performance electrochemical sensor for the detection of neotame. *Biosensors and Bioelectronics*, 67, pp.200-207.

Beckmann, C., Zhang, K., Hofäss, H., Brüsewitz, C., Vetter, U. and Bharuth-Ram, K. 2015. Mössbauer spectroscopy study of surfactant sputtering induced Fe silicide formation on a Si surface. *Applied Surface Science*, 357, pp.493-497.

Beswa, D., Dlamini, N.R., Amonsou, E.O., Siwela, M. and Derera, J. 2016. Effects of amaranth addition on the pro-vitamin A content, and physical and antioxidant properties of extruded pro-vitamin A-biofortified maize snacks. *Journal of the Science of Food and Agriculture*, 96(1), pp.287-294.

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Briljall, D. and Niranjan, C. 2015. Using manipulatives to support an embodied approach to learning trigonometry in a South African school: a case study. *Africa Education Review*, 12(3), pp.361-380.

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Chalannavar, R.K., Venugopala, K.N., Baijnath, H. and Odhav, B. 2014. The chemical composition of leaf essential oils of Psidium guajava L. (white and pink fruit forms) from South Africa. *Journal of Essential Oil Bearing Plants*, 17(6), pp.1293-1302.

Chen, X., Xiao, Y., Shen, W., Govender, A., Zhang, L., Fan, Y. and Wang, Z. 2016. Display of phytase on the cell surface of *Saccharomyces cerevisiae* to degrade phytate phosphorus and improve bioethanol production. *Applied Microbiology and Biotechnology*, 100(5), pp.2449-2458.

Choe, H., Ha, J.M., Joo, J.C., Kim, H., Yoon, H.J., Kim, S., Son, S.H., Gengan, R.M., Jeon, S.T., Chang, R. and Jung, K.D. 2015. Structural insights into the efficient co2-reducing activity of an nad-dependent formate dehydrogenase from *thiobacillus* sp. Knk65ma. *Acta Crystallographica Section D: Biological Crystallography*, 71(2), pp.313-323.

Deepnarain, N., Kumari, S., Ramjith, J., Swalah, F.M., Tandoi, V., Pillay, K. and Bux, F. 2015. A logistic model for the remediation of filamentous bulking in a biological nutrient removal wastewater treatment plant. *Water Science and Technology*, 72(3), pp.391-405.

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Enitan, A.M., Adeyemo, J., Swalah, F.M. and Bux, F. 2015. Anaerobic Digestion Model to Enhance Treatment of Brewery Wastewater for Biogas Production Using UASB Reactor. *Environmental Modeling & Assessment*, 20 (6), pp.673-685.

Gengan, R., M., Pitchai, Sathiyaseelana, and Nepolraj. 2015. An elegant synthesis of indoloquinoline alkaloid cryptotackienene via Vilsmeier Haack approach, *Indian Journal of Chemistry Section B-Organic Chemistry Including Medicinal Chemistry* 54 (1) pp 12920- 1292

Gramany, V., Khan, F.I., Govender, A., Bisetty, K., Singh, S. and Permaul, K. 2015. Cloning, expression, and molecular dynamics simulations of a xylosidase obtained from *Thermomyces lanuginosus*. *Journal of Biomolecular Structure and Dynamics*, 1 (1) pp.1-12.

