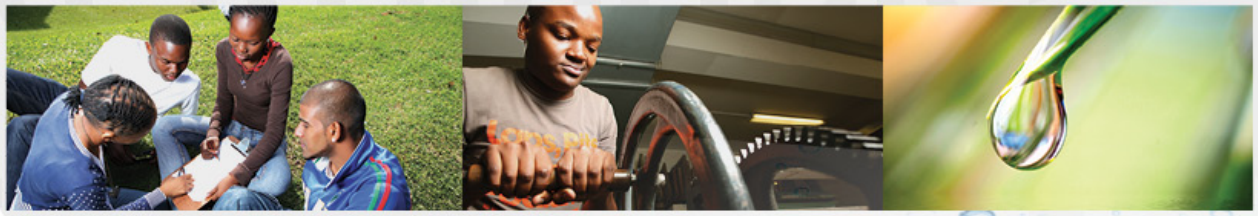
DUT DURBAN UNIVERSITY OF TECHNOLOGY

ANNUAL RESEARCH REPORT 2013

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

The leaves used in the design are symbolic to that of a sprout beginning its journey into life, so to resembling the students that have begun their journey, of empowering themselves with knowledge provided by DUT.

The elements used within the leaves, highlight the sustainable efforts that have become a culture at DUT, forming part of the growth of its students and the university. The leaves are linked to each other, relative to that of links from a chain. This places emphasis on social sustainability, people joining forces to contribute towards establishing a sustainable future.



CONTENTS

DUT
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TECHNOLOGY

Forward by the Vice-Chancellor

The Tech is a University! This means that research, knowledge generation and innovation are core to its mission. And so it gives me great pleasure to provide you with an update on the progress we are making in the research and innovation area– and all the indicators are on a great trajectory. Many challenges remain and we work systematically to address these.

Between 2010 and 2013, our rate of research output has more than doubled from 46 publication units per year to over 100 and I am confident that this will continue to grow. This is still very small in comparison with the more research-intensive universities but this was always going to be an organic, step-by-step process. The University has initiated a large number of research development activities to support this growth, understanding that it is vital to develop the conditions for good, high quality research and will continue to do so through the research development grant (RDG) and a variety of measures.

Our ability to compete for national funds for research is gradually improving but we do have a way to go and we have to work at this. In my view, there is an additional challenge. Sometimes it is not so much about the capacity of our leading researchers to compete but a need to influence the understanding of national funding agencies about the research agendas of the Universities of Technology.

At the heart of the institutional project is the lucid articulation of the need for a strong, responsive and resilient research ethos and culture. We understand without any ambiguity that this is a difficult process, albeit an interesting one.

One way of doing this is for us to begin to identify a set of strongly performing research groups, units, centres and institutes that resonate with the strategic thrust of the University as an engaged institution. We spent most of 2013 deliberating on these and look forward to consolidating them by early 2014. The preliminary list gives two sets of research focus areas – those that are already established and functioning at a high level and those that are in a state of development. The University will support these and understand that we will constantly be looking to expand the sets. These areas have relevance to both regional and national imperatives and a full list of these are given under the Research Directors Report. As part of the Vice-Chancellor's Prestigious PhD Qualification-Out Project (2014-2016) through the RDG, DUT has entered into a partnership with SANTRUST to enroll the first cohort of 20-30 PhD candidates from 2014. We believe this will assist in increasing the PhD academic staff indicator from 15% in 2013 to reach 20% by 2017. The SANTRUST PhD Proposal Development Programme consists of approximately seven weeks of contact learning, covered in 5 Modules, over an annualized period. It is aimed at doctoral candidates and their supervisors. The programme will run from August 2014.

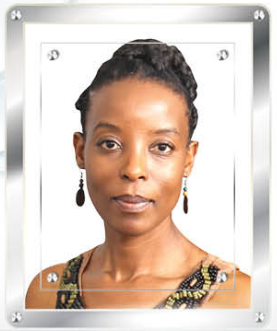
I also wish to take this opportunity to congratulate a number of our staff that have successfully competed for grants in the 2013 reporting year. This helps the University to drive its research agenda and impact in the relevant areas.

The Enhancing Care Foundation (ECF), a health research, development and postgraduate training institute is attached to DUT as an institute. Professor Umesh Lalloo, one of South Africa's leading pulmonologists and expert on health matters, leads it. ECF will be a strong partner of our Faculty of Health Sciences and we look forward to further engagements in 2014 as we construct a strategic project in the area of health systems strengthening.

I would like to thank the research team and staff under the leadership of Professor Moyo for their ceaseless energy and passion and for working with the faculties to ensure that DUT makes significant strides towards its research ambitions!

Professor AC Bawa
Vice-Chancellor & Principal:

Message from the DVC: Technology, Innovation & Partnerships and Director: Research and Postgraduate Support



The 2013 academic year was filled with a number of activities which also involved identifying a few niche areas within DUT. This was in line with the Research Strategy of the University to increase the research base and consolidate the limited resources so that there is greater impact in terms of meeting outcomes and leveraging resources to the rest of the University. A consolidated list of resources which included equipment received by various grant holders within the University was compiled and published online to allow broader access and visibility of resources within. Similarly a consolidated list of research focus areas was also put together to begin the process of consultation with the broader University community and to create more internal and external collaborations, as well as come up with a few flagship programmes that the University will be known for in terms of impact and engagement. These areas fall into two sets: the established research focus areas (RFAs), which possess a research track record and a sufficient pool of postgraduate students, and the emerging research focus areas.

The first set of established research focus areas (RFAs) contain the following groups:

- Water and Wastewater Technology Research Group which includes the Institute of Water and Wastewater Technology (led by Professor Faizal Bux) and the South African Research Chair, Professor Thor Axel Stenstrom, who joined us from Stockholm Environment Institute.
- The Nano-Composite Materials Group led by Professor Mervyn Kanny.
- The Enzyme Technology Group led by Professors Suren Singh and Kugen Permaul.
- The Food and Nutrition Security Group led by Professor Carin Napier of the Department of Food and Consumer Nutrition Sciences with Dr Eric Amonsou and Dr Oluwatosin Ademola Ijabadeniyi of the Department of Biotechnology and Food Technology.
- The Peace Building Programme led by Professor Geoff Harris.
- Indigeneous Knowledge Systems and Plant Drug Discovery Group led by Professor Bharti Odhav from the Department of Biotechnology and Food Technology as well as Professor Gqaleni Nceba.
- Computational and Bio-analytical Chemistry group led by Professor K Bisetty from the Chemistry Department.
- Systems Science group led by Professor Kevin Duffy.
- Health Studies (HIV/AIDS) led by the Enhancing Care Foundation under the leadership of Professor Umesh Lalloo.

These nine groups are all highly productive, with a critical mass of postgraduate students. The second list of 'emerging' research groups contains eight areas, each of which is on a steep developmental curve. These are Energy, Economics and Business Studies, Child and Maternal Health Care, ICT and Society, Transformation through the Arts and Design, Urban Futures, Transformational Education Studies and Studies in Higher Education Management.

Professor FAO Otieno
Deputy Vice Chancellor
Technology, Innovation & Partnerships

Professor S Moyo
Director
Research & Postgraduate Support

In trying to meet the Research strategic objectives and mandate, it is clear that the University needs to focus on ensuring that most of its staff have doctoral qualifications and that the pool of postgraduate students is increased. We are mindful that the increase in postgraduate enrolments demand an equivalent increase in supervision capacity of the various programmes offered by the University. Hence the necessary debate on how we ensure that the quality is not compromised and that we continue to provide a high quality service to both our students and those with whom we engage.

This report will contain contributions from a few identified researchers and entities that have contributed to building the research culture and outputs of the University. The outputs range from publications, postgraduate supervision, grants acquisitions, and strategic programmes amongst others.

The establishment of the first South African Research Chair Initiative (SARChI) at DUT was awarded by the Department of Science and Technology (DST) through the National Research Foundation (NRF) to the University. The Chair falls within the Institute for Water and Wastewater Technology. Professor Thor Axel is the Chair of the Development and Optimisation of Waste Water Treatment Technology for Developing Economies.

Professor Stenström's research provides a nexus between the health and environmental science area, with a focus on water and sanitation. He has an international reputation in the areas of risk assessment and health-related environmental issues. His work includes assessments of the barrier functions of water and wastewater processes in large and small-scale treatment, issues related to emergency response and multidisciplinary applied research where technology and health impact relates to the agricultural and the social fields. A detailed profile of his work appears later in this report. We are delighted and look forward to working with the SARChI and Water Institute to improve the research profile of the University. We are also proud to report that the year 2013 saw us reach the One Hundred (100) mark of publication units as a University and we are confident that this will continue to grow as long as we are able to work together and ensure that we attract and retain high calibre faculty and postgraduate students. Our congratulations extend to all the staff, students and researchers who have contributed to these outputs. We also acknowledge our pool of Honorary Professors, Associates and Postdoctoral fellows who continue to contribute towards postgraduate supervision and building capacity amongst staff through joint initiatives and publications. We do not take these affiliations for granted and are aware that we need continuously to create an enabling environment for research and collaborations to flourish.

On the Innovation front the University was a grantee of the Kresge Inyathelo Advancement Initiative Grant which will assist in building the University's advancement and alumni activities, as well as assist with grant sourcing and acquisition for the various University projects and requirements.

On the Research front the University hosted the eThekwini University Research Symposium in collaboration with the Municipal Institute of Learning (MILES); it also hosted the International Composites, Biocomposites and Nanocomposites Conference. Two successful events, an Institutional Research Day and a Research Awards evening, were held. We thank all those involved in organising and ensuring the success of these events.

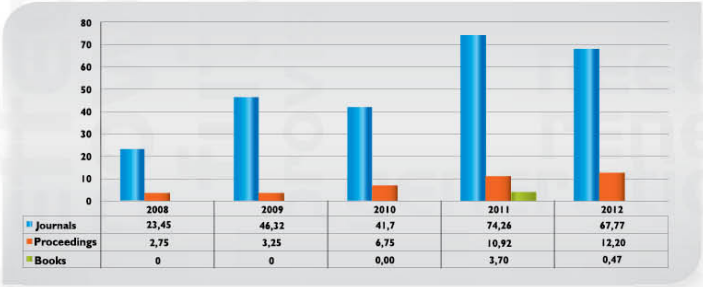
Finally we extend our gratitude to all the staff in the Research Directorate who continuously provide the research administrative support for various initiatives and events. We value their contributions and support.

RESEARCH AND POSTGRADUATE
SUPPORT PERFORMANCE

1. Overall Publication Productivity Units (DHET 2012 Subsidy Report to DUT)

The University claimed for research outputs amounting to 86.52 units for books, conference proceedings and journals for 2012 publications reported in 2013. DHET awarded only 80.44 units following the assessment by the Research Output Panel. In comparison to units claimed in 2011 (reported in 2012) there was a decrease of 8.44 units (10.5%) from the 88.88 units awarded for 2011 publications. The institutional publication trend for all publications (books, journals and conference proceedings) over the past five years (2008-2012) is shown in Figure 1. Audited figures for 2013 publications is not available at time of going to print, but figure 1 below shows audited data from 2008 to 2012:

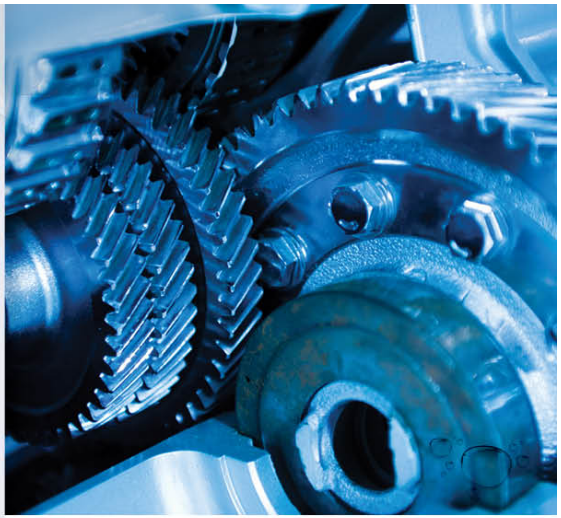
Figure 1. DUT total research output units by type of publication, 2008-2012



	2008	2009	2010	2011	2012
Journals	23,45	46,32	41,7	74,26	67,77
Proceedings	2,75	3,25	6,75	10,92	12,20
Books	0	0	0,00	3,70	0,47

1.1 Overall research output units byClassification of Educational SubjecMatter (CESM) category:

The submissions were classified in terms of the CESM categories given below and a considerable number of units (19%) were awarded for CESM category 8.This is an indicator out that this could be a potential area of strength.



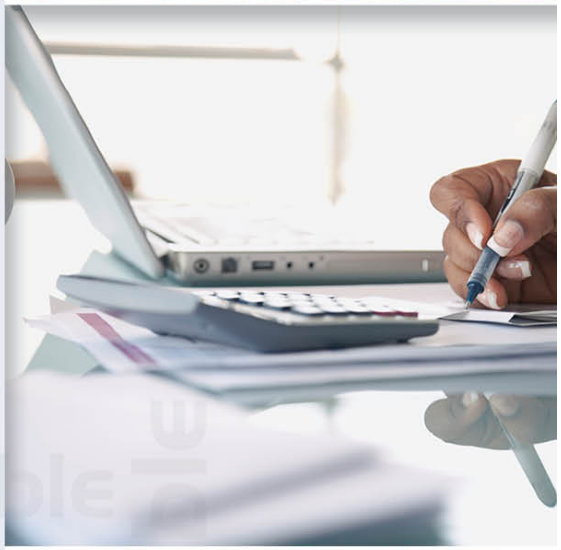


Table 1: Overall research output units by CESM category, 2012

CESM categories	Journal units	Conference units	Book units	Total	% of total
CESM 1 (Agriculture, agricultural operations and related sciences)	1.57	0.00	0.00	1.57	2.0%
CESM 2 (Architecture and building environment)	0.00	0.00	0.00	0.00	0.0%
CESM 3 (Visual and performing arts)	0.00	0.00	0.09	0.09	0.1%
CESM 4 (Business, economics and management studies)	12.67	0.00	0.00	12.67	15.8%
CESM 5 (Communication, journalism and related studies)	0.00	0.00	0.00	0.00	0.0%
CESM 5 (Communication, journalism and related studies)	0.00	0.00	0.00	0.00	0.0%
CESM 6 (Computer and information sciences)	0.00	4.07	0.00	4.07	5.1%
CESM 7 (Education)	8.50	1.50	0.00	10.00	12.4%
CESM 8 (Engineering)	8.79	6.50	0.00	15.29	19.0%
CESM 9 (Health profession and related clinical sciences)	7.58	0.00	0.00	7.58	9.4%
CESM 10 (Family ecology and consumer sciences)	0.00	0.00	0.00	0.00	0.0%
CESM 11 (Languages, linguistics and literature)	0.00	0.00	0.00	0.00	0.0%
CESM 12 (Law)	0.50	0.00	0.00	0.50	0.6%
CESM 13 (Life sciences)	9.23	0.00	0.00	9.23	11.5%
CESM 14 (Physical sciences)	11.02	0.00	0.00	11.02	13.7%
CESM 15 (Mathematics and statistics)	1.41	0.13	0.00	1.54	1.9%
CESM 16 (Military sciences)	0.00	0.00	0.00	0.00	0.0%
CESM 17 (Philosophy, religion and theology)	1.00	0.00	0.00	1.00	1.2%
CESM 18 (Psychology)	0.00	0.00	0.00	0.00	0.0%
CESM 19 (Public management and services)	2.00	0.00	0.00	2.00	2.5%
CESM 20 (Social sciences)	3.50	0.00	0.38	3.88	4.8%
Total	**67.77**	**12.20**	**0.47**	**80.44**	**100%**

1.2 Units awarded by type of publication for 2012

In terms of units allocated, 67.77 units were awarded for Journals, 0.47 units were awarded for books/chapters in books and 12.20 were awarded for conference proceedings. We note here that the University budget for conferences is approximately R1.2 million per annum and the 12.20 units awarded for conference proceedings means that R1 403 000 income based on the unit value of R115 000 covers the University expenditure on conferences and gives a small return of R 203 000.

