

# Monday Monthly



Newspaper of the University of Cape Town



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## Major boost for mobile video streaming



**Information superhighway:** Uninterrupted video streaming on mobile devices is now possible in developing countries like South Africa after a patent was developed by UCT researchers.

ABIGAIL CALATA

**T**he dearth of high speed broadband has opened the door for the mobile revolution that is sweeping through Africa. By far more people use their cellphones than computers for connectivity, but unbroken streaming of video in low bandwidth areas has remained a problem. Up until now, that is.

A group of UCT researchers - working in a consortium with developers from the CSIR (Council for Scientific and Industrial Research) and marketing experts from East Coast Access - have come up with an innovative solution that is likely to change the face of mobile usage for watching video across the continent.

The platform - known as Adaptive Real-Time Internet Streaming Technology (ARTIST) - makes constant video streaming possible with

the use of algorithms to adjust quality to available bandwidth. "Our aim was to find the balance between complete blockage due to congestion and acceptable picture/video quality in order to lessen the disruption to the viewing experience of the user," explains Emeritus Professor Gerhard De Jager.

He, along with Associate Professor Mqhele Dlodlo, headed up the team of researchers in UCT's Department of Electrical Engineering which developed the intellectual property (IP) for Artist. Dlodlo is involved in the university's Communications Research Group while De Jager is part of the Image Processing Group.

This breakthrough is likely to have a major impact across the globe, but most notably in Africa itself where accessible bandwidth is still an issue. The world's largest video platform, YouTube, streams six billion hours of video each month, but a large part of the developing world is missing out. The International Telecommunication Union (ITU) estimates that fixed (read: high speed) broadband penetration is less than 1% in sub-Saharan Africa,

compared to about 27.2% in developed nations.

For mobile subscriptions, however, Africa isn't nearly as far behind the rest of the world as it is with high-speed broadband. The ITU reports that per 100 inhabitants, Africa has around 63.5 mobile subscriptions, while Asian regions are at 88.7, Europe is at 126.5 and the Americas are at 109.4 mobile subscriptions per 100 inhabitants.

"Potential applications for this technology are diverse - from entertainment (sports events, community TV) to education (schooling, adult education and healthcare worker training)," says Dlodlo.

Earlier this year the ARTIST project won a NSTF-BHP Billiton Award in the category 'An Individual or Team who delivered an Outstanding Contribution to SETI through Research Leading to Innovation'. In reaction to this accolade Dlodlo thanked the postgraduate students without whom, he says, this project would not have been so successful.

UCT's involvement started in May 2008 and stretched over three years. The project was piloted

on the Johannesburg-based commercial radio station YFM in September 2011. "We chose a radio station because it only uses voice broadcasts and therefore operates on a low bandwidth channel. We tested our video compression techniques by adding a TV channel to the offering which proved to be very successful," clarified Dlodlo.