RESEARCH PUBLICATIONS

- Guldhe, A., Singh, B., Rawat, I., Permaul, K. and Bux, F.** 2015. Biocatalytic conversion of lipids from microalgae *Scenedesmus obliquus* to biodiesel using *Pseudomonas fluorescens* lipase. *Fuel*, 147, pp.117-124.
- Khan, F.I., Govender, A., Permaul, K., Singh, S. and Bisetty, K.** 2015. Thermostable chitinase II from *Thermomyces lanuginosus* SSBP: Cloning, structure prediction and molecular dynamics simulations. *Journal of theoretical biology*, 374 (1), pp.107-114.
- Lam, C.W., Wakeman, A., James, A., Ata, A., Gengan, R.M. and Ross, S.A.** 2015. Bioactive steroid alkaloids from *Buxus macowanii* Oliv. *Steroids*, 95 (1), pp.73-79.
- Leach P. and Morris R.** 2015. Symmetry reductions and solutions to the Zoomeron equation. *Physica* 56 (11) PP 1-11
- Maharaj A., Brijlall D., and Narain O., K.** 2015. Improving Proficiency in Mathematics through Websites-based Tasks: A Case of Basic Algebra. *International Journal of Educational Sciences* 8(2) pp 369-386
- Mellem, J., Baijnath, H. and Odhav, B.** 2015. Antidiabetic potential of *Brachylaena discolor*. *African Journal of Traditional, Complementary and Alternative Medicines*, 12(1), pp.38-44.
- Mkhize, T.G., Moyo, S. and Meleshko, S.V.** 2015. Complete group classification of systems of two linear second-order ordinary differential equations: the algebraic approach. *Mathematical Methods in the Applied Sciences*, 38(9), pp.1824-1837.
- Mlambo, M., Mdluli, P.S., Shumbula, P., Skepu, A., Tshikhudo, R. and Moloto, N.** 2015. A size-controlled synthesis and characterization of mixed monolayer protected silver-S-(CH 2) 11-NHCO-coumarin nanoparticles and their Raman activities. *Journal of Materials Research*, 30(12), pp.1934-1942.
- Molatlhegi, R.P., Phulukdaree, A., Anand, K., Gengan, R.M., Tilokey, C. and Chuturgoon, A.A.** 2015. Cytotoxic effect of a novel synthesized carbazole compound on A549 lung cancer cell line. *PloS one*, 10(7), pp 12-19
- Moodley, T., Amonsou, E.O. and Kumar, S.** 2015. Nutritional quality and acceptability of *Buddleja saligna* herbal tea. *Journal of Food Science and Technology*, 52(11), pp.7519-7524.
- Naidoo, K., Amonsou, E.O. and Oyeyinka, S.A.** 2015. In vitro digestibility and some physicochemical properties of starch from wild and cultivated amadumbe corms. *Carbohydrate polymers*, 125 (1), pp.9-15.
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- Naz, F., Shahbaaz, M., Bisetty, K., Islam, A., Ahmad, F. and Hassan, M.I.** 2015. Designing new kinase inhibitor derivatives as therapeutics against common complex diseases: structural basis of microtubule affinity-regulating kinase 4 (MARK4) inhibition. *Omics: a Journal of Integrative Biology*, 19(11), pp.700-711.
- Naz, F., Shahbaaz, M., Khan, S., Bisetty, K., Islam, A., Ahmad, F. and Hassan, M.I.** 2015. PKR-inhibitor binds efficiently with human microtubule affinity-regulating kinase 4. *Journal of Molecular Graphics and Modelling*, 62, pp.245-252.
- Ndlovu, Z. and Brijlall, D.** 2015. Pre-service Teachers' Mental Constructions of Concepts in Matrix Algebra. *African Journal of Research in Mathematics, Science and Technology Education*, 19(2), pp.156-171.
- Niranjan, T., Kanchi, S., Bisetty, K. and Naidu, N.V.** 2015. Novel Dithiocarbamates for Electrochemical Detection of Nickel (II) in Environmental Samples. *Asian Journal of Chemistry*, 27(10), pp 3598-3604
- Odun-Ayo, F., Mellem, J., Naicker, T. and Reddy, L.** 2015. Chemoprevention of Azoxymethane-induced Colonic Carcinogenesis in Balb/c mice using a Modified Pectin Alginate Probiotic. *Anticancer Research*, 35(9), pp.4765-4775.
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- Oyeyinka, S.A., Singh, S., Adebola, P.O., Gerrano, A.S. and Amonsou, E.O.** 2015. Physicochemical properties of starches with variable amylose contents extracted from bambara groundnut genotypes. *Carbohydrate Polymers*, 133, pp.171-178.
- Pal, A., Deenadayalu, N. and Chaudhary, S.** 2015. Effect of hydrophilic ionic liquid on the micellar properties of aqueous Tween-20. *Fluid Phase Equilibria*, 391, pp.67-71.
- Paliathanasis, A., Krishnakumar, K. and Leach, P.G.L.** 2015. Comment on "Classification of Cosmic Scale Factor via Noether Gauge Symmetries", *Int. J. Theor. Phys.*, 54, p.2343.
- Paul, V., Kanny, K. and Redhi, G.G.** 2015. Mechanical, thermal and morphological properties of a bio-based composite derived from banana plant source. *Composites Part A: Applied Science and Manufacturing*, 68, pp.90-100.

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Paliathanasis, A. K., Krishnakumar, K.M., Tamizhmani, & Peter G.L. 2016. Lie Symmetry Analysis of the Black-Scholes-Metron Model for European Options with Stochastic Volatility. Mathematics, 4(2), p.34.

RESEARCH ETHICS





INSTITUTIONAL RESEARCH ETHICS COMMITTEE



INSTITUTIONAL RESEARCH ETHICS COMMITTEE

REPORT FROM IREC CHAIR

PROFESSOR JAMILA ADAM



The Institutional Research Ethics Committee (IREC) has the responsibility of evaluating, approving and monitoring research involving humans, animals and the environment. Currently, research involving animals is referred to the UKZN Animal Ethics committee. The committee membership is composed as stipulated by the National Health Research Council of South Africa. All members are provided with an initial and ongoing training in research ethics. Proposals needing ethics clearance, either follow the expedited review process or serve before the full committee depending on which category they fall under. Meetings are held once a month from February to November each year.

Ethics Training Workshops/ Seminars attended by Committee Members:

Professor C. Napier (Faculty of Applied Sciences) attended the SARIMA Annual Conference which was held in May 2016.

Professor R. Gaede (Faculty of Arts) attended the Research Integrity & Ethics Governance Policing or Protecting Workshop at SARIMA on 17 May 2016.

Professor J. K. Adam attended the ARESA Seminar in Health Research Ethics on 20 May 2016.

Research Ethics Training 2017:

Professor J. K. Adam plans to facilitate a workshop on how to review a proposal for ethics clearance.

IREC plans to secure external experts in ethics to conduct training for DUT.

IREC Statistics as per 2 November 2016	
Total Number of Proposals Received	143
Total Number of Proposals Approved	98
Number of Independent Proposals Received (External)	1
Number of Independent Proposals Approved (External)	Nil
Number of Independent Proposals Received (Internal)	28
Number of Independent Proposals Approved (Internal)	21 (7 remain in the system)
Number of Proposals Withdrawn	2

It is noted that the committee carries out this function on a voluntary basis over and above their normal duties. Hence the University acknowledges their contribution towards this important function to ensure good ethical research standards are met and encouraged amongst DUT researchers.