2. POSTGRADUATE PERFORMANCE INDICATORS

2.1 Staff Qualifications Per Faculty

Table 2 shows the number of staff with Masters and Doctoral qualifications per Faculty. This is an important indicator as it influences the supervision capacity for postgraduate training at the University and the number of publication counts per academic staff member. In 2013 there were 97 academic staff with a Doctoral qualification and 277 had a Masters' degree. The figures for Doctoral qualifications are expected to increase in 2014 especially as the pool of Masters candidates who are registered for Doctorates begin to complete their studies. In 2013 approximately 16% of the academic staff had Doctorates, 46% had a Masters degree and, overall, 62% of the academic staff had a postgraduate qualification.

Table 2: Permanent and Contract Academic Staff Qualifications for 2013 and 2014

FACULTY	2013		
	Doctorate	Masters	Grand Total
Accounting and Informatics	8	36	44
Applied Sciences	22	33	55
Arts and Design	17	49	66
Engineering and the Built Environment	14	54	68
Health Sciences	11	52	63
Management Sciences	25	53	78
Total	97	277	374

2.2 Number of Permanent and Contract Academic Staff and Administrative staff for 2013

In 2013, 43% of the full staff complement was academic staff and 57% were administrative staff.

Staff	2013
Academic	590
Admin	770
Grand Total	1360

(2013 data as at 31 December 2013)

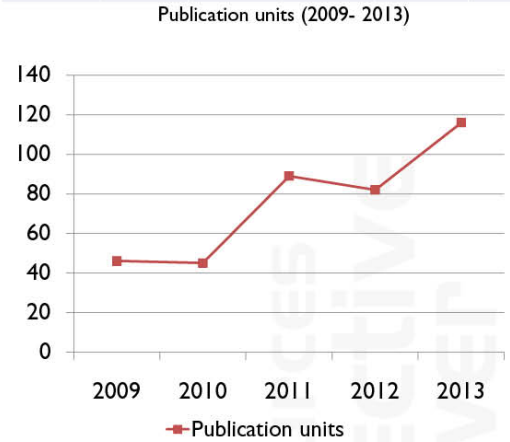
We take this opportunity to congratulate all those who have worked hard during the 2013 reporting year to ensure growth in every research key performance area: publications, supervision of postgraduate students, grants acquisition and engagement with various stakeholders and communities, thus taking the local context of the University into account.

Research Dashboard

1. Research Publications Unit Counts - Peer Reviewed Journal Articles

Research Publications (2009 - 2013)

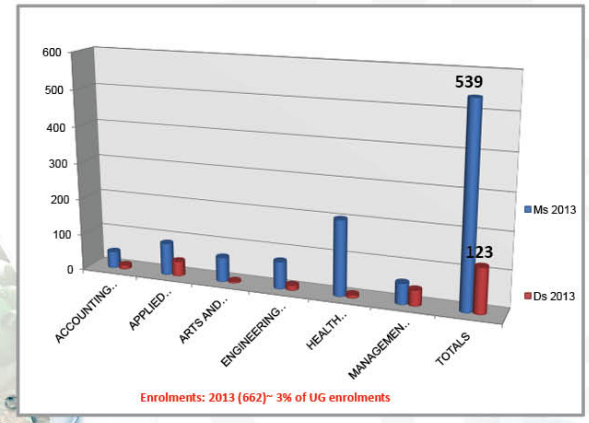
YEAR	2009	2010	2011	2012	*2013
Publication Units	46	45	89	82	116



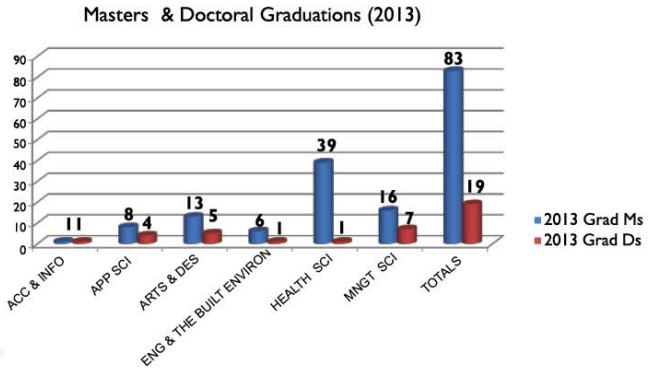
*DHET confirmation of 2013 units awarded are not yet available at time of going to print.

2. Postgraduate Enrolments (2013)

Enrolments Per Faculty (2013)



3. Postgraduate Graduations at Masters and Doctoral Level per Faculty (2013)



102/662 ~15.4% of 2013 Enrolments

4. Staff Qualifications per Faculty (2013)

Staff Qualification Update Per Faculty (2013)

YEAR/FACULTY	Ms 2013	Ds 2013
Accounting & Informatics	36	8
Applied Science3	32	2
Arts & Design	49	17
Engineering & Built Environment	54	14
Health Sciences	52	11
Management Sciences	53	25
TOTAL2	77	97
% of staff with Ms & Ds	46%	16%

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

FOOD AND NUTRITION SECURITY

Professor Carin Napier is an Associate Professor in the Department of Food and Nutrition. She leads the research group that focuses specifically on nutrition security and which involves communities. Nutrition security is defined as the physical, social and economic access to sufficient, safe and nutritious diets at all times by all household members. Nutrition insecurity manifests itself in malnutrition in the form of underweight and overweight. Micronutrient deficiencies contribute to nutrition insecurity and are often overlooked when addressing hunger in communities. Interventions often produce or encourage the consumption of more staples that do not address all the nutrient needs of people to allow for an active healthy lifestyle.

This research focus is in line with national and international policies and agendas. Nutrition security research can contribute towards achieving the Millennium Development Goals, the National Development Plan, as well as the Integrated Nutrition Programme of the South African Department of Health.

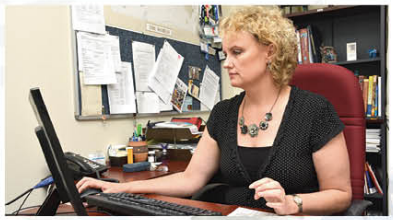
The research group focuses on food and nutrition-specific surveys and intervention type studies, and seeks to include various sectors, for example agriculture, food security projects and initiatives, education and environment. Recent research in South Africa highlights the lack of food and nutrient intake studies in specific communities and the country as a whole.

FOOD AND NUTRITION SECURITY

Food intake data is required for various applications to assess relationships between food, nutrient intake and disease, identifying the most appropriate foods for fortification, planning intervention programmes, developing nutrition education programmes, comparing food availability among different communities, and developing national food, nutrition and agricultural policies.

On a larger scale, addressing malnutrition on a community level can deliver higher economic returns as billions of US Dollars are lost every year, and countries lose 2-3% of their gross domestic product due to low productivity as a result of undernutrition.

Various community nutrition studies have been completed and resulted in publications. The group's current studies involve developing Food Based Dietary Guidelines for the elderly in South Africa. This is a national study in collaboration with national and international nutrition research academics. The research group is also involved with the food security project sponsored by the African Union through the Institute for Systems Science led by Professor Kevin Duffy and the Food Technology group which forms part of the Food and Nutrition Security research focus area at DUT.



Professor Carin Napier
Department of Food and Nutrition
Faculty of Applied Sciences

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

ECONOMIC INEQUALITY AND INTER-PERSONAL VIOLENCE IN SOUTH AFRICA

South Africa is a very violent country. It has around 50 murders per day, which places it sixteenth in the world in terms of its murder rate per 100 000 people; well over a million women are raped or sexually assaulted each year; and communities, schools and households have high rates of assault and intimidation.

What is the cause of this violence, which stands in sharp contrast with South Africa's neighbours? The violent 'education' which people received by apartheid – under which many disputes were dealt with by violent means - is undoubtedly a major underlying cause and its effects will take generations to repair. But we need to be cautious of single explanations for complex social problems.

For example, violence is very largely carried out by males, so the way South African men think about what it means to be a man (masculinities) plays an important part in their violent behaviour. The high number of guns in the country means that 'arguments which get out of hand' (by far the most common type of murder) can very easily become deadly.

The research team investigates another possible cause – the extreme levels of economic inequality in the country. Recent research in developed countries published in a 2010 book titled The spirit level: why equality is better for everyone has demonstrated that unequal societies perform poorly on a range of social indicators, including levels of violence.

ECONOMIC INEQUALITY AND INTER-PERSONAL VIOLENCE IN SOUTH AFRICA

Poverty on its own does not seem to be an important cause of violence, although it may explain high levels of burglaries, hijackings and the like. The influence of inequality seems to be explained by the fact that being poor when other people around them are rich makes people angry, which they take out on those close to them – family members, neighbours, etc. The team found support for this explanation in South Africa. That is, those districts (there are 52) with high levels of inequality as related to household expenditure also have high murder rates, while those with lower levels of inequality indicate lower murder rates. We are now investigating feasible ways of reducing expenditure inequality.

The Peace Studies Programme currently attracts a number of postgraduate students across the African continent who embark on research projects with the aim of understanding various social complex problems. In 2013, twenty students were registered as doctoral candidates and twelve students as masters candidates. Two doctoral and three masters students are expected to submit by the end 2014.

Professor Geoff Harris
Peace Studies Programme
Faculty of Management Science

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

ART FOR HUMANITY

The organisation, Art for Humanity, was founded in 2004 by Jan Jordaan as a Non-Governmental Organisation. One objective is to promote Human Rights consciousness by using the visual arts as a public advocacy medium dedicated to cultural empowerment of society, with a focus on the developing world. Another is to dedicate itself through its projects towards the professional empowerment of the visual arts and artists, primarily from southern Africa and the developing world.

The organisation's research focus is on the relationship between the arts and human rights and the ability of the arts to give visibility to that which society values within human rights. Issues relating to human rights are central to the theme of Social, Economic and Environment Sustainability.

In giving visibility to the values associated with human rights, AFH developed art and poetry projects with artists and poets, focussing on various human rights issues. These projects took the form of a public art and human rights advocacy campaign and the AFH Art and Human Rights School workshops programme (https://www.youtube.com/channel/UCvkf9cKvQKnSwV4VW5YvAlg).

Thirteen workshops, which took place in schools during 2013, involved the display of art works and poetry on large banners, followed by workshops in schools conducted by AFH during which human right issues and core societal values were discussed with learners.

ART FOR HUMANITY

Data documenting responses to these workshops were collected after the workshops, from participating teachers and learners. This was used for reporting to the programme donors, resulting in three year partnerships being concluded with the Democratic Development Programme (DDP), OXFAM and the National Arts Council during 2013.

AFH publishes e-newsletters on a quarterly basis. Director, Jan Jordaan, contributed to the introduction of 'The Cell Was My Canvas' authored by Raymond Watson. The designing of the AFH projects and programmes is done by the Director, with the most recent project, being implemented during 2013, titled *'The Art of Human Rights.'*

AFH is dependent on donor funding and employs mainly student interns, eight of whom served their internship with AFH and improved their qualifications during their tenure at National Diploma level and BTech levels respectively. The organisation's official website is http://www.afh.org.za.

Mr Jan Jordaan
Department of Fine Art and Jewellery
Faculty of Arts and Design

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

ON WATER AND SUSTAINABILITY

Water sustainability requires a holistic approach to water and sanitation management accounting, for the health and livelihood aspects as well as the interlinked technical, economic and environmental impact. The research and development linked to the SARChI Chair holder and the Institute for Water and Wastewater Technology (IWWT) accounts for this in several different ways exemplified below.