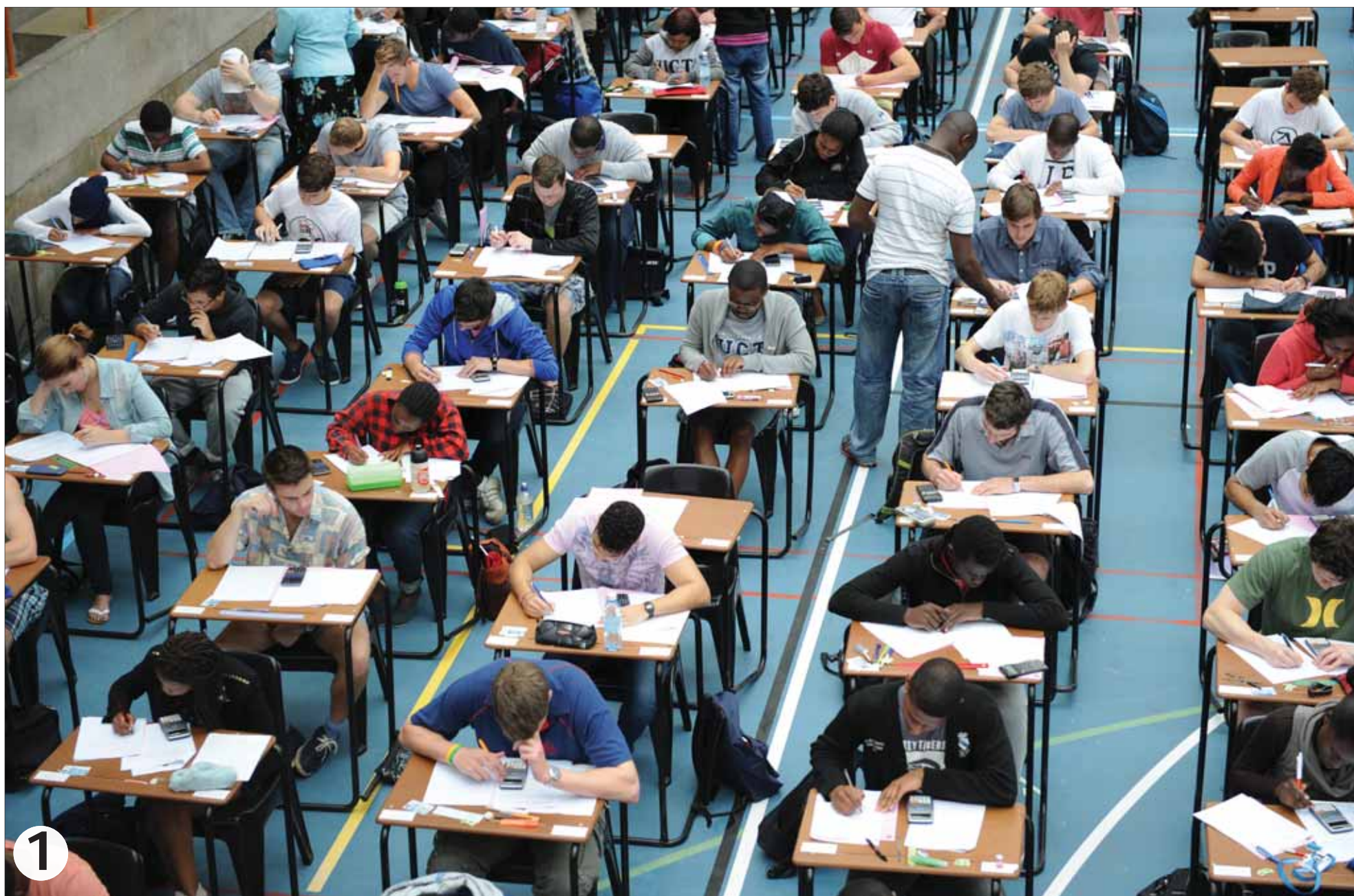
The company tasked with commercialising ARTIST is Tulentulu (the Zulu word for stream). Its CEO Pierre van der Hoven believes the benefit of this technology is twofold, "We can go into rural (low bandwidth) areas and by managing the signal we can control the cost to end-users"

The Tulentulu app is available on Google Play Store to anyone with an Android device running version 4.0 or later. Van der Hoven is currently in the process of selling the platform to content owners and television channels among others.

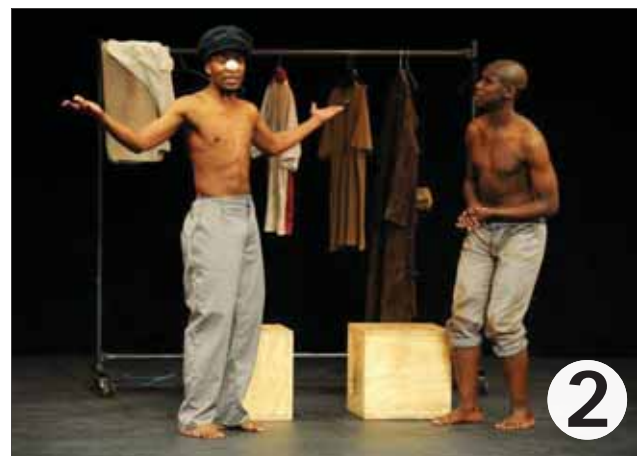
"We're open to doing business with anyone who needs to communicate visually. There's no limit to the number of channels that can run on the platform. If you have viable visual content, we can accommodate you," he added. ■

sleep eat work

**Little Scotia**  
GUEST HOUSE  
[www.scotia.co.za](http://www.scotia.co.za) / [info@scotia.co.za](mailto:info@scotia.co.za)  
tel: 021 686 8245 / fax: 021 685 1887  
5 Rustenburg Ave, Rondebosch