Committee Members

1.	Prof J K Adam	Health Sciences/ Chairperson
2.	Prof M N Sibiya	Health Sciences
3.	Advocate R Sewlal	Legal Representative
4.	Prof C Napier	Applied Science
5.	Prof R M Gengan	Applied Science
6.	Prof J P Govender	Management Sciences
7.	Dr I G Govender	Management Sciences
8.	Prof R Gaede	Arts and Design
9.	Prof A Collins	Arts and Design
10.	Dr D Heukelman	Accounting and Informatics
11.	Prof R Millham	Accounting and Informatics
12.	Prof P Musonge	Engineering and the Built Environment
13.	Dr A O Ajyetan	Engineering and the Built Environment
14.	Mrs J Munien	Community Representative
15.	Mr W Benjamin	Community Representative
16.	Ms L Deonarian	Administrator







RESEARCH GRANTS ACQUISITION

REPORTING YEAR: 2015 TO 2016

RESEARCH GRANT ACQUISITION

REPORTING YEAR: 2015 TO 2016

Grant Type	Count	NRF Awards	NRF Releases
Grants Administered in 2016	94	R16 097 853	R15 212 853
Grants Awarded in 2016 ONLY	35	R3 947 321	R3 947 321
Grants Administered but carried over from previous years	59	R12 150 532	R11 265 532
Scholarships (no blocks) Administered in 2016	83	R8 323 873	R7 493 873
Scholarship (no block) Awarded in 2016 ONLY	62	R5 608 504	R5 078 504
Scholarships (no blocks) Administered carried over from previous years	21	R2 715 369	R2 415 369
Scholarships (Blocks) Administered in 2016	321	R19 156 643	R17 014 643
Scholarship (blocks) Awarded in 2016 ONLY	319	R18 654 643	R16 934 643
Scholarships (blocks) Administered carried over from previous years	2	R502 000	R80 000
Total Administered in 2016	498	R43 578 369	R39 721 369
Total Awarded in 2016 only	416	R28 210 468	R25 960 468
Total Carried over from before 2016	82	R15 367 901	R13 760 901
Grants Administered in 2015	87	R17 224 798	R17 224 798
Grants Awarded in 2015 ONLY	43	R9 251 507	R9 251 507
Grants Administered but carried over from previous years	44	R7 973 291	R7 973 291
Scholarships (no blocks) Administered in 2015	40	R2 866 124	R2 866 124
Scholarships (no blocks) awarded in 2015 ONLY	29	R2 283 142	R2 283 142
Scholarships (no blocks) Administered carried over from previous years	11	R582 982	R582 982
Scholarships (blocks) administered in 2015	209	R11 386 000	R11 386 000
Scholarships (Blocks) awarded in 2015 ONLY	208	R11 200 000	R11 200 000
Scholarships (blocks) Administered carried over from previous years	1	R186 000	R186 000
Total Administered in 2015	336	R31 476 922	R31 476 922
Total Awarded in 2015 only	280	R22 734 649	R22 734 649
Total Carried over from before 2015	56	R8 742 273	R8 742 273

Table 1: Block Grants, Scholarships and Grants - High level summary

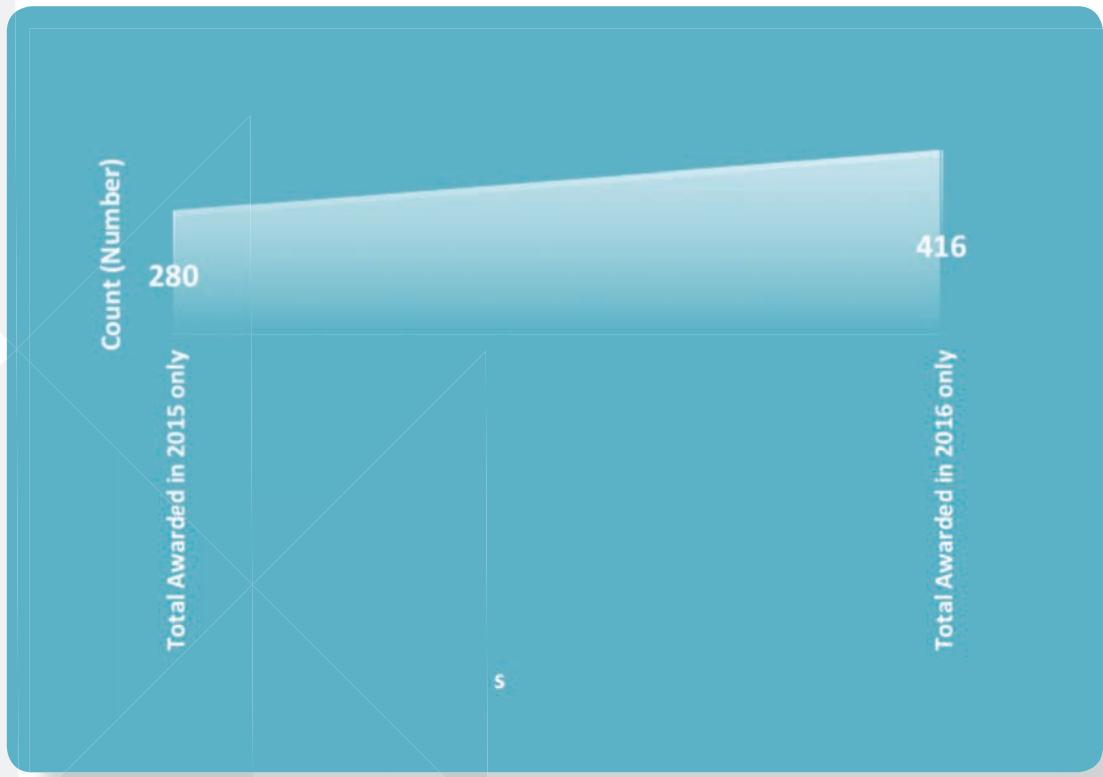


Figure 1: Total number of NRF awards (Grants and Scholarships – all types) for 2015 and 2016