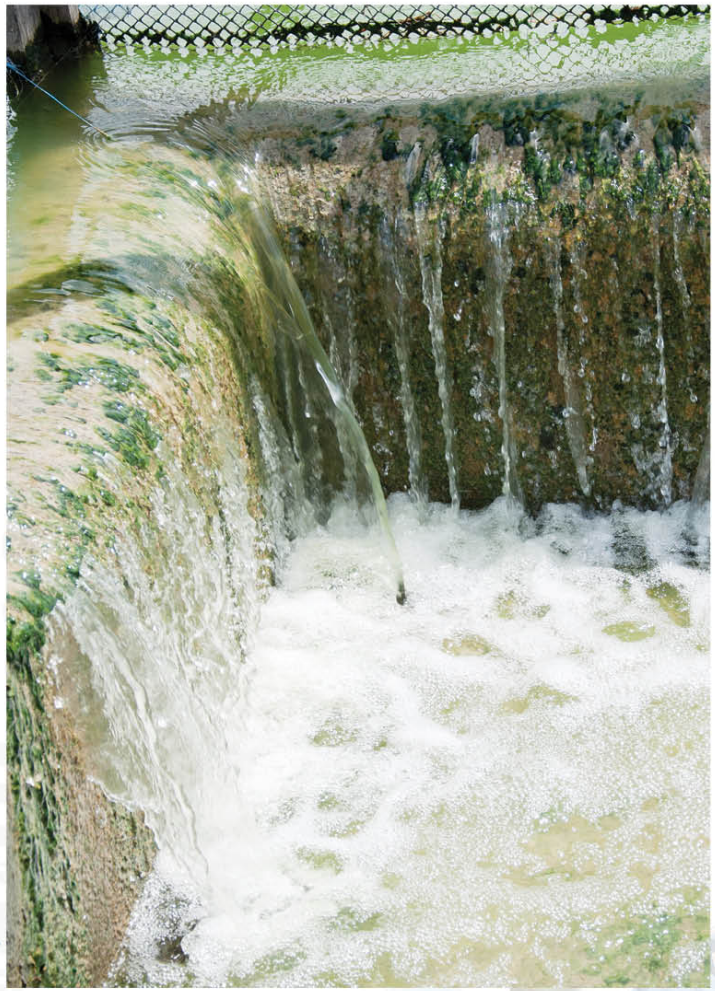
A common metric to measure the impact of different diseases, or external factors, on human health is Disability Adjusted Life Years (DALYs), calculations that account for the productive life years lost due to a single cause or different events. Based on the latest available statistics for South Africa, diarrhoeal disease ranks second after HIV in the national burden of disease and accounts for more than 1.1 million productive life years lost per year. Since water, sanitation and hygiene related cases are the main causes, effective treatment and management in this regard have pronounced positive effects on social security, health, economic productivity and as well on receiving environmental bodies of land and water.

The SARChI Chair holder's research embraces this in several different ways:

- By research related to optimization of different wastewater treatment processes, the risk to human health upon exposure through different downstream transmission routes will be reduced in parallel to a reduced chemical and eutrophication environmental impact;

- By accounting for the impact in a catchment perspective, it will account for the relative importance of different factors and thereby guide the national water strategy; By directed environmental research on selected pathogens and chemicals, a better understanding of their relative importance will be achieved. Additionally by linking this to disadvantaged communities and the relationship between water and food crop production the food security aspects are interlinked;
- By accounting for waste as a resource, the research may enhance economic benefits, for example in relation to energy production from microalgae, as well as accounting for water stress;
- By accounting for impact variability, climatic factors will be integrated, as for example in Disaster risk Reduction (DRR) due to flooding and drought periods and areas.

The combination and interrelationship between different factors needs to be understood and communicated. This is partly achieved through an integrated risk-assessment and management framework that links to the global work coordinated by the World Health Organization (WHO), where the Chair holder plays an active role.



Professor Thor Axel Stenstrom
SARChI Chair Institute for Water and Wastewater Technology (IWWT)

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

AFRICAN INDIGENOUS KNOWLEDGE SYSTEMS RESEARCH AT DUT

The research focus area in African Indigenous Knowledge Systems is African traditional medicine. In the past year the programme has largely been on the theory and philosophy of African traditional medicine; science and other ways of knowing; traditional medicine in the context of HIV and AIDS, sexually transmitted infections (STIs) and TB; as well as the commercialisation of traditional medicine.

Theory and philosophy of African Traditional Medicine: This project has received an NRF IKS grant for three years. During the first year of the grant more than 200 pages of material have been collected. The intention is to publish this work as a peer reviewed book, followed by an Encyclopaedia of African Traditional Medicine. The project has one PhD student registered on it.

Science and other ways of knowing: The researchers have been invited to submit and present papers to three conferences on: Mapping Science and Technology in Africa, Africa Health Conference and the Indigenous Psychology Conference. These papers are being reshaped for consideration for publication in appropriate journals for 2014/2015.

RESEARCHING FOR SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

AFRICAN INDIGENOUS KNOWLEDGE SYSTEMS RESEARCH AT DUT

Traditional medicine in the context of HIV and AIDS, STIs and TB: The research focus area has received funding of about R3,4m over two years by the University Research Co. LLC, entitled "Traditional Health Practitioners (THPs) and Government in partnership to combat HIV and AIDS, Sexually Transmitted Infections and TB (HAST) in communities of KwaZulu-Natal". It seeks to create social capital at community grassroots levels of KwaZulu-Natal, in particular Amajuba and Zululand Districts, that will lead to reduction in new infections, reduction in preventable deaths due to these infections, and ensuring a high quality of life for affected people in KwaZulu-Natal. So far the researchers have been working with about 520 THPs who have collectively seen 15827 patients in a period of 6 months. A referral system has been developed which has been incorporated into the Referral Policy of Amajuba District and a patient register which THPs use to record their patients. It is hoped that the referral form will eventually be adopted by the Department of Health in the whole province. The tools developed have been adopted by one health district of Limpopo.






Professor Nceba Gqaleni
Honorary Research Professor
Department of Public Administration and Economics
Faculty of Management Sciences

INSTITUTIONAL RESEARCH
ETHICS COMMITTEE

The Institutional Research Ethics Committee (IREC) has the responsibility of evaluating, approving and monitoring research involving humans, animals and the environment. It does so by following accepted research ethical guidelines as laid out by the Department of Health of South Africa and the Declaration of Helsinki. It aims to protect the rights and welfare of research participants, animals and the environment by adhering to the principles of beneficence, justice and respect for persons, especially vulnerable populations, animals and the environment. In so doing it must ensure that the research methodology and relevant literature is based on sound principles derived from appropriate studies with the aim to provide an answer to the research questions posed.

The IREC underwent a successful audit by the National Health Research Ethics Council (NHREC) in 2012. The committee has permanent registration with the NHREC and is permitted to review level one (1) protocols according to the National Health Act. The IREC resides within the Directorate for Research and Postgraduate Support.

The IREC was reconstituted in 2013 and consists of 2 representatives from each Faculty including a legal representative and 2 community representatives. Professor J K Adam is the Chairperson of the committee.

The IREC received a total of 91 applications for ethics clearance in 2013. These include Masters, Doctoral and Independent Study applications. A total of 71 applications were approved in 2013.

Ethics Training: The IREC successfully organised two ethics training workshops in 2013. The first was facilitated by Professor D du Toit, the Chairperson of the National Health Research Ethics Council; the second workshop was facilitated by Professor D Wassenaar, Chairperson of the Biomedical Research Ethics Committee at the University of KwaZulu-Natal.

Research involving minimal risk to participants (category 2) follow the expedited review process either through the IREC, Faculty Research Ethics Committee/ Faculty Research Committee. The document for ethics review is allocated to two committee members for review. Category 3 proposals are reviewed by the IREC committee at scheduled IREC meetings.

IREC MEMBERS 2013

Professor J K Adam- Chairperson; Faculty of Health Sciences
Professor M N Sibiya- Deputy Chairperson; Faculty of Health Sciences
Advocate R Sewlal- Legal Representative
Professor C Napier; Faculty of Applied Sciences
Professor R M Gengan; Faculty of Applied Sciences
Doctor C Smith; Faculty of Management Sciences
Professor N Dorasamy; Faculty of Management Sciences
Professor P D F Z Siyakwazi; Faculty of Arts and Design
Doctor R A Smith; Faculty of Arts and Design
Doctor D Heukelman; Faculty of Accounting and Informatics
Professor S D Eyono Obono; Faculty of Accounting and Informatics
Professor P Musonge; Faculty of Engineering and the Built Environment
Doctor D Whelan; Faculty of Engineering and the Built Environment
Mr C M C Hemson: Community Representative
Mr W Benjamin; Community Representative

RECOGNISING RESEARCHERS

NRF RESEARCH RATINGS

NEW RATING 2013:

Professor Vincent Bisetty

Professor Bisetty from the Faculty of Applied Science was awarded a new C3 Rating.
The total number of DUT Rated Researchers in 2013 was 14.

DUT RATED RESEARCHERS

B3 RATED	**C1** RATED	**C2** RATED	**C3** RATED
Professor M Marks	Professor FAO Otieno	Professor K Kanny	Professor K Bisetty
	Professor S Singh	Professor PY Tabakov	Professor F Bux
			Professor N Deenadayalu
			Professor KJ Duffy
			Professor N Gqaleni
			Professor R Mason
			Professor B Odhav
			Professor K Permaul
			Professor T Puckree

UNIVERSITY RESEARCH AWARDS 2013

UNIVERSITY RESEARCH AWARDS 2013

The Technology, Innovation and Partnerships office and the Directorate for Research and Postgraduate Support hosted the Annual Research Awards ceremony. The purpose of the event is to honour excellence in research at the DUT. VIP guests for the ceremony included Judge Vuka Tshabalala, Chancellor of DUT; Dr Jairam Reddy, Chairperson of Council; Dr Kathleen Jane Pithouse-Morgan, Key-note speaker and Senior Lecturer in Teacher Development Studies in the School of Education, University of KwaZulu-Natal; Mr Mahlubi Mabizela, Keynote speaker and Chief Director, Higher Education Policy and Development Support in the Department of Higher Education and Training; Prof Fred Otieno, Deputy Vice Chancellor TIP; Prof N Gawe, Deputy Vice Chancellor Institutional Support, among others, including nominees, researchers and support staff. .

TOP UNIVERSITY PUBLISHERS 2012

These are researchers who produced 2 units and above for DHET accredited publications.

- Professor Dimov Stojce Ilcev (Space Science Research Group)
- Professor Krishna Vincent Bisetty (Applied Sciences)
- Professor Krishnan (Mervyn Kanny) (Engineering & the Built Environment)
- Professor Nirmala Dorasamy (Management Sciences)
- Professor Jamila Kathoon Adam (Health Sciences)
- Professor Bharti Odhav (Applied Sciences)
- Professor Geoff Harris (Peace Studies – Management Sciences)
- Professor Graham Stewart (Arts & Design)
- Professor Dhiren Allopi (Engineering & the Built Environment)
- Professor Karunanidhi Tony Reddy (Management Sciences)
- Dr Alex Van der Merwe (Management Sciences)
- Dr Shalini Singh (Management Sciences).

TOP UNIVERSITY PUBLISHER (POSTDOCTORAL FELLOWS, RESEARCH ASSOCIATES AND RESEARCH FELLOWS) 2012

These are researchers who produced 3 or more DHET accredited publications.

- Dr Parvesh Singh: Research Fellow (Chemistry-Applied Science)
- Dr Turup Pandurangand Mohan: Research Fellow (Mechanical Engineering – Engineering & the Built Environment)
- Dr Katharigatta N Venugopala: Postdoctoral Fellow (Biotechnology and Food Technology - Applied Sciences)
- Dr Waafa NS Rmaih: Research Associate (Clinical Technology, Health Sciences).

TOP UNIVERSITY SENIOR RESEARCHER AWARD

This individual 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 was an Academic/academic support staff member at the University, currently conducting research and/or creative productivity and had a minimum of 4 units of DHET subsidy for the award year. (This includes authors units and student units if co–published.) The awardee was Prof Dimov Stojce Ilcev.

TOP UNIVERSITY JUNIOR RESEARCHER

This individual showed a promise of making a significant contribution to his/her field of study. The individual was an Academic/academic support staff member at the University, who completed their Doctorate qualification within the last five (5) years and was currently conducting research and/or creative productivity. A minimum of 2 units of DHET subsidy for award was expected. (This includes authors units and student units if co–published.) Dr Nokuthula Sibiya received a certificate of recognition for this category.

TOP UNIVERSITY WOMAN RESEARCHER

In this category the individual 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. (This includes authors units and student units if co–published.) Prof Jamila Kathoon Adam received a certificate of recognition for her achievement.

TOP RESEARCH GROUP OF THE YEAR

In this category the group had to have shown evidence of making a significant contribution to its field of study. The Group must consist of Academic/academic support staff members at the University; must have at least five (5) members and must have published a minimum of at least 6 units in the reporting year. (This includes authors units and student units if co–published.) Prof Krishnan (Mervyn) Kanny received a certificate of recognition for the Nanocomposites Group as Research Leader.

TOP RESEARCHER IN EACH FACULTY

In this category the applicant must 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 award (Includes Authors units and student units if co-published). This category has winners in three faculties:

(i) HEALTH SCIENCES - Prof Jamila Kathoon Adam (2.91);
(ii) MANAGEMENT SCIENCES - Prof Nirmala Dorasamy (3.66);
(iii) ENGINEERING AND THE BUILT ENVIRON - Prof Krishnan (Mervyn) Kanny (3.82).

TOP PUBLISHED MTECH STUDENTS

In this category the applicant must be currently studying towards their Masters and be involved in research and/or creative work and have published 0.5 units of DHET accredited journals/accredited output before the nomination. Mr Myalowenkosi Sabela (Chemistry – Applied Science: Supervisor K Bisetty) was the recipient of this award.

Prolific Authors 2013

Staff with five or more journal articles, conference proceedings and/or other scholarly publications:

FACULTY OF ACCOUNTING & INFORMATICS

Professor Oludayo Olugbara – Department of Information Technology;
Professor Seraphin Desire Eyono Obono - Department of Information Technology;
Professor Richard Millham - Department of Information Technology.

FACULTY OF APPLIED SCIENCES

Professor Bharti Odhav – Department of Biotechnology;
Dr Katharigatta N Venugopala - Department of Biotechnology;
Professor Suren Singh - Department of Biotechnology;
Dr Parvesh Singh – Department of Chemistry;
Professor Robert Moonsamy Gengan – Department of Chemistry.

FACULTY OF ARTS AND DESIGN

Professor Brian Michael Pearce - Department of Drama & Production Studies.

FACULTY OF MANAGEMENT SCIENCES

Professor Jeevarathnam Parthasarathy Govender – Department of Marketing & Retail;
Professor Nirmala Dorasamy – Department of Public Management & Economics;
Professor Roger Bruce Mason - Department of Marketing & Retail;
Ms Dayaneethie Veerasamy - Department of Marketing & Retail.

FACULTY OF HEALTH SCIENCES

Dr Charmaine Maria Korporaal – Department of Chiropractic & Somatology;
Professor Maureen Nokuthula Sibiya – Department of Nursing.

FACULTY OF ENGINEERING & THE BUILT ENVIRONMENT

Professor Dhirenchand Allopi – Department of Civil Engineering & Surveying;
Professor Krishnan (Mervyn) Kanny – Department of Mechanical Engineering.