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# NEWS IN PICTURES

**1 Brain drain:**  
Students in the Sport's Centre write furiously as they battle the clock during end-of-year exams.

They were among thousands of UCT students to tackle hundreds of examination papers over the past few weeks. Most students finished their exams by mid-November and in December over 5 000 final year undergraduates and postgraduates are expected to be capped at 13 graduation ceremonies that will take place between 11 and 17 December.

Honorary degrees will also be bestowed on entrepreneur and philanthropist Dr Alan Grey, as well as eminent academics Professors Derek Yellon and Daniel Kunene.

**2 Performing artists:**  
Drama students Luc-Given Mkhondo (left) and Yanga Jikela appear in a scene from the play, *Woza Albert*.

Their performance formed part of the Final Year Auditions at the Little Theatre on UCT's Hiddingh campus. This event follows on from the students' final exam, where they perform four pieces that take the form of auditions. These auditions must demonstrate the students' versatility as well as their vocal and physical ability.

Theatrical and film agents are among the audience members, and according to Assoc Prof Chris Weare, the University's Department of Drama has a strong tradition of placing actors in the work place.

"Of our 19 fourth year students 11 are on agency books," he added.

**3 The colour of money:**  
Runners create a human sea of colour on the Sea Point promenade.

Approximately 12 500 Capetonians came out recently to support Cape Town's first Color Run and its beneficiary, SHAWCO, who will receive some of the proceeds raised. The first of these themed races took place in Phoenix, Arizona last year and the event has since grown into a worldwide phenomenon. This year colourful fun runs will be hosted in 30 countries and are expected to attract one million participants.

SHAWCO used the occasion to launch its Change a Life fundraising campaign. For more information visit [www.shawco.org/changealife](http://www.shawco.org/changealife)

**4 Festive nightcap:**  
Back at the Baxter for the silly season is the irrepressible Marc Lottering.

He takes the title role of *Scrooge* in Lara Foot's adaptation of Charles Dickens's classic *A Christmas Carol*.

Foot has assembled a formidable cast and creative team to bring Dickens' classic to life with a mix of music, comedy and drama. She has also taken the bold move of setting it in District Six, but during the early 1900s - long before the forced removals with which the area is now associated. Luminaries of stage and screen, Shaleen Surtie-Richards, Andrew Buckland and Christo Davids, play the ghosts of Christmas past, and a 50-strong cross-cultural children's choir also helps the production stand out as an innovative piece of theatre.

# Price weighs in on ethics debate

YUSUF OMAR

**C**an ethical behaviour be taught? Yes, says, Dr Max Price, UCT's Vice-Chancellor, but this is not necessarily the responsibility of universities. Price was sharing insights and evidence at the recent EthicsXchange which was organised by asset management firm Futuregrowth and business academy ASISA.

The event is a self-described platform for opinion-makers to shake up thinking about ethical questions.

"If you know something, you can teach it," began Price, quoting the Greek philosopher Socrates. "If you know what is good and bad behaviour, you can demonstrate it, you can teach it."

But the answer was rather more complex than a "simple yes", argued Price. "Of course, the answer is yes if you think about ethics as these very simple guidelines or principles."

This, said Price, could be taught by parents, read in books and on the internet, and was not the sole responsibility of the university to teach.

"[Ethical issues] are context-specific, they are culture-specific and there are contradictory outcomes based on different codes and principles, so what we are really inclined to teach is moral reasoning. I would argue that this is an area where universities can play a role, because this is about not reading a code, but this is about learning new skills, about arguing, debating, positing something, rebutting it."