Block Grants

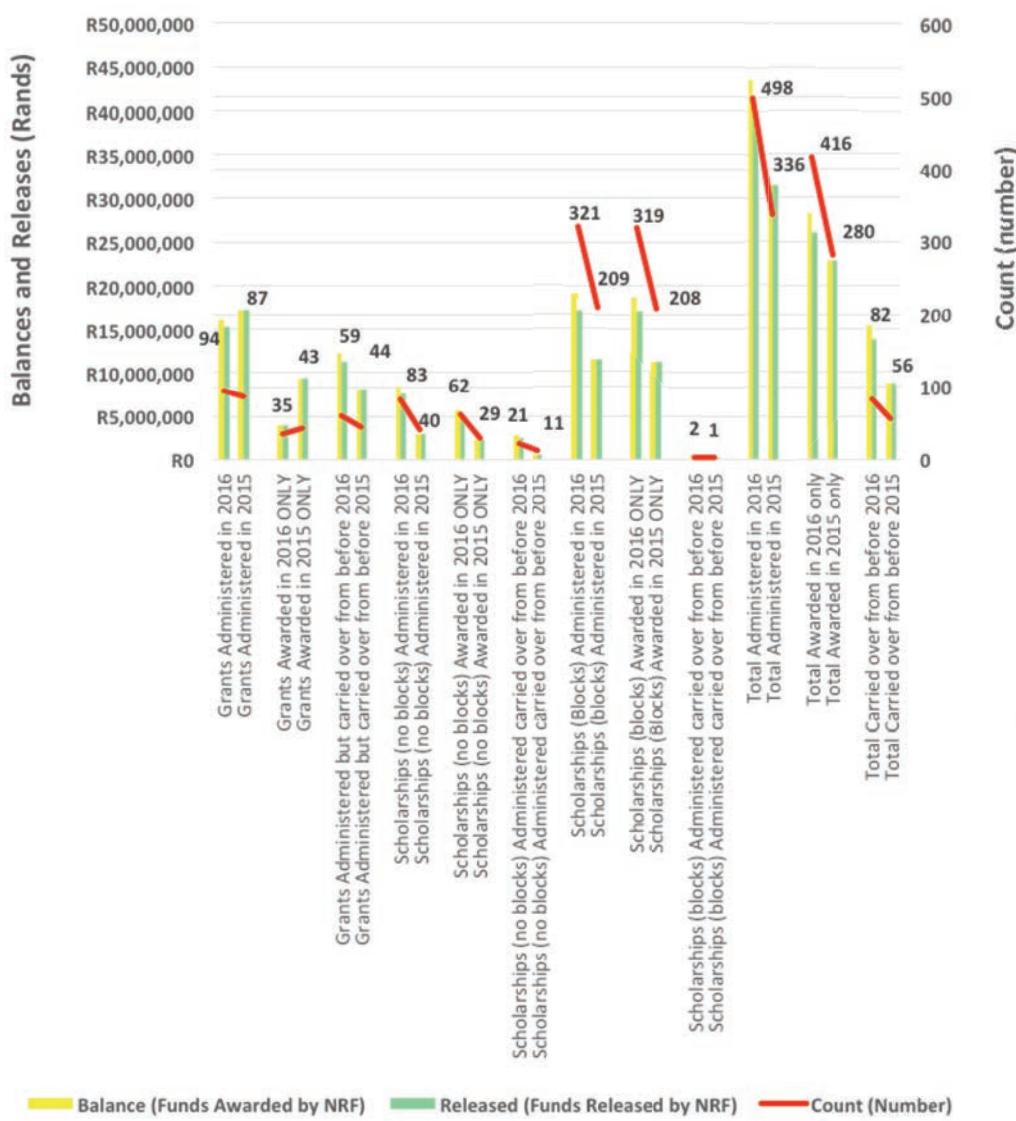
Scholarships

NRF grants for staff

2-Year NRF Grants and Scholarships Uptake at DUT

January to December 2015

January to November 2016



Last Name	First Name	Faculty	Student Number	Gender	Scholarship Value
Ndlovu	Nomfundo	Engineering and the Built Environment	20410796	Female	R71 800,00
Mtshali	Sbongiseni	Management Sciences	20812748	Male	R71 800,00
Mavundla	Nobuhle	Applied Sciences	21005946	Female	R71 800,00
Boto	Olwethu	Applied Sciences	21200184	Female	R71 800,00
Mdlaka	Sibongile	Applied Sciences	21205417	Female	R71 800,00
Kabane	Bakusele	Applied Sciences	21555657	Male	R71 800,00
Msomi	Phumelela	Applied Sciences	21649784	Female	R71 800,00
Mazibuko	Wiseman Sinethemba	Management Sciences	20614961	Male	R71 800,00
Khati	Sinethemba Edmara	Health Sciences	20904308	Female	R21 800,00
Shabangu	Nondumiso	Health Sciences	20909881	Female	R71 800,00
Ngobese	Vimbulaka Nhlakanipho Brian	Health Sciences	20926660	Male	R71 800,00
Mbatha	Ntombizethu Annie	Health Sciences	21001842	Female	R71 800,00
Xaba	Nkululeko	Health Sciences	21018336	Male	R71 800,00
Nyawose	Zikhona Truth	Applied Sciences	21103112	Female	R21 800,00
Mazibuko	Gugu prudence	Applied Sciences	21103670	Female	R21 800,00
Mazibuko	Sindisiwe Sthembile	Health Sciences	21110208	Female	R71 800,00
Jula	Melissa Nokulunga	Applied Sciences	21201878	Female	R71 800,00
Langa	Cebeni Nkosiawukile	Applied Sciences	21202140	Female	R21 800,00
Rubushe	Mthokozisi	Applied Sciences	21206077	Male	R21 800,00
Madalanga	Samkelo	Applied Sciences	21422227	Male	R21 800,00
Total Awarded as at October 2016					R1 136 000
National Skills Block Grant Award 2016					R1 940 724,14
Funds to be further awarded					R804 724,14

