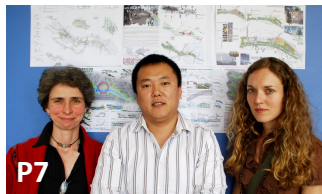


# Faculty Newsletter

## IN THIS EDITION



**Working Together  
Saving Tomorrow Today  
COP17  
28/11—9/12/2011**

## Message from the Dean

The University has received over 35 000 applications for the 2012 academic year and out of those 9374 are for EBE. The amount of applications received over the past couple of years has increased enormously and staff members in the Faculty Office have borne the brunt of it.

On this note, we are truly sad to be saying good-bye to Diann Donald, who will be taking early retirement at the end of December. She has played a critical role in the undergraduate section and we are very grateful for the contribution she has made to the Faculty.

In addition to Diann, we have

another four staff members who will be retiring at the end of the year. They are Professor Duncan Fraser from Chemical Engineering, Mrs Ann Steiner from the Energy Research Centre, A/Professor Tony Sayers from Mechanical Engineering and Mr Adrian Jongens from Electrical Engineering.

I will be hosting a celebration event at the end of November to acknowledge our retirees, the ad-hominem promotions, and various awards received by staff.

You would have received an email asking all staff to participate in the 2011 EBE Climate survey. I know it is a busy time of year but I

ask you to take the time to complete the survey, as it is important for us to get an idea on how staff are feeling about their work environment, so we can plan for 2012.

In October, I hosted a dinner with six of our prominent alumni, and a lunch for our local high school principals. Both events were very valuable, and we received important feedback and input from the different participants. These events will become an annual part of our calendar to ensure that we continue to build good relationships with our important stakeholders.

## AD-HOMINEM PROMOTIONS

Congratulations to the following staff members who have received their Ad-Hominem promotions in acknowledgment of their continued good work and commitment to the Faculty over the years.

### Full Professor

Associate Professor Jennifer Case (Chemical Engineering)

### Associate Professor

Dr Nic Coetzer (Architecture)

Dr Jochen Petersen (Chemical Engineering)

Dr Azeem Khan (Electrical Engineering)

### Senior Research Officer

Dr Megan Becker (Centre for Minerals Research)

Dr Steeve Chung Kim Yuen (BISRU)

### Senior Lecturer

Ms Nicky Wolmarans (Civil Engineering)

Dr Olabisi Falowo (Electrical Engineering)

### Senior Technical Officer

Mrs Penny Park-Ross (Centre for Materials Engineering)

## Second place in IOM3 World Lecture Competition 2011

Dr Dyllon Randall, a research officer from the Department of Chemical Engineering, was awarded second place at this year's Young Persons' World Lecture Competition, which took place on 29 September at the University of São Paulo in Brazil.

The competition is organised by the Institute of Materials, Minerals and Mining (IOM3) and during the past year over 300 candidates have participated in a series of heats which are organised by local affiliated societies of the Institute. Randall was one of the nine candidates from Brazil, Hong Kong, Ireland, Malaysia, Singapore, South Africa and the UK who were selected to participate in the final competition. The candidates had to be under the age of 28, give a 15-minute lecture on a materials-related subject and answer questions from a

panel of judges. Randall's presentation was entitled: 'Pass the salt – recovery of water and salts from mining brines using eutectic freeze crystallization'. His love for chemistry and concern for the environment have shaped his career path significantly. His current research focuses on using crystallization and precipitation to treat waste waters, particularly in the mining industry of South Africa. His ultimate goal is to get people to start thinking of waste as a resource.

First place went to a student from Nanyan Technological University in Singapore and third place to a student from Oxford University in the UK. The winners each received a MacBook Air and cash money of £1 500 for first place, £1 000 for second and £500 for third. Next year the competition will be held in Lon-



don and students are encouraged to enter. Randall said: "I really encourage students to participate as it an amazing opportunity."

[www.iom3.org](http://www.iom3.org)

## Visitors from NASA's Jet Propulsion Lab



*Dr Charles Elachi, Professor Mike Inggs and Dr Jakob Van Zyl.*

On Thursday 6 October, Professor Mike Inggs from Electrical Engineering had the privilege of hosting Dr Charles Elachi, Director, and Dr Jakob Van Zyl, Associate Director of Project Formulation and Strategy from NASA's Jet Propulsion Lab (JPL), which is situated at the Califor-

nia Institute of Technology.

(CALTECH) Professor Inggs said: "We were very grateful to have had the opportunity to listen to, and question, some of the leading scientists on highly topical research."