"I would argue that every graduate of a university should be exposed to a course in moral ethics or moral reasoning so that when they graduate, they are better equipped for the world of work."

"But the real question is: can we teach ethical behaviour? Can we expect the knowledge of what is appropriate behaviour to translate into ethical action?"

"The research results are conflicting. For example, there is research into medical doctors which shows that their confidence in dealing with ethical dilemmas and their ability to make appropriate decisions is indeed influenced by having been through ethical education. But in the field of business ethics, unfortunately, far less evidence. Levin concluded in the 1990s that ethics courses are 'useless and unable to help classes full of MBAs see that there is more to life than money, power and self-interest'."

Price referred to a number of other studies to conclude that "the empirical research, unfortunately, does not support the view that you can generally teach people to behave ethically".

"So what can universities do and what should we do?"

"Universities have an unusual opportunity because we provide a sort of total-institution environment for our students almost 24/7 for about four years, and that means that students live in the university, and if we can role-model ethical behaviour in everything they see around them in the residences, in the lecture theatres, in exams, in the research that is done, we believe and hope that we can influence the values that they abide by and how they behave."

"Really, the university's most important role, I think, is to elevate an individual's sense that ideas matter, that thinking matters and that the process of reflection is important for the outcome of their moral decisions."

In addition to Price, the event called on leaders from various sectors of society to explore the ways we view ethics in everyday life, including former UCT Council member Rhoda Kadalie, leading UCT scientist Professor Tim Noakes, clinical and forensic psychologist Dr Giada Del Fabbro, and former Bafana Bafana captain Lucas Radebe.

Noakes used examples from the medical science arena to argue that when "groupthink" – the Orwellian tendency to ostracise ideas that go against the popular grain – caused harm to patients that, say, received poor advice from their doctors, it could be said to be unethical.

The discussion was chaired by Bongani Bingwa, a local television presenter and journalist. ■



**Public platform:** Vice-Chancellor Max Price speaks about ethical behaviour with television presenter and journalist, Bongani Bingwa.

## BRIEFS

### » UCT researchers shine at MRC awards

UCT scientists featured prominently at the Medical Research Council's (MRC) recent merit award ceremony, with "the highest honour in medical research in the country" being conferred on four high-profile academics.

Emeritus Professor Eric Bateman, director of the Lung Institute, received a lifetime achievement award in the form of the MRC's platinum medal. Professor Keertan Dheda, head of the Division of Pulmonology, was one of the recipients of a gold medal. Professor Kelly Chibale, drug discovery and development centre (H3-D) director, and Associate Professor Graeme Meintjes of the Department of Medicine were acknowledged with MRC Young Scientist awards (silver medals).

### » Accolades for CET staffers

The work of three Centre for Educational Technology (CET) staffers has been acknowledged internationally.

CET senior lecturer, Tony Carr became one of the first Africans to win the Dewey Winburne Community Service Award, which acknowledged his role in establishing e/merge Africa – a network of African educational technologists interested in applying educational technology to their work.

Carr's CET colleagues, Dr Cheryl Brown and Associate Professor Cheryl Hodgkinson-Williams, won the Hybrid course category for their Advanced Research Design course offered to students undertaking the Masters in Education (ICTs in Education) in Africa.

### » UCT plays role in major skills development project

Together with UCT and the Otto-von-Guericke University in Magdeburg, Germany, AP University Alliances Africa has launched a three-year project to develop an Enterprise Systems (ES) education platform, curriculum and community for sub-Saharan Africa, to further contribute to its skills development initiatives in Africa.

Worth in excess of €3-million, the Enterprise Systems Education for Africa (ESEFA) project aims to develop curricula and establish an African university community to deliver enterprise systems and enterprise resource planning.

UCT will be conducting field studies over the duration of the project to evaluate and improve the course design and teaching material.

### » Farewell to the SRC

"An exceptional group of student leaders" was how acting Vice-Chancellor Professor Thandabantu Nhlapo described the outgoing Students' Representative Council (SRC).