Table 2: National Skills Fund Scholarships - 2016

GRANTS TEAM

Dr. Bloodless Dzwairo

DTech Eng: Civil (TUT), MSc IWRM (UZ),
BSc Honours Environmental Management
(UNISA),
BSc Chemistry and Microbiology (UNISA)
Grants Administrator and Senior Researcher
Research and Postgraduate Support
Email: grantsadministrator@dut.ac.za



Ms. Omolola Tajelawi

Masters (DUT)
NRF Grants Research Assistant
Research and Postgraduate Support
Tel: 031 373 2448
Email: omololat@dut.ac.za



Mr. Langelihle Shange

BSc. Environ. Science (UKZN)
DST-NRF INTERN 2016-2017
Research and Postgrad Support
Tel: 031 373 2448
Email: Langelihles@dut.ac.za



The Grants Management Team would like to thank all students and staff who have cooperated to make management and compliance run smoothly throughout 2015 and 2016. For the future, we endeavour to serve the DUT Community more efficiently and with the strictest of ethical conduct and fairness. Best wishes to all our recipients for the 2016 and 2017 academic years.



FUNDING



Applications



Grants







RESEARCH CAPACITY DEVELOPMENT



MESSAGE FROM THE COORDINATOR RESEARCH CAPACITY DEVELOPMENT

MS V GOVENDER

One of the research strategic focus areas for the 2015-2016 reporting year has been research capacity building. In Africa, particularly, there is a need for development in this area as the lack of capacity is due to: fewer staff with advanced degrees; poor research and publishing skills and/or working at an institution with a poor research culture (Frantz et al, 2014). The research capacity of South African higher education institutions (HEIs) reflects the vast discrepancies that exist between historically advantaged and historically disadvantaged universities (Singh & Howard, 2015). The Research Capacity Development (RCD) programme is part of the Durban University of Technology commitment to initiate and foster programmes that develop researchers thus providing an environment that is enabling in terms of developing and refining the researcher's skills.

The overarching idea of the RCD programme is that it has to address the needs of researchers at the DUT. The strategies used to develop capacity include, mentoring of pre-doctoral candidates, writing retreats and courses on strengthening postgraduate supervision. These are conducted on an individual basis. The Directorate conducts RCD initiatives for staff and students annually. The RCD programme provides opportunities for staff and students to develop their research skills and create communities of practice and peer support networks. Workshop facilitators are highly respected researchers and academics who are experts in their field. The RCD programme for the reporting period focused on the following:

- Finding information for your research
- Managing your information (EndNote)
- Research Methodology Course
- How to write a literature review
- Preparing and Writing up your Research Proposal
- Writing up a research proposal
- Thomson Reuters: Research Capacity Building Workshop
- Article Writing Workshop
- Academic Writing for Publication
- Introduction to article writing - What it takes to get published in an ISI listed Journal. What do editors look for?
- Writing for Publication Development Programme
- Grant Proposal Writing
- Statistical Package for Social Sciences (SPSS) Training.



Additional capacity development workshops and seminars were run by specialists in their field to share their expertise, namely:

Strengthening Postgraduate Supervision

This innovative short course was offered through Rhodes University. The three-phase course provided structured support needed by academics as they take on the complex and demanding role of doctoral and masters supervision. The phases consisted of two face-to-face workshops and one online component. The course combines discussions, case studies, research literature, video clips, and numerous other activities and information, both online and face-to-face, to help the new supervisor engage with the practice and process of doctoral supervision in a reflective and informed way.

Article Writing for Publication Workshop

This workshop was aimed at researchers at entry level who were ready and motivated to prepare and submit a completed set of research results for publication in an accredited peer-reviewed journal of their choice. It was also for researchers who were committed to attending the article writing programme.

The components of the activities in this article-writing programme were:

Structured preparatory activities by individuals and attendees at Workshop Part 1

A prerequisite for researchers with no experience or limited experience of publishing research articles before attending the three-day workshop was that each participant (with support via individual consultations and optional group discussions) works on his or her draft research paper to the point of readiness to submit for publication.

A follow-up consultative and revision process – Workshop Part 2

Each participating researcher revises the research paper for publication initially, with the assistance of co-author(s) if any; and during the workshop with editorial assistance from a workshop facilitator; followed up with further content-specific advice that may come from a mentor, e.g. an appropriate peer or colleague or the researcher's academic supervisor, or from an experienced peer in the field, willing to act as a preliminary reviewer. The submission and, if accepted, the publication of the paper via the editor of the selected journal to which the participant submits the paper and, on its acceptance, liaises with the editor about final revisions.

Progress Tracking and Impact of Programme: A follow up with all participants after 6 months to find out the status of their articles on whether submitted or published.