Elachi and Van Zyl took time out from attending the 62<sup>nd</sup> International Astronautical Congress to come and talk to staff and students on the work they are doing at JPL. It was the first time Elachi had visited South Africa and he said: "I am delighted to be at UCT and am very impressed by all that I have seen." He was appointed as director in 2001 and has had ten years of making an impact. Van Zyl originally comes from Namibia and studied electronic engineering at the University of Stellenbosch. He did his post-

graduate studies in America.

The JPL has launched and monitors 22 spacecraft and nine instruments across the solar system and beyond. Presently, JPL is very involved with research on Mars and will be launching the third Rover, Curiosity, on 25 November, which will be due to land on Mars on 6 August 2012.

After describing all the research and work that goes into launching a Rover to Mars, Elachi said: "JPL can be described as a giant toy store for engineers." There are up to 1000 engineers from all the different disciplines working together on a mission. JPL collaborates with other countries and there is the possibility of student exchanges.



**GETTING TO ZERO**

**WORLD AIDS DAY  
1 December 2011**

## Young Academy of Science is launched

Associate Professor Genevieve Langdon from the Department of Mechanical Engineering has been selected as a founding member of the South African Young Academy of Science (SAYAS).

Deputy Minister for Science and Technology Mr Derek Hanekom launched SAYAS on 26 September and inaugurated twenty leading young scientists as founder members. The group was selected from among the best scientific minds in South Africa and represents a diverse range of talent in terms of race, gender and scientific discipline. SAYAS was borne out of the need for young scientists to contribute towards solutions to the important national and global challenges facing society. It will represent the voice of young scientists on national and international issues and give them a platform to influence policy decisions. It is envisaged that SAYAS will become one of the apex advisory structures to government on science and policy matters, along with the Academy of Science of South Africa (ASSAf), the SA National Council on Innovation and the Council for Higher Education, amongst other national institutions.

SAYAS also aims to contribute to-



*A/Professor Genevieve Langdon (back—sixth from the left) seen at the launch of the South African Young Academy of Science.*

wards the development of scientific capacity in South Africa through mentoring and role-modelling of future scientists, and by fostering opportunities for interdisciplinary collaborations between young scientists. It will bridge the gap between the more senior and well-established ASSAf and the younger scientists who represent future leaders in their fields, but are not part of ASSAf. SAYAS will further promote science awareness among learners, young scientists and society

in general. At a global level, SAYAS will link up with the Global Young Academy of Sciences to provide opportunities for South African young scientists to interact internationally with other young scientists.

Professor Chris Redelinghuys, head of Mechanical Engineering said: "We know that she will contribute significantly to the activities of the Academy and are delighted to have our Department represented on such a prestigious body."

## President of the African Real Estate Society



There is a growing interest in African property, which is largely being driven by the economic growth exceeding 7% in some of the African countries, said Associate Professor Francois Vir-

uly, who has recently been appointed as President of the African Real Estate Society. Viruly was attending the 11<sup>th</sup> conference of the African Real Estate Society which was held in Windhoek, Namibia. The society has been in existence for some fifteen years and is linked to numerous sister societies across the world, which include the European Real Estate Society and the American Real Estate Society. Viruly said the major challenge ahead will be to develop real estate expertise that reflects the level of building activity in Africa. He said the main focus

of this year's presidency will lie in improving levels of data in many African property markets, and thereby improving transparency in these markets. The second objective is to initiate discussion between universities across the continent, to develop a body of knowledge in the real estate sector that is appropriate to handle issues relevant to the emerging countries in Africa. Viruly is an Associate Professor in the Department of Construction Economics and Management at UCT.

## News in Brief

Professor Vanessa Watson from the School of Architecture, Planning and Geomatics has been elected as a Fellow of the University of Cape Town. The Fellowships are awarded to permanent academic staff in recognition of original distinguished academic work such as to merit special recognition.

The BSc (Hons) Property Studies and the MSc Property Studies have been accredited unconditionally for the next four years by the South African Council for Property Valuers' Profession.



A/Professor Kobus Van Zyl from the Department of Civil Engineering has been appointed to the Board of the Urban Water Journal. He has also published a book titled **Introduction to Integrated Water Meter Management**.

Mr Neco Ventura from the Department of Electrical Engineering received the runner-up award for the THRIP Advanced Hi-Tech Category at the DTI Technology Awards 2011.