Nhlapo was speaking at the recent farewell to the 2012/13 SRC at a function hosted with his wife, Mathokoza, at their Linkoping residence. Guests included Deputy Vice-Chancellor Professor Crain Soudien, and members of the Department of Student Affairs.

Nhlapo listed several SRC flashpoints such as the candlelight vigil to highlight violence and gender-based crime; their contribution to UCT's protest march against gender violence; a panel discussion on sexuality; and the 'kNow it's NOT OKAY' awareness campaign, which also created awareness about sexual violence.

## Calling for leads...

With a special graduation edition of *Monday Monthly* planned for early December, the UCT Newsroom welcomes any leads about stories with a graduation focus. These may showcase cutting-edge research, or the results of high achievers. This edition will also focus on students who have defied enormous odds or difficult circumstances to gain their qualification.

Please email [newsdesk@uct.ac.za](mailto:newsdesk@uct.ac.za) with your story idea, and the names and contact details of potential interviewees.

# An app to end the transport woes

YUSUF OMAR

**N**o commuter is a stranger to the havoc wreaked by last-minute changes on public transport schedules – which is why the free FindMyWay app (launched for smartphones last month) might find itself high up on the popularity charts.

Developed by UCT information systems alumni Devin de Vries and Chris Kind,

FindMyWay condenses information about every mode of public transport in six major South African cities into one mahala mobile application.

If you need to plan a journey on a Golden Arrow bus from Rondebosch to Mitchell's Plain tomorrow afternoon, for instance, a quick input of the trip's details into the app will generate possible routes, departure times, and even the hole it will make in your pocket. De Vries hopes it will ease the burden on commuters.

Jammie Shuttle, Metrorail, Golden Arrow, the City Sightseeing bus, the Robben Island Ferry, they're all there; and if you go to Durban, Port Elizabeth, East London or Pretoria, you can check transport in those cities, too.

"The current version is designed as single-modal, meaning I can check [routes] on Jammie Shuttle, or on Metrorail, or Golden Arrow. The next version that's coming out – which is still a little way away, because we obviously have to redesign the apps to work in such a manner – it will be an 'A to B' service, much like how Google says 'walk here', or, if you want to go to China, swim across the Yellow Sea."

The FindMyWay system also links to the screens that you see around UCT's campus, which are linked to a real-time system, but at present, often display pre-determined schedules, says de Vries.

"The app is free to download," de Vries emphasises. I don't see a reason for that to ever change. The goal of this is to make public transport information easily accessible to everyone. You shouldn't need to look in one place for one set of information and look in another place for another set of information.

"This was our dream from when we were students. This was the problem we wanted to solve. Regardless of whether we can or can't make money off this, we want this to happen."

He adds: "At the end of the day, if you improve public transport, you allow urban planning to evolve in a completely different fashion, because it must take cognisance of the fact that public transport will begin to burgeon with time."

During its development stage, the app received support from major role players in the public sector.

"Our work was also presented to [Western Cape Premier] Helen Zille who backed what we were doing and linked us to MEC for Transport Robin Carlisle, and he also helped us make connections with the various people. Since then, we've also been running the Whereismytransport system for UCT, which does a range of things, from tracking vehicles to monitoring driver behaviour, and allows the transport providers to organise schedules." ■



On the go: A large portion of Cape Town's population relies solely on public transport.

Picture by Michael Hammond

## The effect of ice-cap melt: data collection innovation

STAFF REPORTER

**D**eep-sea data collection instruments are playing a vital role in telling oceanographers how increased ice cap melt is affecting the nature and flow of water between the North and South Atlantic Oceans.

UCT's Dr Isabelle Ansorge (oceanography department and the Marine Research Institute) is part of an international scientific team involved in beefing up data collection in the South Atlantic.

Ansorge and a group of UCT oceanography students recently returned from an expedition aboard the new South African polar vessel, *SA Agulhas II*, to deploy additional observational monitoring instruments in the region.