Doctoral Mentoring Proposal Development Programme

The Research and Postgraduate Support Directorate hosted the first session of the six scheduled sessions of the Doctoral Mentoring Proposal Development Programme in June 2015. The DUT Doctoral Mentoring Proposal Development Programme consists of approximately six weeks of contact learning, covered by 6 sessions, over a period of one year. It is aimed at Doctoral candidates and their supervisors. The programme facilitated research proposal knowledge at a doctoral level. Leading research methodologists facilitated modules designed to complement the discipline-specific preparation for thesis undertakings by candidates. Each of the research modules was developed in consultation with respective subject experts and then revised to meet the DUT doctoral studies requirements.

The selection committee chose sixteen candidates to participate in the programme. The following were the criteria for selection; viz: Candidates must have completed a Master's Degree, must be in early registration for a PhD/ Doctorate; must have had a Supervisor and/or was confident of having a Supervisor while on the programme; must be an academic staff member of the University; must show evidence of commitment to a career in academia and had a publishing record/attended conferences. Most importantly, candidates needed to commit to attending all days of all Modules during the scheduled times and prepared to undertake to complete the Doctoral degree within the minimum time of three years of the Degree. The candidates selected for the programme were staff from across the six faculties. The Programme assisted candidates to develop a proposal within the six months and it also developed supervision skills as well as knowledge of statistics. At the end of the programme all sixteen participants graduated by fulfilling the requirements of the programme. Successful candidates had demonstrated a commitment to a career in academia and research and have committed to completing the programme.

Capacity development strategies are usually context specific and must be designed and tailored to suit both the researchers needs (Segrott et al (2006)) and drive the institutional agenda in terms of improving capacity development. At the DUT, the RCD programme has grown over the last five years and has had impact on increasing research and postgraduate participation rates in addition to the individual Faculty programmes. A number of benchmarking exercises are continuously undertaken to ensure our programmes remain relevant and innovative within the sector. The real measure, though, is on the impact and evaluation of these programmes which, in some cases, require continuous modifying delivery modes in collaboration with Faculty and other higher education institutions.

RESEARCH CAPACITY DEVELOPMENT TEAM

Ms Vaneshree Govender

Coordinator: Research Capacity Development
Directorate for Research and Postgraduate Support
Durban University of Technology
Tel: 031 373 2558
Fax: 0866741449
Email: vanesh@dut.ac.za



Ms Zethu Letta Mnguni

Research Capacity Building Administrator
Directorate for Research and Postgraduate Support
Tel: 031 373 3007
Email: lettam@dut.ac.za



Mr. Zenande Ndakisa

Research Innovation and Engagement Liaison
Directorate for Research and Postgraduate Support
Email: zenanden@dut.ac.za

REFERENCES

- Frantz, J. M., Leach, L., Pharaoh, H., Bassett, S. H., Roman, N. V., Smith, M. R., & Travill, A. 2014. Research capacity development in a South African higher education institution through a north-south collaboration. *South African Journal of Higher Education*, 28 (4), 1216-1229.
Segrott, J., McIvor, M. and Green, B. 2006. Challenges and strategies in developing nursing research capacity: A review of the literature. *International Journal of Nursing Studies*, 43(5): 637-651.
Singh, R. J. & Howard, R. L. 2015. Challenges and successes of research capacity building at a rural South African university. *South African Journal of Higher Education*, 29(3): 183 - 200



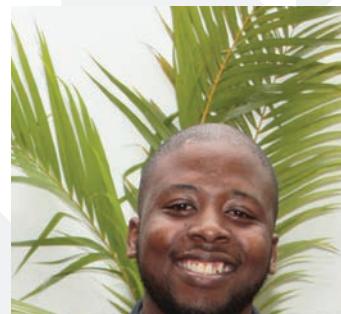
DOCTORAL MENTORING PROPOSAL DEVELOPMENT PROGRAMME 2015



STRENGTHENING POSTGRADUATE SUPERVISION WORKSHOP 2016



INSTITUTIONAL RESEARCH DAY 2015



INSTITUTIONAL RESEARCH DAY 2015

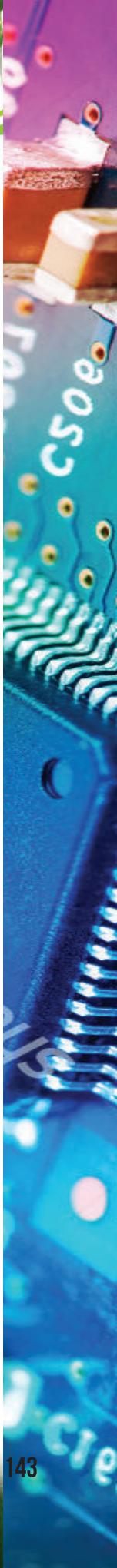


INSTITUTIONAL RESEARCH DAY 2015





TECHNOLOGY TRANSFER AND INNOVATION





TECHNOLOGY TRANSFER AND INNOVATION

MESSAGE FROM DIRECTOR: TECHNOLOGY TRANSFER AND INNOVATION:

PROFESSOR GERHARD PRINSLOO

The DUT Technology Transfer and Innovation (TTI) office was formed in terms of prescriptions of the South African Act on Intellectual Property from Publicly Financed Research and Development (IP Act). The aim of the TTI unit is to promote innovation, technology transfer and entrepreneurship position at DUT as a Centre of Excellence in Technology. The TTI Office acts directly in line with the strategic goals of the university, and the general mandate encompasses more than the operations of a traditional university technology transfer office. TTI further assists research units with the submission of government tenders, funding applications for the commercialisation of research and securing funds for commercialisation of technology or knowledge centres.