Mr Hartmu Jagau, a Master's student in Electrical Engineering, was the winner of the Student Poster Presentation Award at the 2011 IEEE Energy Conversion Congress & Exposition which was held in Phoenix, Arizona. His paper was on the **Design of a Sustainable Wind Generator System using redundant materials** and he was supervised by Dr Azeem Khan and Dr Paul Bar-endsse.



Professor Daya Reddy from CERECAM has had his SARChI chair in Computational Mechanics renewed after the first cycle review. The SARChI chairs are tenable for five years and are renewable for two further five-year periods, giving a total span of 15 years. Eligibility of renewal is entirely performance-linked.

The School of Architecture, Planning and Geomatics had two winners in the First International Competition for Research Papers in Architecture and Urban Design. Both papers received Honourable Mentions. The focus of the competition was on design education.

The winners were A/Professor Francis Carter for his paper entitled 'Pedagogic Structuring of Architectural Knowledge: Principles for Modelling and the Design Curriculum', and Emeritus Professor Dave Dewar and Piet Louw, for their paper entitled 'Redefining the Curricula for Spatial Design Education'.

In October, the South African Institute of Civil Engineering (SAICE) 2011 awards evening took place in Gauteng.

Congratulations to the SAICE UCT student chapter who received the 2011 SAICE Student Chapter of the Year award.



The Under 36 SAICE Engineer of the Year Award went to Mr Andrew McKune, a civil engineering graduate who is doing his Master's degree part-time with A/Professor Marianne Vanderschuren.





*Far left Desirée Kosciulek from South African Institute for International Affairs and far right Sebataolo Rahlao with the winning team*

Dr Sebataolo Rahlao from the Energy Research Centre was a facilitator for the South African Institute of International Affairs Environmental Sustainability project for Western Cape high schools. Learners participated in the Environmental Sustainability Project themed 'Road to COP-17'. The winning team out of Gauteng, KwaZulu-Natal and the Western Cape will be attending the youth climate negotiation at COP-17 where Dr Rahlao will be a mentor for the learners. The winning team comprised learners from Rhenish High, Rondebosch Boys' High, Bishops and Chris Hani High School.

Professor Alison Lewis and her team, Rizqah Mohamed (UCT), Ralf Beck, and J P Andreassen from NTNU –Trondheim in Norway, received one of the four poster awards at the 18th International Symposium on Industrial Crystallization. The symposium took place in September in Zurich, Switzerland, and over 200 posters were received. The paper's title was 'Growth and morphology of the vaterite polymorph of calcium carbonate at constant supersaturation'. Alison was part of the Scientific committee for the symposium and presented a paper.



On Friday 9 September, the Department of Mechanical Engineering celebrated the opening of the new nuclear engineering facility. The Department of Higher Education and Training, together with Eskom, funded the facility, which will provide space for staff and a new generation of postgraduate engineers in the field of nuclear power plant engineering. Professors Bob Tait and Trevor Gaunt were instrumental in securing the funding.

Professor Harald Winkler and Emeritus Professor Dave Dewar have been appointed as lead authors in Working Group 3 of the Fifth Review of the Inter-Governmental Panel on Climate Change.

The Postgraduate Student Council held a networking event for all postgraduate students on Friday 7 October at the Atlantic Imbizo Conference venue.

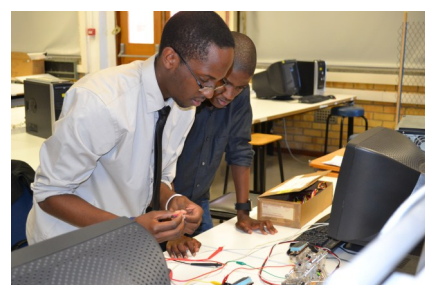


Ms Erica Le Roux successfully completed the Regional Middle Management development programme which was run throughout the year and organised by CHEC. The programme has been developed by and for the higher education institutions in the Western Cape and is designed to meet the needs of middle managers and to create effective networks of key managers in the Western Cape.



The Dean hosted another very successful "Dinner with the Dean" evening. The event is organised by the Values and Culture working group and twice a year members of the Faculty are invited to the dinner.

Electrical Engineering held their annual Open Day on Thursday 3 November where final-year students present and demonstrate their thesis projects. Parents, industry partners and alumni are invited to attend.



## Introduction to a mechanical engineering design process

The design and construction of siege engines in the Middle Ages were accompanied by advances in technology and the study of dynamics and projectile motion. Following in the footsteps of their technological forebears, students in the first-year course Introduction to Mechanical Engineering were tasked with designing and building a device that exploited mechanical advantage to launch an extra-large egg at a target at least 5m away.