These deployments will monitor the Meridional Overturning Circulation (MOC), a system of surface and deep ocean currents that extend across the globe. It's the main pathway for the large-scale circulation of heat, salt and carbon dioxide from the tropics polewards.

"One impact of continued global warming is the threat of increased melting of Greenland's ice cap, which may result in an influx of cold and fresh surface waters into the North Atlantic Ocean," said Ansorge.

Already, the North Atlantic ice melt is precipitating changes to the ocean, reflected in factors like temperature and salinity. And scientists

predict that the injection of fresh water into the sea as a result may soon be enough to change the composition and flow of the world's oceans on lengthy time scales, ranging from decades to centuries.

Climate models have predicted that increased levels of greenhouse gases may also be interfering with this process by slowing down the circulation in the North Atlantic – the northern limb of the MOC.

"Although individual efforts to measure the circulation south of Africa exist, none of these efforts have previously been co-ordinated; nor have these systems been designed for long-term monitoring," said Ansorge.

She is the principal investigator of South Atlantic Meridional Overturning Circulation SA (SAMOC-SA), an initiative she leads with Dr Mike Roberts of the Department of Environmental Affairs Oceans and Coasts, and Professor Sabrina Speich of the University of Brest in France.

"There's growing recognition of the intimate link between the North and South Atlantic basins and the critical need to study the full ocean water column on a more regular and long-term basis."

Until the September expedition, there was only one system in the North Atlantic that monitored the Meridional Overturning Circulation.

"Because the Meridional Overturning Circulation extends throughout the world's oceans, it is obvious that changes happening between

the South and North Atlantic sectors must be considered in tandem," Ansorge explained.

The latest deployment of a Current Pressure Inverted Echo-Sounder (CPIES) into the South Atlantic completes a network of eight bottom-moored instruments that record vertical acoustic travel time and near-bottom pressure and velocity.

From this data scientists can infer temperature, salinity and north-south velocity throughout the water column.

Another six moorings are planned for deployment along the eastern flank of the array in early December 2013.

"This line complements the western array, extending from the South American continental shelf, where another seven CPIES were deployed by United States, Brazilian and Argentine scientists in December 2012," Ansorge added.

These instruments will measure the southward transport by the Brazil Current, while the South African moorings will measure the northward flow and frequency of the Agulhas Rings.

"These new enhancements have not only brought the mooring array across the entire south Atlantic closer to completion, but have also provided high-quality observations of the ocean currents; and in particular, their northward transport of salt."

"In 2015, if all goes well, a repeat oceanographic survey is planned on board the *SA Agulhas II*, and annual or semi-annual surveys are planned off Argentina," said Ansorge. ■



Picture supplied

**Gathering data:** Dr Isabelle Ansorge, chief scientist Marcel van den Berg, and French technician Michel Hamon about to deploy a Current Pressure Inverted Echo-Sounder (CPIES) into the South Atlantic.

# Winds of change for higher education

HELEN SWINGLER

**T**wo trial paint samples on the walls and books in boxes signal change at the Centre for Higher Education on upper campus.

New dean Associate Professor Suellen Shay is settling in. It's welcome, at this juncture in higher education, to have an incumbent

who's been on the block at CHED some 24 years.

Continuity in the 150-strong, five-unit centre is important, says Shay. But it's also not just business as usual for a centre that provides strategic leadership in teaching and learning, and essential support to UCT's six academic faculties.

No sooner had the ink dried on her five-year contract (Shay succeeded Professor Nan Yeld, who's on a well-earned sabbatical), than the Council for Higher Education presented a proposal to extend the undergraduate three-year degree to four years.



Technology can be the tail wagging the dog.

The proposal addresses "unacceptably high" failure and dropout rates and presents a case for curriculum reform that has huge implications for tertiary education.

"It's an interesting moment for the country," says Shay. She looks keen, unfazed. "We must get into the debate and engage with the policy."

"Higher education has failed the majority of South African youth. With four million unemployed youth who are uneducated and unemployable, there's potential for huge political and economic instability. We must get into the debate and engage with the policy."