TECHNLOGY, INNOVATIONS & PARTNERSHIPS

Professor Faizal Bux – Institute for Water and Wastewater Research;
Professor Thor Axel Stenstrom – Institute for Water and Wastewater Research;
Mr Ismail Rawat – Institute for Water and Wastewater Research;
Professor Kevin Jan Duffy – Institute for System Science;
Dr Sheena Kumari – Institute for Water and Wastewater Research;
Dr Taurai Mutanda – Institute for Water and Wastewater Research;
Professor Dimov Stojce Ilcev – Research and Postgraduate Support Directorate.

PROFESSORSHIPS ASSOCIATE AWARDED IN 2013

FACULTY OF HEALTH SCIENCES

Professor Ashley Hilton Adrian Ross – Department of Homeopathy;
Professor Maureen Nokuthula Sibiya – Department of Nursing.

FACULTY OF MANAGEMENT SCIENCES

Professor Jeevarathnam Parthasarathy Govender – Department of Marketing & Retail.

PROLIFIC SUPERVISORS 2013

Prolific supervisors who graduated students in the 2013 HEMIS reporting year are congratulated for their research teaching output:

Professor Deirdre Denise Pratt – Research & Postgraduate Support Directorate
3 DTech students.

Dr Izel Botha – Department of Homeopathy
3 MTech students.

Professor Joan Lucy Conolly – Centre For Excellence in Learning and Teaching:
1 DTech and 2 MTech students.

Dr Bongani Innocent Dlamini – Department of Applied Management:
1Dtech and 2 MTech students.

Dr Grant David Matkovich – Department of Chiropractic & Somatology:
3 MTech students.

PROLIFIC RESEARCHERS

Professor Raisuyah Bhagwan

Department of Community Health Studies
Faculty of Health Sciences

Professor Bhagwan is associate professor in the Department of Community Health Studies. Her research is inspired by a spiritually oriented approach to social work practice and her publications have focussed on spirituality at the interface of social justice and social development, welfare rights, peace building, eco-justice, indigenous minorities and traditional healing systems. She is a member of the Society for Spirituality and Social Work in the USA, which works at integrating spiritually oriented approaches into social work education globally. Professor Bhagwan served as guest editor for a special edition of Indigenous Spirituality and Social Work, in 2013, which focussed on minority spirituality groups and their use of ancient healing methodologies. She is involved in international collaborative studies with the Catholic University of America and Brigham Young University which focus on local and global approaches to the use of spirituality in a social work context. Professor Bhagwan was awarded the Faculty Researcher of the Year Award in 2012.

Professor Deonarain Brijlall

Department of Mathematics
Faculty of Applied Sciences

Professor Brijlall is involved with research and publications of papers in point-free topology and mathematics education. His special focus engages with research activities involved in the learning and teaching of mathematics in higher education. Within these domains of research Professor Brijlall has employed conceptual frameworks of 1) Shulman's model for teacher knowledge, 2) Ball et al. levels of pedagogical content knowledge and 3) Kilpatrick's conceptual framework for mathematical reasoning and APOS theory. His contribution to APOS theory includes, amongst others, undergraduate students learning of 1) monotonicity and boundedness of infinite real sequences, 2) continuity of functions, 3) optimisation and 4) the chain rule application in calculus. Prof Brijlall has published more than fifty peer reviewed publications in both national and international journals and conference proceedings. He has supervised successfully more than twelve masters and doctoral students. He serves as reviewer of many DHET rated journal articles and is an editorial board member for the US-China Education Reviews, Education Theory and Education Practice.

Professor Krishnan (Mervyn) Kanny

Department of Mechanical Engineering
Faculty of Engineering and the Built Environment

Professor Kanny is a seasoned engineer and scientist with over twenty years research experience in advanced engineering materials systems. He has extensive experience in mechanical engineering product, process and system design including development, implementation and commissioning.

Over the last decade he has been researching composite and biocomposite materials systems for a range of applications including the automotive sector and the built environment. More recently he has been processing and testing nano-infused structures for the aerospace, naval, and mass transit systems.

His current work is at the nanometer scale length, where new functionalities and properties of matter are being harnessed for a broad range of applications.

Professor Kanny holds a PhD in Materials Science and Engineering (TU, Alabama, USA). He currently heads up the naNO Composites Research Group (nCRG). Under his stewardship the group has grown from strength to strength and he has managed to build an impressive infrastructure and research capability in a relatively short time. The nCRG is one of very few groups in the country that has capability in the trinity of design, materials and processing.

Professor Livingstone Makondo

Centre for Excellence in Learning and Teaching (CELT)

Professor Makondo is an Associate Professor and Academic Development Practitioner in the Centre for Excellence in Learning and Teaching at the Midlands Centre (Pietermaritzburg). He holds a DLitt et Phil (UNISA) and an MBA (NWU). His wide range research interests in onomastics, anthroponomastics, teacher development, curriculum design, human resource management and student support draw from his experiences as a tutor, lecturer, senior academic development advisor, senior instructional designer and head of department at Morgan ZINTEC, University of Zimbabwe, Midlands State University, University of South Africa, North West University, University of Venda and Durban University of Technology. Since 2007 he has published and collaborated towards thirty-seven articles and book chapters in accredited journals. He has also presented forty-two papers at international conferences in seven countries, successfully graduated seven postgraduate students, is an active member and reviewer/editor for several local and international organisations.

Professor Faizal Bux

Institute for Water and Wastewater Technology

Professor Bux is the Director of the Institute for Water and Wastewater Technology. The Institute for Water and Wastewater Technology is recognized as a "Centre of Excellence" with emphasis being placed on applied science. The research niche area focuses on developing and optimizing innovative and sustainable technology for the improvement of society. The approach is multi-disciplinary, combining the skills of biotechnology, chemistry, environmental health and various engineering disciplines to satisfy the much-needed water requirements. The core focus areas are wastewater technology, algal biotechnology and bioenergy production. There are a various projects within each broad area. In general wastewater technology focuses on understanding and optimizing the mechanism of wastewater treatment in full scale wastewater treatment plants and constructed wetlands for the remediation of wastewater for environmental protection. Algal biotechnology includes production of biomass, biofuels, high value products, mitigation of carbon dioxide and wastewater treatment. Bioenery projects include the improved generation of biogas from UASB reactors treating brewery waste and biohydrogen production from sugarcane bagasse.

As a NRF rated researcher, he has more than 20 years service at higher education Institutes and has received numerous institutional awards including University Top Senior researcher award and NRF award. Professor Bux's primary research focus includes wastewater treatment, environmental biotechnology, algal biotechnology and biofuels production from waste substrates. He has supervised over 50 Masters and Doctoral students and 15 postdoctoral fellows served their tenure under his guidance. He has acted/current editor for CLEAN Soil Air Water (John Wiley & sons, Germany), Environmental Science and Health Part A (Taylor Francis, USA), Biofuels research journal and as a reviewer for over 40 international journals. He has contributed to more than 75 ISI journal articles, seven book chapters and over 100 conference presentations (national and international) and the editing of three books.

Professor Bux has acted as project leader for ten Water Research Commission projects. He has served as an invited Member of the Management Committee of the International Water Association (IWA) specialist group Microbial Ecology and Water Engineering (MEWE) and serves on the Executive committee of IWA- SA. He is a Fellow of the Water Institute of Southern Africa. He served on the scientific program committee/Advisory board/Chair/Invited speaker of various national and International conferences and is member of many professional bodies nationally and internationally. He serves as scientific advisor for many NGOs both in South Africa and internationally especially with regards to water quality issues. He established an extensive network of collaborators based at universities both nationally and internationally with active student and staff exchange for team members in the Institute. He is currently actively involved on bilateral projects with India, Italy, Egypt and Algeria.

Professor Nirmala Dorasamy

Department of Public Management and Economics
Faculty of Management Sciences

Professor Dorasamy is Full Professor in the Department of Public Management and Economics at the Durban University of Technology. She lectures in the undergraduate and postgraduate programmes at DUT, Public Administration Leadership and Management Academy (PALAMA) and the Department of Defence.

The focus area of her research is ethics and public sector management, with an emphasis on enhancing the effectiveness and efficiency of public service delivery underpinned by a strong sense of governance within a democratic dispensation. Her international linkages involve collaborative research with the Swinburne University of Technology, Federation University and

Monash University in Australia, and the American University in Cairo. The focus of this international collaboration is linked to governance, leadership excellence and ethical practices. She has successfully supervised and graduated eight Masters and three Doctoral students. Professor Dorasamy has developed resource material for the Department of

Defence and Business Studies Unit at the DUT. She has co-authored textbooks for senior secondary learners and books for higher education purposes and she has published in local and international journals as well as presented papers at national and international conferences. She has been a keynote speaker and session chair at the Rajiv Academy, India. Professor Dorasamy has also presented the conference communiqué for the African Association of Public Administration and Management (AAPAM).

In 2013, she was the recipient of the Top Researcher Award in the Faculty of Management Sciences and was nominated for an academic development scholarship from Mendel University, Czech Republic.

Professor Richard Millham

Department of Information Technology
Faculty of Accounting and Informatics

Professor Millham's research interests evolved from software and data evolution to cloud computing with mobile interactions. These interactions are incorporated into client applications involving e-voting, m-health, and m-monitoring for effective community service delivery. His collaborative research with fellow colleagues focused on developing a validated model and prototype for telecentre monitoring with the aim for sustainability and increased outreach to disadvantaged areas. This prototype was highly welcomed by the Universal Service Access Agency of South Africa (USAASA) and Department of Economic Development and Tourism; it was a recipient for a R500 000 grant for implementation in telecentres across South Africa.

Professor Brian Pearce

Department of Drama Studies
Faculty of Arts and Design

Professor Pearce is Associate Professor in Drama Studies and Acting Deputy Dean of the Faculty of Arts and Design. He is also a Member of the Institute of Systems Science. He completed his PhD at Royal Holloway, University of London in 1992. His creative outputs include professional and student productions. From 2000 to 2008, he was Editor of Shakespeare in Southern Africa. He is a member of several editorial boards. He is a Fellow of the Royal Society of Arts and is an Honorary Life Member of the Shakespeare Society of Southern Africa. He has published book chapters, journal articles, as well as reports and reviews in scholarly journals. His research is focussed on the plays of Shakespeare, both from the perspective of literary and theatrical criticism.

Professor Nokuthula Sibiya

Department of Nursing
Faculty of Health Sciences

Professor Sibiya is currently the Head of Department of Nursing. Professor Sibiya's area of research includes primary health care with specific focus on maternal and child health issues. In 2013, she successfully supervised four master's students. She co-published seven articles with her postgraduate students. She also co-authored a book chapter on community engagement by university nursing schools. She is a principal investigator of the Faculty of Health Sciences interdisciplinary research study on Maternal and Child Health Research, which has received a grant from the Medical Research Council of R500 000.00 annually for three years. She is also currently involved in a national collaborative research project on upscaling cervical cancer screening amongst women in South Africa. Professor Sibiya has presented papers at national and international conferences.

Professor Peggy Siyakwazi

School of Education
Faculty of Arts and Design

Professor Siyakwazi earned her MEd degrees from Rutgers, State University of New Jersey in USA and a PhD from the University of Zimbabwe. After teaching at Gweru Teachers' College and George High School in Zimbabwe, she joined the University of Zimbabwe as a lecturer and was promoted to Senior Lectureship position. She moved to the University of Venda for Science and Technology as an Associate Professor and was appointed Deputy Dean of the merged Faculties of Arts and Education. While at Venda, she led a committee that sourced R1 000 000.00 from the Tertiary Education Linkages Project (TELP). In addition to the above, Professor Peggy Siyakwazi was one of the people who initiated and facilitated the founding of an accredited Journal of Education Studies and became Editor-in-Chief. In 2005, Durban University of Technology appointed her as a Visiting Professor and then as a permanent member of staff. Professor Siyakwazi is currently an Associate Professor and Head of Department in the School of Education. She was also appointed a member of the HEQC National Reviews Accreditation Committee and an external examiner at other universities (University of Botswana, Chancellor College, Malawi, UNISA, University of KwaZulu-Natal, University of Fort Hare and Cape Peninsula University of Technology). Professor Siyakwazi is a member of the Deans of Education Forum. She has contributed many articles in professional journals, co-authored a book in 1999 called Strategies in Teaching and Learning and presented many papers at both national and international conferences in Teacher Education.

Professor Pavel Tabakov

Department of Mechanical Engineering
Faculty of Engineering and the Built Environment

Professor Tabakov's area of research focuses on optimization design of engineering structures using artificial intelligence and evolutionary algorithms. Here his work has mostly concentrated on the optimal design of thick composite pressure vessels based on an exact analytical solution. Because of the anisotropy in composites and the presence of the curvature in cylindrical pressure vessels, the design optimization of such structures presents considerable challenges and difficulties. Moreover, in the case of five or more layers it is hardly possible to find the optimum fibre orientation and their combination through the thickness using any calculus based method.

Recently he successfully implemented the Big Bang - Big Crunch algorithm for the structural optimization and analysis of large databases. He also developed a new methodology for the classification and cluster analysis of the data in large multidimensional databases by employing randomly travelling hyper-ellipsoids. Another field of his research where substantial results have been achieved is crystallography, where the behaviour of engineering materials is studied at microscopic level. His areas of interest include the following: Mechanics of Materials; Material Science; Composite Materials; Optimization; Artificial Intelligence and Data mining.

Professor Renitha Rampersad

Department of Public Relations
Faculty of Management Sciences

Professor Rampersad lectures in both the undergraduate and postgraduate progammes in the Department of Public Relations Management. Her specialist research areas: are Transformation in business; Corporate social responsibility and HIV/AIDS in business and HIV/AIDS in community programmes. Her research has been published in local and international peer reviewed journals and books and she has presented at both national and international conferences, including collaborative writings on a national and international level.

She has established collaborative research with the Viginia Commonwealth University in the United States. She has successfully supervised masters and doctoral students within the faculty and her research has contributed in developing students through various sub research areas/ projects, particularly in corporate social responsibility and HIV/AIDS, transformation in business, corporate communication and intercultural communication. Professor Rampersad heads an NRF funded community development project in the KZN Midlands for high school learners affected by social ills that plague communities in the Sisonke District.

Professor Penny Singh

Faculty of Accounting and Informatics

Professor Penny Singh is the Research Coordinator and Faculty Research Committee Chair in the Faculty of Accounting and Informatics. She has successfully supervised and graduated masters and doctoral students. Her research areas of interest and expertise include assessment and postgraduate research which have led to numerous conference presentations and proceedings, publications in leading international peer-reviewed journals and collaborations with higher education institutions in India, Europe and Mauritius.

She has served as reviewer for several international peer-reviewed journals and conferences and she was member of the editorial board of an international peer-reviewed journal.