The aim of the project was to introduce students to the mechanical engineering design process which is the spine of the Department's curriculum. Students worked in groups to generate concepts and then analysed, selected and built their best design con-

cept. This concept had to fulfil certain conditions: it could only use the potential energy available in a sealed 500ml coke bottle, it had to be made as cheaply as possible (preferably from recycled or scrap material), it had to be safe and, although the egg could break on impact, it could not break on launch.

While a number of designs were modelled on a slinged catapult called a *trebuchet*, groups used wheels, pulleys, and inclined planes in various configurations to launch their eggs. In a competition at the end of the project the winning design -which incorporated PVC pipe and a broken squash racquet -cost only R27 and hit the target from 10.5 m away.



Winning team: Peter Van de Ruit, Florian Reiner and Junaid Hussen (not in picture: Tinashe Mudarikwa).

## IEEE student branch—modelling and installation of a solar water geyser

Following on the success of the projects of the previous years, the UCT IEEE Student Branch's project for 2011 is the modelling and installation of a solar water geyser at Emasithandane Children's Home in Nyanga. The students have involved local high school learners from the area to expose them to the concept of renewable energy.

On 7 October, 34 learners and the students visited Solaire Technologies, where they spent the day manufacturing one kilowatt array of solar panels. The day allowed the learners to have hands-on experience of design and construction and to appreciate the manufacturing process of PV panels. They were also exposed to the concept of solar energy as a clean method of generating electrical power. In late November the learners, with the students, will be involved with the final instal-



UCT IEEE student branch members with the 34 high school learners at Solaire Technologies in Bellville.

lation of the solar panels and solar water geyser system at the home.

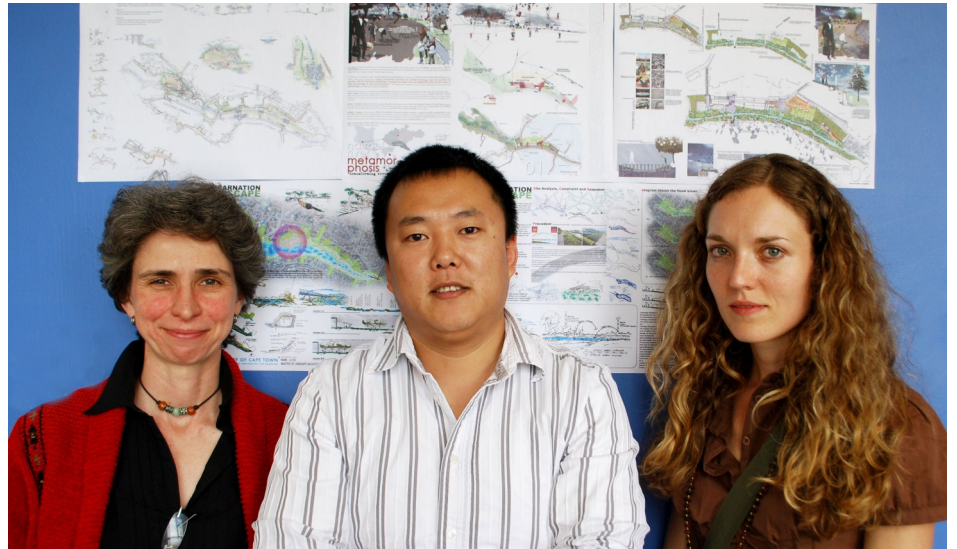
Michael Tladi, an Electro-Mechanical graduate, introduced the IEEE students to the home.



## UCT landscape architecture students win 3 out of 4 prizes in international design competition

Five Master of Landscape Architecture students entered an international student competition for the redesign of a portion of the Nairobi River running through the centre of Nairobi. The students proposed creative solutions to the challenges facing cities and the design and planning of rivers that flow through them. Three of the students were placed in the top four, including winning the first prize of \$1000. The competition was judged by five international landscape architects with the award ceremony being held at the International Federation of Landscape Architects Symposium held in the first week of October in Nairobi. The student projects were praised for the high quality of the landscape architectural concepts, the level of innovation, the depth of ecological aspects and the feasibility of the overall projects.

This is an enormous feat for landscape architecture, given that only six universities in Africa offer this pro-



*Left to right: Julia Mclachlan, Ke Lu and Ancunel Steyn.*

gramme. It positions UCT as a top landscape architecture institution in Africa, one that produces winning designers. Head of the School Professor Alta Steenkamp said: "The excellent performance of the Landscape Architecture students evidences and cements the programme's stature nationally and internationally. The

students in this programme are drawn from a wide range of disciplines and the work recognised in this competition illustrates the effectiveness of the programme in fostering design ability and critical thinking."