Universities have to think long and hard – and flexibly –

about what they provide and how they provide it.

"The policy is an opportunity to re-think our assumptions about the widening gap between school and university. It's also about ways to add 'breadth' to the curriculum by promoting things like multilingualism and global citizenship."

A cross-faculty unit, CHED has built respected expertise in the technological aspects of online and open access and innovative pedagogy.

"We have real expertise in this area, and the Vice-Chancellor is keen for UCT to take up the opportunities that, for example, MOOCs (Massive Open Online Courses) might provide."

Shay concedes that technology can be the tail wagging the dog. CHED's role is to ensure that the technology serves the teaching and learning, not the other way around.

"UCT's strength is in our location and our residential space. But we want to use technology optimally."

The recent UCT Teaching and Learning Conference at UCT tackled the topic of online education with some vigour.

But beyond technology is the developmental aspect: academic staff development, academic writing support, career development and graduate recruitment services. Here too, there's change, with Professor Ian Scott (Director of the Academic Development Programme) retiring and the establishment of the new Centre for Innovations in Learning and Teaching. The recruitment of directors for both of these units has begun.

On an increasingly international campus, the gentle twang in Shay's accent is not unusual; it's typical, some would say, of the 'mish kid'.

Raised in the Congo, Shay's parents were American missionaries in Central Africa.

At 18 she journeyed to the US, where she completed her MA at the University of Illinois at Champaign-Urbana. But she always wanted to return to Francophone Africa as a language teacher.

As it turned out she came to South Africa with her husband in 1988, "just for a year", but "got stuck".

Happily.

That Shay spent her childhood and early adolescence in Africa is an important part of her understanding of her 'citizenship' in the world – and essentially linked to her sense of social justice and what it means to be a human being.

Being adaptable is second nature to this mother of three daughters, two at UCT and one in grade 8.

As the parent of university-going children, Shay has an up-close view of what it means to be a student at a South African university, especially at such an eventful time in higher education. ■



Picture by Michael Hammond

New head of CHED: Assoc Prof Suellen Shay

## TB machine innovations could be rolled out nationally

ABIGAIL CALATA

**P**eople in TB hotspots across the country might benefit from the availability of a TB diagnostic machine at their local

clinic if recommendations from a study by UCT researchers are accepted by health minister Dr Aaron Motaaleli's department.

The study, for the first time, assessed the viability of the Gene Xpert machine outside a lab, i.e. in a clinic, where it would be operated by a minimally trained healthcare worker, usually a nurse. Most of these diagnostic machines operational in South Africa at the moment are found in central laboratories.

The study found that having the machine in the clinic doubled the same-day diagnostic rate, increased the number of patients starting same-day treatment by 50%, and effectively halved the drop-out rate (confirmed cases that don't return to initiate treatment), compared to



Picture by Michael Hammond

**TB fight back:** Dr Grant Theron (middle), lead study author, and Richard Meldau (far right), co-author, together with Professor Keertan Dheda, demonstrate the workings of the Gene Xpert TB machine.

conventional TB diagnostics.

The Gene Xpert machine, endorsed by the World Health Organisation,

detects multi-drug-resistant TB, which according to study leader Professor Keertan Dheda, is particularly useful,

"Drug-resistant TB comprises less than 3% of the total burden of the disease, yet the treatment of these patients consumes approximately 45% of the total national budget for TB treatment – over R1.2 billion."

TB is the most common cause of death in South Africa. It reduces the GDP by approximately 5% per annum.

The study, which was conducted in five primary healthcare facilities in four African countries, including South Africa, was recently published in the prestigious medical journal *The Lancet*.

"While Xpert may not be the ideal point-of-care TB test in poorly resourced settings, in countries like South Africa where the clinic infrastructure is relatively good, and rates of drug-resistant TB and drop-out are high, placement of Xpert in selected TB hotspots, including clinics and prisons, might be appropriate and enable earlier diagnosis of drug-resistant TB, thus probably reducing community-based transmission," adds Dheda.