We are sad to announce that Professor Singh passed away at the time the Report went to print.

EMERGING RESEARCHERS

Dr Josiah Adeyemo

Department of Civil Engineering and Surveying
Faculty of Engineering and the Built Environment

Dr Adeyemo is a Senior Lecturer in the Department of Civil Engineering and Surveying. He has worked extensively in developing and applying evolutionary algorithms to solve water management and hydrology problems. He is renowned for the development of a multi-objective evolutionary algorithm called multi-objective differential evolution algorithm (MDEA) which is used by many researchers worldwide, and the recently combined Pareto multi–objective differential evolution algorithm (CPMDE). Dr Adeyemo is currently working on using these superior and easy-to-use algorithms for solving multi-objective problems in water resources management especially in South Africa. Some of his research interests are real-time reservoir operation, multi-objective and multi-reservoir operations, irrigation scheduling, and climate change. Dr Adeyemo is a Reviewer for the Journal Academica, New York, USA and Editor to: Journal of Artificial Intelligence; Journal of Environmental Science and Technology, Singapore; Journal of Scientific Research and Asian Journal of Applied Sciences. He has supervised two doctoral students and four masters students successfully and presently has ten postgraduate students registered with him. He has ninety research publications.

Dr Marie De Beer

Department of Entrepreneurial Studies and Management
Faculty of Management Sciences

Dr De Beer's passion and interest in research lies in the development and upliftment of human capital. She derives satisfaction and fulfilment from supervising a large number of postgraduate students in the Department of Entrepreneurial Studies and Management which, supported by own research, leads to publications in the field. The transfer of skills and knowledge is facilitated by the application of ICT and management technologies. This approach simplifies the research process and expedites graduation of students and, in the process, contributes to the building of research capacity. The research by the students is directed at a wide spectrum of topics, such as organisational restructuring, locational determinants, incubation of SMMEs, outsourcing technical infrastructure, and control of medical waste, to name a few. The aim is to contribute to social, economic and environmental sustainability. The complexity and variety of research areas enrich the participation of students and supervisor alike.

Dr Hari Lall Garbharran

Department of Management Accounting
Faculty of Accounting and Informatics

Dr Garbharran is a Senior Lecturer and Research Supervisor in the Department of Management Accounting. He completed his Doctoral degree in 1998. His areas of research focus on Public Administration, Business Administration and Management Accounting. His current interests include the transformation of financial administration within South Africa municipalities for the achievement of unqualified audits.

As a supervisor, Dr Garbharran has graduated several doctoral and masters students. He has published and presented papers both locally and internationally. His most recent publication in an accredited journal relates to cash management practices of small businesses in the South African economy. He has co-authored textbooks for senior secondary learners. He has served as reviewer for papers in national and international journals. In addition, he serves as moderator and external examiner for several South African universities. Dr Garbharran also assists University staff and students with the editing and proofreading of journal articles for publication.

Dr Andrea Giampiccoli

Department of Hospitality and Tourism
Faculty of Management Sciences

Dr Giampiccoli graduated with a PhD from the University of KwaZulu-Natal (Department of Geography). He was based at North-West University TREES (Tourism Research in Economic Environs and Society) before joining the Hospitality and Tourism Department at the Durban University of Technology. His main area of research is tourism. Dr Giampiccoli's research focuses on various aspects, concepts, issues, and practices of community-based tourism related to community development. His research is directed to a better understanding of how community-based tourism can be a tool in holistic and sustainable development in disadvantaged communities. Towards this aim, Dr Giampiccoli makes efforts, beside his academic research, to practically follow and participate in community-based tourism projects in disadvantaged contexts. His other research interests are sport events and food-related topics.

Dr Paul Green

Department of Finance and Information Management
Faculty of Accounting and Informatics

Dr Green's research is in the area of Systems Thinking, Evaluation, Service Quality and Universities of Technology. In South Africa, although education is the recipient of the major portion of national expenditure, government funding to tertiary institutions has been on the decline, prompting institutions of higher learning to develop innovative methods to maintain financial stability. One of the strategies has been to attract and retain national and international students by the rendering of a quality service and creating a student-centred environment. The task is viewed as complex, as a university is regarded as a highly bureaucratic organisation intertwined with other systems, subsystems and various stakeholders. His research focuses on using the strengths of Critical Systems Thinking, Soft Systems Methodology, Viable System Method, System Dynamics and Steven Alter's Work System Method in developing a framework to understand evaluation of departments as service providers at UOTs. This work has been published in five accredited journals and presented at three international conferences.

Dr Oluwatosin A Ijabadeniyi

Department of Biotechnology and Food Technology
Faculty of Applied Sciences

Dr Ijabadeniyi is a Senior Lecturer in the Department of Biotechnology and Food Technology. His research interests include food security and food safety. His past food safety project involved the determination of persistent pathogens in food and the use of different interventions (such as environmentally friendly sanitizers and bio-sanitizers) to control persistent pathogens in fresh produce. His interests also lie in the utilization and processing of indigenous underutilized and neglected crops. Future projects include processing of underutilized crop for value addition and rural women farmers' empowerment; understanding the impact of consumer behaviour on food safety risk, and determination of effect of drivers of food safety risks (e.g. climatic change). Dr Ijabadeniyi is an alumnus of Brown International Advanced Research Institute, Brown University USA and he is also a Technical Working Group member of the World Bank Project/Global Food Safety Partnership. He is presently supervising masters and doctoral students in his department

Dr Rodwell Makombe

Department of Media, Language and Communication
Faculty of Arts and Design

Dr Makombe's research is focused on crime and violence in South Africa and the United States as it is represented in literature. It draws from the respective histories of apartheid and racial segregation which continue to influence the socio-cultural milieu of both countries. Some of his articles have been published in international journals such Journal of Black Studies and English. These include "Apartheid, Crime, and Interracial Violence in Black Boy", "Gang violence and postcolonial survival in Athol Fugard's Tsotsi" and "Crime and Survival in the Post-Colonial World/Text".

Apart from research on crime and violence, Rodwell Makombe is also interested in cultural and postcolonial studies. He also writes short stories and poems, some of which have appeared in the book, Splinters of a mirage dawn: an anthology of migrant poetry from South Africa (2013).

Dr John Mellem

Department of Biotechnology and Food Technology
Faculty of Applied Sciences

Dr John Mellen's previous research work involved the screening of indigenous plants for their antidiabetic potential, and evaluation in an STZ-induced diabetic rat model for their potential as a therapeutic agent for diabetes treatment. Currently his research focuses on characterization of biomolecules for the development of functional food or nutraceuticals to address diet and lifestyle related diseases and malnutrition. Specific interests include: health benefits of antioxidants/ phytochemicals in fruits, vegetables, grains and legumes against oxidative stress, and the development of bionanomaterials for the delivery of bioactive compounds. This research has the potential to generate new food products or ingredients with health promoting properties from indigenous underutilized/neglected crops that can be scaled up for application in the food industry. This research and that of other staff members within the Faculty of Applied Science has led to the formation of a Food Security focus area to combat the growing food security issues in South Africa.

Dr Maleshoane Rapeane-Mathonsi

Faculty of Arts and Design

Dr Maleshoane Rapeane-Mathonsi is a Senior Lecturer in the Department of Media, Language and Communication and is currently the acting Research Coordinator in the Faculty of Arts and Design. She holds a PhD in Sociolinguistics, from the University of Cape Town.

Dr Rapeane-Mathonsi's research interests include language use, especially studies on the linguistic landscape of Southern African cities, and language differentiation and gender. She has published a book, as well as articles on language and orality in peer-reviewed journals, some of which were co-authored with her postgraduate students. She has served, and continues to be, on editorial boards of some of the journals in her field. She has also supervised and externalised postgraduate theses, and, as an experienced translator, has translated many documents, including children's books, over the years. She was involved in a data-gathering project for the first Lesotho Sign Language Dictionary, published in 2012 under the auspices of the National University of Lesotho. Her current research projects include Sign Language and the language of social media.

Dr Navin Runjit Singh

Department of Electronic Engineering
Faculty of Engineering and the Built Environment

Dr Singh is a Senior Lecturer in the Department of Electronic Engineering, Faculty of Engineering and the Built Environment. His background in engineering coupled with his passion for health and wellness prompted him to undertake this multidisciplinary research that spanned across the areas of computational intelligence and exercise physiology. As reports of water intoxication and loss of life following over-hydration in endurance athletes persist, this study was primarily concerned with the novel task of designing, training, validating and testing an artificial neural network (ANN) in order to estimate the fluid requirements of athletes as well as classify their hydration status by taking into account several of the anthropometric, performance and environmental factors that affect fluid loss during exercise. It is the first time this engineering application has been applied to this particular physiological setting. The ANN performed well in classifying and accurately predicting the fluid intake needs of endurance athletes, and when used in conjunction with ad libitum fluid replacement, appears to have considerable merit in the field of the maintenance of hydration status during endurance exercise. The research outputs from this study consisted of two publications in the Clinical Journal of Sports Medicine, a pending publication in the International Sports Medicine Journal and presentations likely at conferences in 2014.

Dr Alexander Dawid Van Der Merwe

Department of Regional Governance and Development (Midlands)
Faculty of Management Sciences

South Africa faces a crisis in its education system. This is evident from the fact that, of the 1 627 004 pupils who sat the matric (grade 12) school leaving exams between 2009 and 2011, 54% failed. The consistently poor general state of education in South Africa has been attributed to, among other factors, a low quality of teaching and learning.

It is in view of these sobering realities and allegations that Dr Van der Merwe's research focuses on the role that open education resources (OERs) can potentially play in improving the quality of education and also wider access to it.

Mr Jean-Claude Munyaka Baraka

Department of Industrial Engineering
Faculty of Engineering and the Built Environment

Mr Baraka is a lecturer in the Department of Industrial Engineering. His research background is on discrete simulation and on humanitarian logistics. His primary research focuses on simulation modelling is aimed to improve productivity in the local manufacturing business processes. His secondary research interest focuses more on identifying quick and cost effective ways to transport relief equipment, goods and personnel in the Southern African region pre- and post-disaster events.

In term of research outputs, the simulation modelling research was successfully graded as his BTech final year project and led to the publication at the CIE 42 international conference in 2012. The Humanitarian logistics research was graded as a master's thesis and will lead, in 2014, to the publication at the South African Journal of Business Management and at the Southern African Transport Conference.

Mr Mendon Dewa

Department of Industrial Engineering
Faculty of Engineering and the Built Environment

Mr Dewa holds a Bachelor of Engineering in Industrial Engineering and an MSc in Manufacturing Systems and Operations Management. He is a full member of the Southern African Institute for Industrial Engineering and is registered Professional Engineer with the Engineering Council of South Africa. He is an Industrial Engineer with a passion for productivity improvement, additive manufacturing and energy optimisation.

He has done research work on productivity improvement on manual automobile assembly systems and bottle filling and crowning operations, some of which was published in journals and conference proceedings. Currently, he is working on his PhD on development of a scheduling algorithm for energy optimisation on a jobbing galvanising line, using fuzzy logic and genetic algorithms

Ms Heleen Grobbelaar

Department of Food and Nutrition
Consumer Sciences
Faculty of Applied Sciences

Universities are expected to take responsibility for the holistic development of students, producing "well rounded and grounded" graduates with a strong sense of social and civic responsibilities. Despite growing global interdependence and the increasing complexity of environmental, social, political and economic problems, students are often disconnected from communities, politics and the environment. In an attempt to overcome this disconnection, the Department of Food and Nutrition identified community engagement as an opportunity whereby students could be developed by means of a combination of structured learning opportunities, practice and critical reflection activities. Since students are considered both agents and beneficiaries of community engagement, student education and preparation for community engagement is very important in order to prevent causing harm to previously disadvantaged communities while at the same time, cultivating social and civic responsibility.

The aim of Ms Grobbelaar's research is to develop the community engagement capacity of Food and Nutrition students to foster their capacity to work in the field of Food and Nutrition. It raises the question: what should the nature and form of preparation be to adequately prepare students for a complex and diverse world and workplace and at the same time develop social responsibility?

Mr Bonga PraiseGod Khuzwayo

Department of Civil Engineering and Surveying
Faculty of Engineering and the Built Environment

Mr Khuzwayo is a lecturer in the Department of Civil Engineering and Surveying. His current area of research is in improving the efficiency and effectiveness in the design, manufacturing and construction of the beam and block slab systems. South Africa is in need of low cost and good quality residential buildings that more often than not require structurally efficient suspended flooring systems. However, some concerns such as, fire endurance, achieving a good quality roughened surface, requirement for temporary propping and lack of information from the manufacturers (about how the components making up the slabs are designed, manufactured and constructed) make it sometimes less favourable.

Consultation with the experts from the construction industry is undertaken in order to attain an in-depth understanding of the methods used to manufacture the precast pretensioned ribs, concrete masonry rebated filler blocks, on-site assembly and casting the in-situ concrete. Deficiencies, with respect to quality, strength and durability of slab components are addressed to the manufacturer for rectification. Areas where the codes provide inadequate information are investigated to find solutions. Mr Khuzwayo has presented papers at local DHET accredited conferences.

Mr Dave Nel

Department of Applied Management (Midlands)
Faculty of Management Sciences

Mr Nel is a Senior Lecturer in the Department of Applied Management, Riverside campus in Pietermaritzburg. His research is focused on the interdisciplinary applications of transculturation as a theoretical and analytical research framework. In the past year he has published two articles applying transculturation in two seemingly diverse academic fields. The first was a paper for the Emerging Markets Conference Board entitled "Marketing Mzansi: Transculturation as a theoretical framework for marketing research in South Africa as an Emerging Market." The second was an article for the Journal of Literary Studies entitled "Transculturation at the Confluence of African Literature, Vegetarianism and Indigenous Ritual Practice in Nape 'a Motana's Son-In-Law of the Boere."

Mr Shaveen Maharaj

School of Education
Faculty of Arts and Design

Mr Maharaj works in the School of Education as an Electronic Technologist. He has a Bachelor of Technology Degree in Electrical Engineering (Light Current, Instrumentation and Control Systems). He is currently completing his master's degree in the field of thermoelectricity co-generation. He has a decade of experience in the instrumentation and control systems field from oil refineries, power stations and various sugar mills, engineering field and it includes.