In the 2015/2016 financial year, the Directorate and the Faculty of Applied Sciences (Department of Food Technology) was allocated an amount of R820 000 from the KZN Department of Economic Development Tourism and Environmental Affairs (EDTEA) in support of a technology development project. The Directorate also played a pivotal role in securing an amount of R980 000 from the National Lotto Fund.

During this financial year, the Technology Innovation Agency (TIA) further allocated around R3.7 million towards the commercialisation of a number of technology development projects at DUT. The DUT Seed Fund Committee awarded these funds to innovation-oriented research projects conducted at DUT. The intention of the Seed Fund is to develop preliminary research outputs where initial proof of concepts has been demonstrated so that they may be commercialized or better positioned to receive subsequent round of innovation funding. Of these, nine (9) applications were granted approval, namely:

- Evaluation of Micro-Algal Biomass & Lipid production at Demonstration Stage
- Assessment of Harvesting & Drying Technology for Micro-Algal Biomass
- Biofilms Packaging Industry
- Industrial Biotechnology
- Subscription based Wastewater knowledge and troubleshooting web interface
- Purification of Algal Phycocyanin for Pharmaceutical Application
- Telecentre Monitoring System
- Activities for Ventilator System
- Activities for Cervical Spine Immobilisation Device
- Improvement & Commercialisation of 3 Food products.

In the present cycle of the strategic plan, the TTI Office will continue to play an important role in the university focus towards the commercialisation of technology related intellectual property. This means that, in the present cycle, the DUT TTI Office is actively engaged in activities that can help secure industry and government funding of projects aimed at technology development and social upliftment/improvement through applied research.



invoTech
Innovation Technology
Business Incubator

INVOTECH

InvoTech is an Innovation and Technology Business Incubator that is supported by the Durban University of Technology (DUT) and funded by Small Enterprise Development Agency (SEDA).

InvoTech is positioned to be a leading Business Incubator in South Africa to convert innovations and new technologies into sustainable commercially viable businesses. It allows fast learning across a community of inventors and assists to establish clear pathways for scaling up the most promising businesses.

InvoTech supports the following sectors:

- Green Technologies
- Creative & Digital Technologies
- Agricultural-impacting Technologies.

Our Partners

InvoTech has partnered with two prominent institutions, The Durban University of Technology (DUT) and the Technology Innovation Agency (TIA) to assist entrepreneurs with their shortcomings in technology innovation in the province of KwaZulu-Natal. InvoTech seeks to use technology to support economic development through the establishment and support of small enterprises. DUT has the skills, competencies, equipment and/or additional resources at its disposal to support the activities of InvoTech.

InvoTech together with TIA hopes to support entrepreneurs, promote a culture of innovation and bolster the local economic development in the province. TIA has made available a Seed Fund to InvoTech, which is aimed at assisting technology based SMMEs in bridging financing requirements to take their innovative ideas to the market.

incubate
YOUR IDEA

SUCCESS STORIES

South African Cane Growers

In 2015, Dr Thomas Funke from South African Cane Growers Association was approved Seed Funding to the amount of R500K to build a structure and prove a process of converting sugar cane leaves to Biogas. InvoTech is exceptionally proud to report that the project was completed in June 2016. The Biogas Pilot Plant Joint Venture kicked off on Friday the 24th of June 2016 with an open day.

The Biogas Pilot Plant Joint Venture is a business initiative by South African Cane Growers Association and Crownhill Resources that aims to aid sugarcane growers in adding value to their farming operations by adding value to their cane crop.

The Biogas Pilot Plant Joint Venture that has been developed in the Nyoni area on the North Coast of KwaZulu-Natal, has a capacity of digesting 200m³ of cane leaves to power a generator with the capacity of 30KW. The plant is also able to produce 3000 litres of liquid fertiliser every day, which a farmer can use to offset his fertiliser cost. “It has been a long-time dream of ours to pursue value addition from cane in this industry, apart from sugar and molasses, and that this is the start in the right direction”



Biogas Plant 1



Biogas Plant 2



SUCCESS STORIES

WiSolve

Three innovative Durban University of Technology students, Mr Mfundu Ntombela, Mr Nhlanla Mzobe and Mr Terry Mavundla reached their first of many milestones in their young lives with the launch of their problem-solving IT Applications Company, WiSolve at InvoTech on 20 April 2016. The launch received a positive response and saw a great turn out. The company develops mobile applications and websites. The company also specializes in Android, IOs and desktop applications for various businesses and learning institutions. InvoTech is delighted to be supporting a group of young entrepreneurs that are driven, motivated and excited about running their own business. Their commitment and dedication to their work is remarkable.







POSTGRADUATE EXPERIENCE

POSTGRADUATE EXPERIENCE



FACULTY OF APPLIED SCIENCES

MS MELLISA JULIA

As a Food Scientist in the Food microbiology field, the trip to Denmark gave me better a perspective on the field I would like to venture to, I identified my short comings and my strengths as I was under pressure to grasp new techniques while I tried to finish my objective which required the use of molecular biology based methods to identify microorganisms responsible for an Ethiopian fermented flat bread.

During my stay at the University of Copenhagen, I was able to extract genomic DNA (100 isolates), analysed DNA with Rep-PCR fingerprinting using GTG5 primers, Gel electrophoresis PCR products, analyse images with BioNumerics software package and amplifying an image the 16srRNA and 26srRNA gene. Lastly but not least I was also trained on the use of chromas software and Blast algorithm for analysing sequencing results.