## The New Engineering Building

The new engineering building is starting to take form with lots of activity happening on site. We are aware that many staff members are having to put up with annoying noise and ask you to please bear with us during this phase.

The Planning Implementation Committee and the working groups are moving to the next phase in the design process. Together with the architects, they are looking at what the space inside is going to look like, the maintenance, security, access control and works of art for the building.

On 18 November, the Chemical Engineering design lab in the basement will be handed over to contractors for refurbishment. At the moment it houses 75 computers and when work is completed by 27 January 2012, it will house 122 computers for Chemical and Civil engineering students. At the same time work will begin on expanding the Chemical Engineering server room, which is situated on the 3rd level of the Chemical Engineering Building. We are still waiting for confirmation on what is going to hap-



pen with the Snape Building.

The Dean continues to fundraise for the new building and is waiting for confirmation of two additional donations from industry.

## Young Engineers Scholarship

Harshad Bhikha and Siergio Cieverts, two chemical engineering graduates, have been instrumental in setting up the Young Engineers Scholarship.

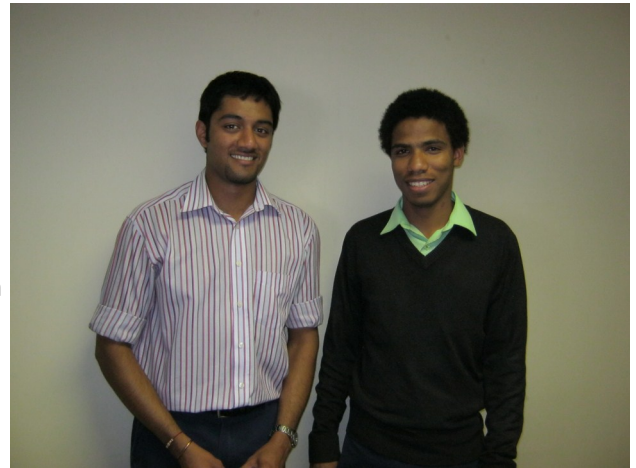
They both work for Sasol in Secunda and have held discussions with colleagues on how they would like to assist a student who, despite the odds, was able to excel at school, and who, without an entrance scholarship, may not be able to pursue their dream of studying engineering at UCT.

Once they had the idea, they approached many other friends and colleagues who share their vision to contribute to this scholarship in their personal capacity. In all, 17 graduates contributed, with eight from Chemical engineering and two from Electri-

cal engineering at UCT; the other seven are from universities across the country. They have collected R45 500 for the scholarship and the Student Financial Aid office will be assisting them with the selection of their student.

2012 will be the first year for the scholarship but they aim to make this scholarship available on an annual basis.

"We alumni can really change someone's life for the better and help UCT empower someone to achieve their dream, the way UCT helped us achieve ours," said Harshad and Si-



*Harshad Bhikha and Siergio Cieverts.*

gio. They hope that other alumni will be inspired to do the same.

## Welcome to New Staff

Mrs Ithre Najaar joined the African Centre for Cities in September as the senior research finance officer.

Mrs Susan Walker joined the Department of Mechanical Engineering in August as the admin assistant.

## Resignation

Mrs Shirifa Hellaby will be leaving BISRU on 30 November. She is joining UCT's Academic Union as an administrator. We wish her all the best in her new position.

## Congratulations

Mrs Betsie Koch is now the Departmental Manager for the Department of Construction Economics and Management. Mrs Beryl Stoffberg has taken over from Betsie in dealing with the undergraduate admissions.



Congratulations to Dr Ellen Hurst and Ilan Harosh, who were married on 22 July in Jaffa, Israel.

## Obituary

It is with great sadness that we inform you of the death of Jason Fourie, a third-year mechanical engineering student, who died in his sleep on Monday 19 September.



## Visit to the Holocaust Centre

Over the past two years the Values and Culture Working Group has invited EBE staff to attend a one-day workshop held at the Holocaust Centre. The workshop encourages people, through exposure to the Holocaust, to confront their own attitudes, beliefs and behaviours regarding prejudice and discrimination.

On Wednesday 30 November, the Values and Culture Working Group is once again organising a visit to the Holocaust Centre. Interested staff members should contact Sanet.Minnaar@uct.ac.za to book a place.