Currently his research involves industrial plants as excellent sources for green waste heat energy harvesting, especially if it is harvested from biomass plants such as wood and bagasse (sugarcane by-product) that are environmentally friendly. The design of a thermo-electric generator (TEG) unit using the Seebeck effect of converting heat energy into electricity is dependent on the applications the thermo-electric generator unit is 'thermally connected' to in order to achieve the required temperatures of the thermoelectric modules to produce electricity. Achieving a correct thermal gradient across the thermoelectric modules is crucial for the optimal functionality of these modules and the thermo-electric generator unit. Waste heat energy given off within these industrial plants are the target areas for my research.

Mr Maharaj's research is aimed at designing and developing a co-generating system that will utilize the principles of thermoelectrics to generate sufficient electrical energy from waste heat energy for the powering of a certain class of devices in industry such as battery charging, emergency lighting, direct current instrumentation etc. His research will result in the design, construction and advancements of a thermoelectric co-generation unit for waste heat energy harvesting into functional electrical energy within an industrial environment. Major research and testing is conducted at Illovo Sugar Eston Mill.

Mr Maharaj has presented his research at several local "Domestics Use of Energy" conferences and the findings of his research have been published in the conference proceedings.

Ms Pavitra Pillay

Department of Biomedical and Clinical Technology
Faculty of Health Sciences

Ms Pillay is a senior lecturer in the Department of Biomedical and Clinical Technology, having also been the former Head of Department. She is currently pursuing a PhD and is part of an international research group whose main aim is to contribute to a reduction in the global burden of schistosomiasis. The parasite Schistosoma haematobium causes a neglected tropical disease called Bilharzia which causes infections in more than 85% of countries in Africa. The prevalence of this infection is closely correlated with poverty, poor sanitation, and poor health services. Those who are most vulnerable to infection are pre-school and primary school children, adolescent girls and women of childbearing age. S. haematobium is known to cause pathology in the urinary female genital tracts. There is limited research on the extent of female genital schistosomiasis (FGS) among young women in South Africa. Mrs Pillay's role in this project is to investigate early diagnostic laboratory tools and public health indicators for FGS among young female populations at risk. Some of the diagnostic laboratory work is conducted in collaboration with partners from the Netherlands. Mrs Pillay has published manuscripts from both her Masters and PhD research. She is currently the Chair of the Departmental Research Committee and enjoys engaging in supervision of BTech and postgraduate students as well as peer review of local and international manuscripts.

Mr Ismail Rawat

Institute for Water and Wastewater Technology

Cultivation of microalgae using wastewater as a substrate for biodiesel production is a key area of Mr Rawat's research. With the continual increase in the cost of liquid fuels and concerns over fossil fuel reserves and greenhouse gas emissions, researchers have focussed on renewable sources for the production of liquid fuels. Biodiesel production from microalgae has come to the forefront of biofuels technology due to its renewability and sustainability. Mr Rawat has been working in this area since 2008. The major stumbling blocks to the technology are scale up and cost of production. Strain selection and cost effective substrates for cultivation of algae are crucial to the success of this technology. Cultivation media can amount to 30% of the total biodiesel cost. Much work has been conducted at laboratory scale; however this is not wholly application to large scale cultivation. Mr Rawat and the research group are currently undertaking large scale cultivation of algae in a raceway pond (300 000L) to determine the suitability of the technology for biodiesel production using wastewater as a substrate for cultivation.

Ms Dudu Gloria Sokhela

Department of Nursing
Faculty of Health Sciences

Ms Sokhela is a primary health care nurse at heart, hence the study, 'Assessing the experiences of the users of the Fast Queue in the primary health care facilities in eThekwini district, KwaZulu-Natal". The "Clinic: Fast Queue/Repeats" was introduced in the Comprehensive PHC Service Package for South Africa in 2001 with the purpose of transforming primary health care in South Africa. The Fast Queue is for patients who have been assessed previously either at a CHC or in a hospital that come to the clinic for repeat medicines and waiting time is minimized through the use of pre-packaged drugs.

The eThekwini health unit required that Ms Sokhela present the findings to the executive management, which agreed to implement her recommendations. A paper was published in 2013 in the Curationis in collaboration with Professor Kathy Nokes, a visiting professor at DUT from Hunter University, New York, and the study supervisors. She is currently writing up her DTech: Nursing thesis, which investigates the quality of care in the Fast Queue.

RESEARCH ASSOCIATES/ RESEARCH FELLOWS/ POSTDOCTORAL FELLOWS

Dr Suvardhan Kanchi

Postdoctoral Fellow
Department of Chemistry

Dr Kanchi specialises in separation chemistry and electro-analytical chemistry. Capillary electrophoresis is the powerful tool used to separate and quantify the natural and synthetic artificial sweeteners, drugs, capsaicin and poly phenols and inorganic molecules in various samples. All experimental work is supplemented with computational chemistry. Recently, he has developed novel and facile protocols for the separation of artificial sweeteners from food samples. During the process, wide varieties of separating agents were synthesized for the separation and quantification of toxic metal ions. High performance nano based electrochemical sensors were fabricated for the sensing neotame, stevia glycosides and sucralose molecules in different food samples. Chemometrics is one type of method evaluation. Using this statistical analysis treatment, the catalytic hydrogen wave technique was developed for the quantification of toxic metal ions in berry samples. Current research being undertaken are microbial flue cell and dye sensitized solar cell projects.

Dr Sheena Kumari

Research Fellow
Institute for Water and Wastewater Technology

Dr Kumari is the group leader for the water and wastewater research group at the Institute for Water and Wastewater Technology (IWWT). She currently serves as the principal researcher for a number of national and international bilateral projects at IWWT and is also actively involved in student capacity development. Her research interests include application of molecular biology tools to elucidate the complex microbial community in wastewater treatment process, developing new and alternate bioprocess technologies for nitrogen removal, control of filamentous bulking and foaming, and biofuel production from organic wastes. She currently supervises several doctoral and masters students at the University and has over 20 peer reviewed publications (current CI 190), technical reports and conference proceedings to her name. She also serves as reference group member for a number of Water Research Commission projects in South Africa and reviewer for many international journals and national funding agencies.

Dr Sanjay Kumar Gupta

Postdoctoral Fellow
Institute for Water & Wastewater Technology

Microalgae are versatile organisms capable of producing biomass year round using poor quality water. They have high growth rates, high photosynthetic efficacy and ability to produce very useful compounds such as fatty acids, neutrocueticals and fine chemicals. Theoretically, microalgae can produce 350,000 L/acre/year oil as compared to maximum 580 L/acre/year from oil crops. Harvesting of these tiny cells is energy intensive and results in unfeasible economics. Dr Gupta's research investigates the use of cationic polymers for microalgal harvesting, water and wastewater treatment processes. These polymers have shown promising results for algal harvesting and do not affect the lipid profile or contaminate flocculated wastewater. The researchers are also optimizing raw sewage as low cost substrate for the oleaginous microalgal biomass production in order to improve economic feasibility. Other research includes use lipid extracted algae as a protein source for aquaculture, biohydrogen production and health risk assessment of dietary intake of heavy metals.

Dr Lawrence Lekhanya

Research Associate
Department of Governance & Economics
Faculty of Management Sciences

Dr Lekhanya's research falls into two categories namely the South African perspective on rural entrepreneurship promotional strategy, and the role of universities in promoting social entrepreneurship development in South Africa. Since 1994 the South African government has been struggling with a wide range of social, economic development and rural developmental issues. The development and promotion of small, medium and micro enterprises (SMMEs) and social entrepreneurship are some of those critical issues that need professional contribution from academics. These have been seen as vital for job creation, income generation and the promotion of sustainable and equitable economic growth for both urban and rural areas. It is also widely acknowledged that SMMEs play a vital role in absorbing labour, penetrating new markets and expanding in creative and innovative ways. To date, there is limited research available about social entrepreneurship in South Africa and promotional strategies for rural SMMEs with regard to integrating new emerging technologies with traditional marketing promotional methods to assist the growth of rural SMMEs. Dr Lekhanya will be expanding on these concepts and ideas in textbooks he intends to publish.

POSTGRADUATE RESEARCH

Dr Anand Krishnan
Department of Chemistry
Faculty of Applied Sciences

ORGANIC CHEMISTRY: THE BUILDING BLOCK FOR MULTI-DISCIPLINARY APPLICATION

Dr Krishnan focused his doctoral research on the development of environmentally benign synthetic methods for the preparation of fine chemicals for medicinal and catalytic applications. Nitrogen heterocycles are sold on a large scale by pharmaceutical and allied industries as effective drugs against various human health conditions. His research investigations focused on:

- diversity-oriented synthesis of bioactive compounds
- clean synthesis of novel hetero-aromatic organofluorine compounds
- recyclable catalysis ofmetal-loaded boron nitride nanosheet
- green synthesis of bio-derived nanoparticles for industrial effluents remediation.

His research led to the development of cleaner and more economical synthesis of new compounds and materials; the generation of waste was minimised by using multi-component reaction systems which reduced several reaction steps to just one. His research also improved processes in terms of their environmental performance and efficacy through the application of catalysis, alternative solvents and reagents, and new reactor technologies.

His next goal is to utilise his postdoctoral fellowship to focus on developing nano structured materials and processes for catalysis and preparing organic energy storage molecules for solar application.

Mr Myalowenkosi Sabela
Department of Chemistry
Faculty of Applied Sciences

INTERACTION STUDIES OF NANOMATERIALS WITH PROTEIN USING COMPUTATIONAL AND EXPERIMENTAL TECHNIQUES

Mr Sabela's Masters research focused on the evaluation of interactions between polyphenolic compounds and protein using computational and capillary electrophoresis techniques. Arising from his study he gained valuable experience by exploiting the connections between chiral separations, experimental design and molecular docking. As a result, he has registered for a doctoral degree in Chemistry in the field of computational modelling and bioanalytical Chemistry, under the supervision of Professor K Bisetty.

The central theme of his research includes the synthesis, characterization and purification of nanomaterials with biological applications. Nanoparticles have unique properties that may be useful in a diverse range of applications, and consequently they have attracted significant interest. Particularly in the bio-medical field, the use of nano vaccines and nano drugs are being extensively researched. Nevertheless, knowledge about the bio-compatibility and risks of exposure to nanomaterials is limited. Hence, there is an urgent need to understand the molecular mechanisms of nanoparticles-to-biological system interaction. Specifically, the interaction of nanoparticles with proteins, which forms the basis of nanoparticle bio-reactivity, is the central theme of his doctoral research.

This is a state-of-the–art project which is aimed at providing useful insights into the conformational features involving nanoparticle-protein interactions that will be evaluated by experimental and high performance computational techniques. Mr Sabela is a recipient of the EUROSA fellowship and this work will be done in collaboration with University of Montpellier in France.

Ms Nelisiwe Nsele
Department of Food and Nutrition
Faculty of Applied Sciences

SEASONABLE FOOD SECURITY LEVELS AND COPING STRATEGIES OF A RURAL FARMING COMMUNITY

The measurement of household food security levels is important as it relates to income, location and seasonality. The rural farming community of Malangeni, located on the South Coast of KwaZulu-Natal, has insufficiently nutritious food and resources due to low income levels, poor nutrition knowledge and a lack of education. The majority of households (70%) have a total household income of between R1500 and R2000 per month and 65% of the households spend >R300 per month on food. This community relies on seasonal planted food variety in order to obtain grains, fruits and vegetables needed by the body to limit nutrient deficiencies.

They consume standard diets based on starchy staple food with limited fruits and vegetables resulting in multiple nutrient deficiencies. Therefore their food security and nutrient intake levels are higher during seasons where fresh produce is more abundant compared to seasons when less produce is grown.

This community uses a variety of coping strategies to deal with the various levels of food insecurity over the four seasons. The coping strategy score per season varied from a mean of 40.05 in Summer to 54.34 in Spring where the minimum score can be 0 (totally food secure) and a maximum score of 140 (totally food insecure) thus the higher the score the more food insecure the community is. The most common coping strategy applied in this community is to buy food on credit and secondly to share food with neighbours. The food variety score in this community relates to the food production from crops in different seasons. A total of 25 different individual food items were consumed in seven days in summer compared to winter where 79 different individual food individual food items were consumed in seven days. During spring and winter, all nine food groups were consumed ensuring a nutrient dense diet compared to autumn and summer where only eight food groups were consumed.

The findings of this Masters study confirmed that poverty result in reduced dietary variety indicating household food insecurity which can lead to malnutrition. It also confirms that farming communities are better placed in achieving food security by planting a variety of produce that can be consumed in various seasons throughout the year.

Ms Zikhona Tywabi
Department of Chemical Engineering
Faculty of Engineering and the Built Environment

PROCESSING OF SOUTH AFRICAN EUCALYPTUS DISSOLVING PULP AND SAWDUST WOOD IN IONIC LIQUID/ CO-SOLVENT MIXTURES

The Sappi Chemical Cellulose Saiccor mill situated 50km south of Durban has the capacity to produce approximately 800 000 tons of elemental chlorine free (EFC) chemical cellulose (dissolving pulp) per annum and is the world's largest manufacturer of chemical cellulose, a product made from wood from their plantations using the acid sulfite process. Cellulose is the earth's most widespread natural organic substance, making it an important bio-renewable resource. Products derived from cellulose are sold to converters for a wide range of consumer products such as clothing, cellular phone screens, cellophane wrap for sweets and flowers, pharmaceutical and household products, and make-up such as lipstick. Intensive exploitation of cellulose as a bio renewable feedstock has to date been prevented by the lack of suitable solvents that can be used in the chemical processes. Traditional dissolution processes of cellulose including the copper ammonium and viscose processes are often cumbersome (viscose process utilizing carbon disulfide as both a reagent and solvent, emits zinc and hydrogen sulphide which are harmful to the environment). Approximately 600 000 metric tons of carbon disulfide (CS2) are consumed each year for this application. For each ton of cellulose fibre produced, there are more than two tons of waste substances. During the process major volumes of waste water are produced and must be treated. These processes can be greatly simplified by the use of ionic liquid solvents, which are nearly entirely recycled.

Ionic liquids are perceived as 'green' solvents by the chemical industry unlike the volatile organic compounds (VOCs) that they could possibly replace, because their vapour pressures are extremely low (and are effectively negligible), they are not explosive and can be recycled and repeatedly re-used. Dr Robin Rogers and co-workers at the University of Alabama have found that solutions of cellulose can now be produced for the first time at useful concentrations using ionic liquids (ILs) as solvents. With increasing industrial pollution and consequent government regulations, the need to provide "green" processes to prevent pollution, to reduce waste production and to utilize renewable resources has become increasingly important.
This project will open up substantial potential for cellulose processing and manufacturing of new cellulose-based materials that has less impact on the environment.