I am very grateful for the opportunity and support, the DUT Research Development grant received to cover parts of the trip, I created amazing relationships with my colleagues from the University, such a diverse atmosphere/ workspace.

I am forever grateful and blessed and hope that the support is also continued with other students who wish to improve their skills, knowledge and build international relations with other institutions.

INSTITUTE OF WATER AND WASTEWATER/ SARCHI

MS AYANDA SITHEBE



I matriculated at Hillview Senior Secondary. Thereafter in 2010, I undertook a Diploma in Biotechnology at DUT and graduated in 2013. During my diploma studies, all of my fees were funded by NSFAS because my grandmother could not afford to pay the fees. In 2013, I furthered my studies by doing a BTech in Biotechnology, which was funded by the NRF. Directly after my BTech, I applied for a Masters within the Institute of Water and Wastewater Technology (IWWT) under the supervision of Prof Thor-Axel Stenstrom, the NRF SARCHI Chair who funded my Masters through NRF until 2015. In the year 2016, I was granted an extension through the DUT Masters scholarship scheme. I have been fortunate to travel both locally and internationally while attending workshops, training courses as well as conferences. I have been to Limpopo on a statistics course, Botswana (Gaborone) on the 17th Waternet Symposium, Spain (Barcelona) on the BioMicroWorld international conference, as well as the Young Water Professionals conference that was held in Pretoria in 2015 and the WISA conference held in Durban 2016. I have published a book chapter; one co-authored paper has been submitted and two are still in draft. The support obtained through scholarships during my academic journey has been tremendous, I cannot begin to express the euphoria that comes with the travelling and exploring other countries and people's cultural behaviour and backgrounds. I would like to thank my funders (NASFAS, SARCHI NRF, DUT) for the financial support throughout my academic journey, as well as the Research and Postgraduate Office at DUT. And a special thank you to my supervisors. I will be pursuing my Doctorate soon after and hope that I can give back to my community one day and be able to help others!

POSTGRADUATE EXPERIENCE



FACULTY OF MANAGEMENT SCIENCES

MR REWARD UTETE

First and foremost, I would sincerely like to thank all contributors that made my trip a success. Our DUT Golden Key Advisor, Ms Da Silva Pita, I am extremely grateful and thankful for all the advice and administration services you rendered towards the Golden Key International Summit 2016. I would also like to acknowledge your continuous assistance while in America. To Professor Moyo, my words could not describe how thankful I am to receive your financial support. Over and above that, I greatly appreciate the remarkable initiative and stance you took to approach and liaise with your co-contributors to make the trip succeed. Professor Balkaran, I am incredibly thankful for your substantial and unconditional financial support. I would also like to thank the International Office and Dr Samuels, for the valuable contribution towards my registration fee.

Thank you for lifting DUT to greater heights; you made it known to students that had never heard about it before. Since DUT is still a new Golden Key Chapter, it was exciting being recognised on an international scale where top student achievers from over 400 prestigious universities across the world met. I learnt a lot of aspects that comprised Golden Key's three pillars: leadership, academic excellence and community engagement. I learnt that exceptional leaders strive for growth and are life-long learners. The workshops we had in America ignited my ambition to fulfill my leadership potential. I had an opportunity to acquire the much-needed career development through networking with like-minded students and alumni. I have also connected with other researchers in my field of study and that has opened doors for future research collaborations in my study journey.

Indeed, Golden Key provides us, its members, with values of global academic excellence. I have no doubt that Golden Key accelerates student performance through its rigorous workshops, networking and inspirations. One of the most important aspects I learnt about being a leader is to achieve a H.E.R.O state. H.E.R.O. entails humility (H), empowerment (E), relational (R) and optimistic (O). I learnt that no one knows everything. We need each other at some point in life to achieve our goals. I appreciate the time spent with like-minded students and alumni. I look forward to share in detail my experiences and all that I learnt at the summit with my co-members, students and interested DUT staff.

Thank you! Ngiyabonga! Dankie!



FACULTY OF HEATH SCIENCES (DEPARTMENT OF NURSING)

MS RITA RAGAVADU

Ms. Ragavadu's experience as a Master's student of the Durban University of Technology was one that has grown her, not only professionally but personally as well. As a career woman, mother, student and worker Ms Ragavadu had to quickly learn to balance these areas of her life to remain productive and meet the demands of each area. This journey has taught her to persevere against all odds. Ms Ragavadu admits that frequent visits to the Nursing Department and interaction with her Co-supervisor and Supervisor always gave her hope when she felt despondent and in despair and this has helped her achieve her goal.

Ms Ragavadu is currently employed at the Life College of Learning as a Post Basic Nurse Educator since 2008. Her great passion is to produce learners who are critical thinkers. Ms Ragavadu believes producing critical thinkers and nurses who love the profession is an integral part of sustaining the nursing profession. She admits that research has always been a challenge to her. However, she is most grateful for the research mentorship offered by Dr. Basson to the Life College of Learning as this has now abled her to mentor others through the research process.





ACKNOWLEDGEMENTS

EDITORIAL TEAM

Ms Vaneshree Govender

Professor Sibusiso Moyo

SUB-EDITORIAL TEAM

Ms Zethu Mnguni

Mr Zenande Ndakisa

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Dr Bloodless Dzwairo

Ms Lavisha Deonarain

Ms Samukele Mbhamali

Ms Zanele Shandu

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Departments of Management Information and IT Support Services

Technology, Transfer & Innovation Directorate

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Postal Address
P.O. Box 1334, Durban
South Africa, 4000
www.dut.ac.za