Ms Tywabi is a recipient of the SANPAD-RCI (South African-Netherlands Programme for Advanced Development- Research Capacity Initiative) where she was required to attend six, one-week research modules in South Africa. In June 2013 she received an NRF scarce skills travelling grant, supplemented by DUT to spend two months at the University of Alabama's Department of Chemistry, Centre for Green Manufacturing in the United States of America under the supervision of Dr Robin Rogers (a pioneer in the field of cellulose dissolution in ionic liquids). She conducted all her experimental work at their state-of-the-art laboratories. She presented her work at various conferences in 2013.

Mr Telesphorus Lindelani Ngidi
Department of Public Management and Economics
Faculty of Management Sciences

ROLE PLAYED BY REPRESENTATIVE COUNCIL OF LEARNERS IN GOVERNANCE OF DISADVANTAGED PUBLIC SECONDARY SCHOOL IN THE PINETOWN DISTRICT

The study seeks to investigate the role played by Learner Representative Councils (RCLs) in governance of disadvantaged public secondary schools in the Pinetown District. Since the advent of democracy in 1994, the South African education system embarked on an all-important democratisation process. In schools, this approach included attempts to dismantle the concentration of power to include all stakeholders in the governance of schools, to ensure that education in its entirety would be geared towards development. In 1996, the South African government introduced several reforms in the form of legislation and education policies intended to democratise education and school practice.

This was a case study using mixed methods. Primary details were collected through a structured questionnaire, personally administered to the sampled population, as well as semi structured face to face interviews. These were conducted with Teacher Liaison Officers (TLOS)/ Principals, office based officials and SGB chairpersons from the sampled schools. Secondary data came from the Provincial Department of Education, school reports, and publications by the Department of Basic Education, newspapers and books. These records served as evidence that RCLs are just not window-dressing, but they are indeed a functionary recognised legitimate body.

The study will assist in establishing the extent to which democracy has found a place in governance of schools, whether learners understand democratic roles, and the effectiveness of mechanisms the department of education is using in ensuring that RCLs are effective, efficient and recognised in rendering the service they ought to.

POSTGRADUATE FORUM (PGF) EVENTS

The Postgraduate Forum members visited Izwelisha High School in Pinetown on the 31st of May 2013 to conduct an educational empowerment session for the Matric students. The main aim for this initiative was to reach out to students who lack career guidance and introduce them to university entrance requirements. This would help them pursue their studies and promote the significance of research at an early stage while marketing and promoting the opportunities available at Durban University of Technology.

The students were shown step by step how to apply using the CAO form and how to choose their careers wisely. They were also informed of the different DUT faculties and what career path each faculty represents.

The different financial avenues such as student loans and bursaries were introduced and explained to the students as a form of assistance to students who are unable to pay for their studies.

RESEARCH ORIENTATION SESSION

The Research and Postgraduate Support Directorate held the Research Orientation Session on the 13th March 2013 from 10:00-13:00 in the Conference Room in D-Block, 7 Floor, ML Sultan Campus. The induction meeting was well attended. The purpose of the meeting was to introduce students to various support departments, library resources and facilities available at DUT. It also included information sharing on external funding opportunities and research capacity building initiatives for students and staff.

The following individuals addressed the forum:

- The guest speaker for the session was Dr B Ngcamu who is the HR Manager at MUT, and a DUT Alumni.
- Mr Nhasengo from Student Housing dealt with- concerns which were raised regarding accommodation issues.
- Library Postgraduate support staff Ms Avenal Finlayson and Ms Sara Mitha gave information about the DUT- Libraries and online resources. A special vote of thanks went to the library from the Postgraduate Forum committee to the library for their service provision and support.
- Ms Vaneshree Govender addressed the forum on the Research Capacity Development initiatives which the Research and Postgraduate Support Directorate offer.
- Ms Charmaine Naidoo from Research & Post-graduate Support Directorate addressed the forum on grant processes, for scholarships, NRF online application processes, BTech and MTech block grants, other grants and funding opportunities.

WORLD FEDERATION OF CHIROPRACTIC CONFERENCE

The World Federation of Chiropractic (WFC), a non-governmental organisation representing the Chiropractic profession internationally, hosted its 12th biennial congress in Durban, 10-13th April, 2013. Around 750 delegates from 42 countries attended making this the largest meeting of the Chiropractic profession on the African continent.

The Durban University of Technology was a Gold sponsor of the event, with the Chiropractic programme utilising the opportunity to show case its research in this peer reviewed congress. There were 21 research poster presentations and four plat-form presentations, with one research poster winning the Africa Region prize.

Chiropractic staff and several students from the Chiropractic programme attended the congress and had a wonderful opportunity to meet international researchers and academics. Alongside the WFC congress, there was the Federation of International de Chiropractic du Sport symposium at which the Chiropractic programme had one research poster and two platform presentations, with one of the platform presentations winning first prize.

QUALIFICATION BAROMETER

Staff members who obtained their Doctoral Qualifications in 2013:

Dr Delene Heukelman
Department of Information Technology
TITLE: Developing a model to design and implement computer user interfaces in rural communities, and exploratory study Doctorate of Technology Degree in Information Technology.

Dr Nishani Ramdhani
Institute for Water and Wastewater Treatment
TITLE: Detection and quantification of nitrifying bacteria from South African biological nutrient removal plants Doctorate of Technology Degree in Biotechnology.

Dr Firoza Hafejee
Department of Basic Medical Sciences
TITLE: The role of leptin in HIV associated pre-eclampsia. Doctorate of Technology in Basic Medical Sciences.

Masters Qualifications in 2013

Mr Sherwin Mudaly:
Information Technology Support Services
TITLE: A model to improve understanding of the extent of usage of enterprise resource planning systems in a university.
Master's Degree in Information Technology.

Mr Njabulo Shongwe
Department of Information Technology
TITLE: Youth decision making process towards mobile phone HIV/AIDS preventive actions and gender differential.
Master's Degree in Information Technology.

Mr Sunildutt Kheru
Department of Finance
TITLE: An investigation into the account treatment of property, plant and equipment at public higher institutions in South Africa.
Master's Degree in Cost and Management Accounting.

Ms Aritha Pillay
Department of Electronic Engineering
TITLE: The development of a transit radio telescope at the hydrogen line frequency
Master's Degree in Electronic Engineering.

Mr Rishan Singh
TITLE: Cytotoxicity and gene expression of selected apoptotic markers in the human laryngeal carcinoma cell line (Hep-2) by Bulbine spp.
Master's Degree in Biotechnology.

Ms Lee Scott
Department of Fashion and Textile
TITLE: Telling Tales – Pictograms as a visual voice
Master's Degree in Graphic Design.

Ms Nontuthuzelo Sibiya:
Department of Nursing
TITLE: Work integrated learning experiences of primary health care post basic nursing students in clinical setting.
Master's Degree in Nursing.

Ms Natalee William-Classen
Department of Emergency Medical Care and Rescue
TITLE: The development of a disinfection protocol for the public sec-tor Emergency Medical Services in the eThekwini District of Kwa-Zulu Natal.
Master's Degree in Emergency Medical Care.

Mr Ashwin Inderlal
TITLE: The role of Total Quality Management in improving quality and organisational performance in footwear manufacturing organisation in KwaZulu –Natal.
Master's Degree in Quality.

MESSAGES FROM EXECUTIVE DEANS

Research within the Faculty is growing at a steady pace. During the 2013 academic year the Faculty set out to:

- Improve its research profile;
- Develop staff capacity for research; and
- Enhance support structures for research.

The following initiatives were undertaken to assist with improving the research profile and capacity development of staff:

Faculty Research Day

The Faculty held its first ever Faculty Research Day on 17 July 2013. Its purpose was to encourage and assist members of staff to engage in research, to nurture and develop research and supervision capacity, and to increase research outputs. This event was also a platform for seasoned researchers to showcase their research and lead by example. There were a total of 62 oral presentations. The keynote address was delivered by Dr Mustapha Ally from the School of Information Systems in the Faculty of Business Law at the University of South Queensland, Australia. The title of his talk was "Supporting your research journey".

Visiting Professors/Scientists

To maintain the momentum and positivity around research generated by the Faculty Research Day, the following senior academics were recruited by the Executive Dean to assist with supervision, support research, increase research outputs and various research related activities:

- Professor Richard Millham, Computer Science Specialist from the University of Bahamas
- Professor Lesley Stainbank, Accounting Educational Specialist from the University of KwaZulu-Natal
- Dr Jane Skinner, Education Specialist with a particular focus on Accounting Education from the University of KwaZulu-Natal
- Dr Mustapha Ally, Information Systems Specialist from University of South Queensland, Australia.

Postgraduate Research

Postgraduate research within the faculty also received numerous initiatives to support students on Masters and Doctoral qualifications.

A four part academic writing workshop was presented to the Faculty during March to April 2013. The workshop was facilitated by Dr Gift Mheta from the DUT Writing Centre. An Information Sharing Session for Masters and Doctoral Students, Staff and Supervisors was facilitated by Professor Penny Singh, who addressed the DUT processes and procedures. Professor Penny Singh and Dr Jane Skinner presented a series of interactive workshops. Topics included Supervision; Proposal Writing; Research Methodology; Structuring and Literature Review; Conference presentations and Article Writing. Mr Deepak Singh from the Department of Physics at the DUT facilitated a workshop on data collection and analysis.

Professor Lesley Stainbank and Dr Jane Skinner presented a series of Research Methodology workshops, which included Conceptualising a Research Topic; Theorectical Frameworks; Academic Writing; and Getting Published. Dr Mustapha Ally conducted a series of Community of Practice sessions on the qualitative statistical package NVivo

Research Software for staff and students within the faculty. The Faculty is making remarkable progress as it focuses its activities around the development of researchers. The aim is to ensure that all teaching staff are encouraged to engage in research especially for higher degree purposes. Staff are also encouraged to attend local and international conferences which is supported through the DUT central conference funding and to attend university driven workshops that assist with capacity development.

FACULTY OF ARTS AND DESIGN

Dr René Alicia Smith

The Faculty set out to improve on the following key areas: staff qualifications, postgraduate enrolment and throughput, supervision and research capacity, and to establish centres of excellence.

Staff qualifications

At the end of 2013, 11 members were registered for their Master's degrees and three had submitted their Doctoral theses for examination, with the hope of graduating in 2014. Another ten members were registered for Doctoral degrees. The following staff members completed postgraduate degrees in 2013: Mr S Maeko (MEd); Mr Ray Pillay (MTech), Ms Lee Scott (MTech), Ms G Untiedt (MA) and Ms Sharon Zoepke (MTech). This growth in Master's and Doctoral degrees provides for an increase in research and supervision capacity.

Staff research

The Faculty aimed at developing a culture of research, thereby improving research and supervision capacity. The office of the Executive Dean urged members to produce at least one research output per academic year. To achieve this goal, the Faculty organised internal workshops and also encouraged members of staff and postgraduate students to attend workshops organised outside the Faculty. Similarly, the Faculty sent out lists of relevant conferences and symposia that members of the Faculty could attend, including the Institutional Research Day and the MILES Symposium.

Postgraduate students

The Faculty hopes to expand postgraduate enrolment and to improve throughput rates. It plans to achieve this by marketing its offerings to potential students in rural South Africa and SADC, through the TDG grant. Again, the Faculty hopes to bridge the gap between BTech and MTech by organising regular Faculty specific research workshops and seminars. Lastly, the Faculty is working on its generic Doctoral degree, the envisaged PhD in Visual and Performing Arts, which has been submitted to HEQC, with the intention of offering it in the near future.

Establishing centres of excellence

The following centres are envisaged:

The Centre for Cultural Design, the Digital Media Centre and the Centre for Shakespeare Performance.

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Professor Theo Andrew

Research and scholarship

There are several initiatives in the Faculty aimed at improving scholarship and increasing research production. As an example, Civil Engineering at the Midlands holds regular formal research meetings with their staff and postgraduate students. The accountability and mentorship received during these sessions have led to three master's graduates and 13 papers delivered at conferences and colloquia. Another initiative was the seven faculty research clinics held on Saturdays during the first half of 2013. Except for the Vice-Chancellor who did the first clinic all other facilitators were from the Faculty and Library. These clinics were well attended by both staff and students and potential postgraduate candidates.

The following research outputs and highlights are an indication that the interventions are leading to improvement. There has been a significant increase over the last five years. The conference proceedings/presentations and technical reports increased from 71 to 77 and the journal/book chapter articles increased from 21 to 29, over the last two years.

Highlights

- Dr Debbie Whelan presented a paper (by invitation) at the International Week in Koblenz University, Ger many, October 2013
- Dr Debbie Whelan was invited by Professor Trevor Marchand (SOAS) to edit the section on Sub-Saharan Africa in Encyclopaedia of Vernacular Architecture of the World to be edited by Professor Marcel Vellinga from Oxford Brookes University.
- Yashaen Luckan was appointed to the steering com mittee of the UNESCO Chair for Sustainable Urban Quality and Culture. Attended official meetings with the Chair of the committee to formalise membership with Tshingua University in China.
- Yashaen Luckan was one of five international facili tators at the UNESCO workshop held at Zheijiang University of Technology, Hangzhou, China. This work -shop brought together graduate students from University of Rome, La Sapienza and Zheijiang University of Technology to engage with a City commissioned urban intervention / inner city housing project in Hangzhou City.
- Yashaen Luckan is currently co-ordinating the UNESCO urban intervention projects for Durban 2014. This international collaboration between students of Rome, China, Sudan, USA, India and DUT will result in urban design proposals for areas in Durban that require urban revitalisation.
- Dr Josiah Adeyemo was appointed as external reviewer for internal grant research proposal applications at Sultan Qaboos University, Oman.
- Dr Josiah Adeyemo appointed external examiner for Department of Civil Engineering, Central University of Technology, South Africa.
- Dr Josiah Adeyemo was appointed a member of program committee of EVOLVE 2013: A bridge between probability, Set Oriented Numerics, and Evolutionary Computing International Conference, Leiden, Netherlands.
- In November 2013, Stuart MacPherson, Gary van Vuuren and Aritha Pillay were invited to visit the California Institute of Technology (Caltech), the Jet Propulsion Laboratory (JPL) and the Owens Valley Radio Observatory (OVRO). The group was hosted by Professor Anthony Readhead, Rawn Professor

of Astronomy, Director, Owens Valley Radio Observatory (OVRO) and Senior Research Scientist, Jet Propulsion Laboratory (JPL) Caltech. The group visited the Caltech laboratories and were shown the research that is being undertaken to develop low noise receivers for radio telescopes operating in the Extra High Frequency, as well as the sub-mm band extending from 300 GHz to 3 THz. A visit to the JPL laboratories and the Space Flight Operations Centre followed. During this visit the group observed ground-based transceiver stations communicating in real time with a number of space-based satellites and probes, including the Mars rover Curiosity. The group also visited the Space Exploration Technologies Corporation (SPACEX) in Los Angeles. The group then spent two days at OVRO. The observatory is home to 4 different radio telescope arrays operating at different wavelengths including the Combined Array for Research in Millimeter-wave Astronomy (CARMA) radio telescope array. Finally, the group visited the Lewis Centre for Educational Research (LCER) in Apple Valley, California. An invitation was extended to DUT to join in this partnership which will result in DUT and South Africa being only the second international partner, after Chile, to join the programme.

- Stuart MacPherson and Gary Janse van Vuuren attended a workshop and made a presentation at Strengthening Astronomy in the North, HartRAO, sponsored by NRF.
- Stuart MacPherson, Gary Janse van Vuuren and D Ingala co-hosted a workshop at DUT with Prof Girish Beeharry from the University of Mauritius. The workshop explored the work being done at each site as part of the MITRA collaboration with DUT.
- Professor Mervyn Kanny from the Department of Mechanical Engineering received the "Top Researcher in the Faculty Award" for 2013.
- In December 2013 Professor Mervyn Kanny's Composites Research Group ran the first International Conference on Composites, Biocomposites and Nanocomposites at the DUT's Ritson Road Campus. This was attended by approximately 200 delegates over its 3 day duration. Following its success it is hoped to run another similar event in the near future.

FACULTY OF HEALTH SCIENCES

Professor Threethambal Puckree

The Faculty of Health Sciences has embarked on a process to sustain quality research and postgraduate output in the Faculty. In the November 2012 strategic planning session, Faculty Management committed itself to ensure capacity development in postgraduate supervision through participation, mentoring and interdepartmental supervision and co-supervision. In addition, all departments are actively recruiting postgraduate students. The Faculty wishes to develop at least three niche areas for research in the next five years.

The Faculty also embarked on a cohort supervision model which will allow the supervisory team to grow while ensuring quality postgraduate work. All Departments have committed to work towards producing at least a 0.5 unit output, thereby keeping the Faculty output at least close to the norm. The Faculty produced 11.52 units in 2013. Research output was hindered by the fact that less than 10% of the staff at that time held doctoral degrees. The Faculty now have 12% of staff holding doctorates and with the offering of our generic PhD this number is likely to grow. With an increased research supervision capacity, 206 masters and 9 doctoral students registered in the faculty's postgraduate programmes. This has resulted in an increase of 10% of total enrolment in the Faculty.

The Faculty's first externally funded niche area is "maternal health", a factor key to social, economic and environmental sustainability. We hope to develop a second niche in "occupational health". We continue to try to secure external funding to support our research. Some staff members have attracted external funding for individual projects. Work on securing local and international collaborations are on track. We are attracting international postgraduate students and this will improve in the future with the international collaborations that we are fostering. The Faculty also undertakes research in a variety of areas, including environmental pollution. Collaborative supervision of students registered for the PhD in Health Sciences with the water researchers will develop capacity in this area.

FACULTY OF MANAGEMENT SCIENCES

Dr Rishi Balkaran

Research within the Faculty of Management Sciences is gaining momentum as evidenced in the increased publications of books, accredited journal articles, and local and international conference presentations. The Faculty's output for 2013 was 39.04 units (36.79 for accredited journal publications and 2.25 for conference proceedings). The Faculty Research Committee approved 59 post graduate proposals in 2013, with 49% being doctoral thesis proposals. In addition, Faculty staff members have secured external funding for research projects, viz

- HIV/AIDs in the Sisonke District
- Nanotechnology
- Food security
- Management Research for the DUT

The Faculty also embarked upon a recruitment drive in 2013 called Project 500. This project was initiated to sustain postgraduate output and quality research. Based on the response from this project, the Faculty awarded 600 students with provisional acceptances into postgraduate studies in 2013/2014.

The Faculty strives to promote interdisciplinary research and has planned to set up several clusters to streamline research and to promote social, economic and environmental sustainability. The Faculty is in the process of planning to set up a research enterprise to promote niche area research and has identified areas such as Peace Studies, Centre for Local Government studies, Community Development, Higher Education Management and Food Security, to name a few. These areas will be further developed in 2014 and will ensure a sense of cohesiveness with the research being undertaken within the Faculty and is fundamental to sustainable and continuous research. It is envisaged that the research enterprise will facilitate mode 2 type of research among research units within the enterprise.

The aim is to move away from an insular approach to research to a more inclusive approach that fosters collaboration with internal and external stakeholders. The outcome of this should be increased enrolments, graduates, publications, external engagements, transdisciplinary research, enhanced funding and the growth in research within the Faculty.

2013 MTECH AND DTECH GRADUATES

FACULTY OF ACCOUNTING AND INFORMATICS			
PROGRAMME	STUDENT	PROJECT TITLE	SUPERVISORS
DTech: Library and Information Studies	Neerputh, Shirlene	Academic integration of libraries at Universities of Technologies (UoTs) in South Africa	Underwood, PG
MTech: Information Technology	BM Ndhlovu	Towards a lightweight framework for mobile documentation of very small business transactions	Olugbara OO
FACULTY OF APPLIED SCIENCES			
DTech: Biotechnology	Mchunu, Nokuthula Peace	Xylanase hyper-producer: Genome of the Thermophilic fungus Thermomyceslanuginosus	Permaul K, Singh S
DTech: Food Technology	Obilana, Anthony Obafenmo Olusegun	Nutritional, physcico-chemical and sensory characteristics of a pearl millet-based instant beverage powder	Odhav B
MTech: Biotechnology	Deepnarain, Nashia	Development and optimization of remedial measures to control filamentous bacteria in a full scale biological nutrient removal plant	Bux F; Santosh Kumar,SK
	Mogany ,Trisha	Optimization of culture conditions and extraction method for maximum phycocyanin production from a hypersalinecyanobacterium	Bux F
	Moodley, Nivrithi	Antimicrobial activity of ciprofloxacin – coated gold nanoparticles on selected pathogens	Odhav B
	Perumal ,Alicia Ann	Characterisation of biodiesel from Litseaglutinosa	Odhav B
MTech: Chemistry	Ramphal, Sayil Rohith	Analysis of selected organic pollutants in water using various concentration techniques.	Moodley KG; Chetty DK
MTech : Food and Nutrition	Nsele, Nelisiwe Queeneth	The effect of seasonal food variety and dietary diversity on the nutritional status of a rural community in KZN	Napier C

FACULTY OF ARTS AND DESIGN			
PROGRAMME	STUDENT	PROJECT TITLE	SUPERVISORS
DTech: Language Practice	Reddy ,Vasantha	Towards the development of an oral selection procedure for acceptance into the Fashion and Textile Programme at the Durban University of technology: Using life histories	Singh P; Andrews M
MTech : Fine Art	Norval, Anet	Autobiographical Narratives: An investigation into the artist as celebrity	Roome J; Peppas M
MTech : Graphic Design	Somlenze, Mzomhle	The use of graphic design materials as a resource to address the issue of literacy acquisition in rural schools of the Eastern Cape	Pratt DD; Wells K
	De Beer, Anneli	An investigation of Images of Woman: The development of an awareness campaign to boost self-esteem amongst South African woman	Sutherland I
	Shange, Phumzile Jean	Talking Heads: An exploratory account of the experience of siyazama craftswoman living with issues of culture, gender, and HIV/AIDS	Wells K; Andrew RC
FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT			
MTech: Civil Engineering	Oyebode, OluwaseunKunle	Modelling streamflow response to hydorclimatic variables in the upper Mkomazi River, South Africa	Adeyemo J; Otieno F
MTech: Mechanical Engineering	Moletsane, Moeletsi	Crash modelling of a light composite aircraft.	Johnson JD
MTech: Chemical Engineering	Chukwuka, Gabriel Arinze	Evaluation of Batch Biodiesel Options for Developing	RathilallS;Pillay VL

FACULTY OF HEALTH SCIENCES			
PROGRAMME	STUDENT	PROJECT TITLE	SUPERVISORS
DTech : Radiography	Munsanje, Foster	Frontline radiographic human capital development – a case of Zambia and way forward.	Gwele N S
MTech: Emergency Medical Care	Newton, Paul Richard	An evaluation of the appropriateness of emergency medical service (EMS) responses in the eThekwini district of KwaZulu-Natal.	Naidoo R; P Brysiewicz
MTech: Nursing	Chandramoha, Sandhya	Spirituality and spiritual care amongst professional nurses at public hospitals in KwaZulu-Natal.	Bhagwan R
MTech: Nursing	Jacpasad, Neervani	The evaluation of integrated management of childhood illnesses training for learner nurses in KwaZulu-Natal College of Nursing.	Sibiya M N; Sokhela DG
MTech: Nursing	Mbangi, Ntombovuyo	Factors influencing high school learners to choose Nursing as a career.	Sibiya M N; Pillay P
MTech: Nursing	Munsamy, Michelle	A clinical audit of the implementation of the Tuberculosis screening tool amongst clients who are on anti-retroviral therapy in the eThekwini local municipality clinics.	**Botha I**
MTech: Nursing	Sooruth, Umritha Raj	The use of Standard Treatment Guidelines and the Essential Medicines List by registered nurses at primary health care clinics in the UMgungundlovu District.	Sibiya M N; Sokhela DG
MTech: Radiography	Gqweta, Ntokozo	Knowledge, skills and perceptions of diagnostic radiographers on image interpretation of chest diseases in eThekwini.	Naidoo S; Peer F
MTech: Chiropractic (Partial Research)	Adams, Justin Charles	A comparative analysis of six international chiropractic regulatory systems.	Korporaal C M
	Cuppusamy, Dillon	A systematic review to determine the evidence to support the use of flexion distraction Chiropractic technique.	Korporaal C M; O'Connor L

FACULTY OF HEALTH SCIENCES			
PROGRAMME	STUDENT	PROJECT TITLE	SUPERVISORS
	Gernetzky, Joshua	The effect of a cooling cuff and moist ice pack on radial artery blood flow and lumen diameter.	O'Connor L;Varatharajullu D
	Govender, Derusha	Racial variations of selected thoracic spine radiographic parameters of males in the greater Durban area.	Shaik J
	Harris, Kelly Jayne	The definition of the current knowledge around evidence based conservative management of ITBFS: a systematic review.	Korporaal C M; Phillips R
	Harrison, Michael Robin	A systematic review of the effectiveness of the Gonstead technique.	Korporaal, C M; Harpham, G
	Hitge, Candice Elaine	Patients at Marburg Haven Clinic: A demographic and disease profile.	Ndlovu, P Z; Korporaal, C M
	Karim, Yumna	The effect of various pillow types on cervico-thoracic and forward head posture in young adults.	Shaik, J
	Koenig, Jean Pierre	The relationship between postural stability, sway, balance and injury in adolescent female soccer players in the eThekwini District of KwaZulu-Natal.	Puckree, T
	Veerasamy, SeerouvenNaiken	The effectiveness of dry needling versus Flurbiprofen LAT patch in the treatment of myofascial pain syndrome of the upper Trapezius muscle.	Korporaal, C M; Thandar, Y
MTech: Homoeopathy (Partial Research)	Ramnarayan, Sumir	A double blind placebo controlled homoeopathic proving of Malusdomestica 30CH, with subsequent comparative analysis according to the Doctrine of Signatures.	Maharaj, M; Somaru, N

FACULTY OF MANAGEMENT SCIENCES			
PROGRAMME	STUDENT	PROJECT TITLE	SUPERVISORS
DTech: Business Administration	Smith ,Carol	An Analysis of tacit Knowledge-Sharing Behaviour, within a social Capital Framework, in a Business Environment of a South African University of Technology	de Beer M; Mason RB
	Gumede-Hlengwa, Dumsile Cynthia	Challenges of working and studying at a satellite campus: A case study of the Riverside campus of the Durban University of Technology	Dlamini BI; Zondo RWD
DTech: Public Management	Mabila, Ndiphethe Olive	Job satisfaction in the Royal Swaziland Police Services. A case study of Manzini and Hhohho regions	Dorasamy N; Wallis M
DTech: Quality	Vahed, Anisa	Ensuring the quality of pedagogy through games in Dental Technology at a selected University of Technology	Singh S; Mc Kenna S
DTech: Public Management	Mathaba, Richard S R	External whole school evaluation of underperforming secondary schools in Mpumalanga Province	Dorasamy N; Parker K
MTech: Marketing	Kamwendo, Andrew Ronald	The effects of consumer ethnocentrism on the establishment of a consideration set of convenience products	Corbishley K; Mason RB
	Abosede Ijabadeniyi	The influence of cultural diversity on marketing communication: A comparison of Africans and Indians in Durban	Govender JP; Veerasamy D
	Adat, Nasifa	Customer Satisfaction at a selected retail pharmacy chain in the great Durban area	Penceliah S; Noel DT

FACULTY OF MANAGEMENT SCIENCES			
PROGRAMME	STUDENT	PROJECT TITLE	SUPERVISORS
MTech: Public Management	Letooane, Mpho Kenneth	Factors impacting on the quality of work life: A case study of University "A"	Ngcamu BS; Dorasamy N
MTech: Public Relations Management	Kanny, Evashnie	The role of communication tools in shopping centre management within the great Durban area	Rawjee VP; Docrat S
MTech: Quality	Doherty-Bigara, Francis M	The Emergence of Creativity and Innovation from a Quality Perspective	Singh S; Naidoo R
	Penceliah, Thamindri	The impact of Inclusive Education on the Quality of Teaching and Learning in the Foundation phase: An Educator's Perspective	Reddy K; Dorasamy N
	Muslim, Tufayl Ahmed	Development of a quality management system framework for dental assisting education in South Africa.	Singh S; Naidoo R
MTech: Hospitality and Tourism Management	Deen, Anisah	An Evaluation of Hospitality within a Provincial Hospital in the Southern Area of Durban, KwaZulu-Natal	Balkaran R
MTech: MBA	Dimaza, Goitsemang Rosemary	Promoting Tourism in the South Coast region of KwaZulu-Natal through tour operators	Maharaj R; Docrat S

RESEARCH PUBLICATIONS