Globally, TB diagnosis still relies predominantly on the century-old

combination of sputum microscopy (looking for the TB bacilli under a microscope) and chest x-rays – a system which misses 40 to 60% of cases. Furthermore, the treatment drop-out rate in some South African clinics is as high as 40%, which means that two out of five TB patients never return for treatment.

"Earlier diagnosis, however, did not translate to reduced severity of the illness down the line," reveals Dheda. Moreover, the total number of patients treated remained the same six months after diagnosis.

Since its introduction in 2011, no fewer than 279 Gene Xpert machines have been deployed in South Africa.

Popo Maja, head of communication at the Department of Health, says his department will study the findings and consult widely to determine whether it is necessary to place machines in clinics in key areas. "We are committed to easy and faster diagnoses, and therefore in principle we support any efforts to facilitate the faster diagnosis of TB." ■

# Electronic cigarettes: Smoke and mirrors?

HELEN SWINGLER

**E**lectronic cigarettes may be new on the market, and expensive (unless you're buying a Chinese knock-off), but they've plugged a gap for many smokers wanting to quit, particularly in the wake of government's tougher anti-smoking measures.

E-cigarettes are battery-powered devices that resemble cigarettes and vaporise nicotine for inhalation. They're outstripping nicotine replacement therapies such as patches and gum, and may be more effective than traditional smoking cessation medications, say some clinicians.

But do the potential benefits of e-cigarettes outweigh the risks?

UCT's Dr Brian Allwood believes they do – when used to stop smoking, and not as an alternative to cigarettes.

In an editorial in the November edition of the *South African Medical Journal*, Allwood says that evidence and education are of little help to nicotine addicts.

"The cigarette's combination of chemical and psychological addiction overwhelms common sense; in smoking cessation trials, where only highly motivated patients are enrolled, sustained quit rates rarely exceed 25%. We need more strings to our bow, if we hope to win this battle."

The main concern is safety. Components of the refill fluid are nicotine, the vaporising propellant (propylene glycol or vegetable glycerine), and chemicals used as flavourants.

"They do not produce smoke but a vapour that is inhaled; and the common adverse side effects of e-cigarettes (cough, mouth irritation and headache) are mild, and appear to decrease over time."

Allwood reports that the nicotine component of e-cigarettes is thought to be safe, as it has not been shown to cause cancer, cardiovascular disease or lung damage – neither has it been shown to be cytotoxic to stem cells.

There's also less danger of passive smoking (which Allwood says could potentially reduce the 600 000 annual deaths associated with passive smoking), and of the weight gain associated with cessation.

"But the real benefit for those who convert is being spared the exposure to the over 8 000 chemicals (including carcinogens) found in cigarette smoke."

Importantly, the device addresses the ritual or psychological aspects of smoking.

"It remains the only currently available therapy that addresses both the physical and psychological components of tobacco addiction simultaneously – assisting smokers to both quit and cut down," Allwood adds.

First prize is never to start; and here, Allwood is emphatic about campaigns to prevent teens from lighting up. A report in the August issue of *The Lancet* says that although ex-smokers have lower risks than smokers, they have higher risks than never-smokers, particularly of lung cancer.

Others are less bullish about e-cigarettes. A report in the September edition of *The Lancet* by researchers from the Universities of Auckland and Otago in New Zealand, and Queen Mary University of London, says the role of e-cigarettes in tobacco control is still controversial, despite their "modest" effectiveness in helping smokers to quit.

"Uncertainty exists about the place of e-cigarettes in tobacco control, and more research is urgently needed to clearly establish their overall benefits and harms at both individual and population levels," said UCT's Dr Richard van Zyl-Smit.

That tobacco companies are involved in the manufacture and promotion of e-cigarettes seems particularly cynical, he says. ■



Picture by Michael Hammond

## Smoked: does stand a chance?

HELEN SWINGLER

**M**ymoena Abrahams\* is a solitary figure in the front row of chairs at Groote Schuur Hospital's Smoking Cessation Clinic. Swathed in a black headscarf, she sits upright, gripping her handbag tightly.

Abrahams started smoking at 17; and 40 years later, she says she's quitting.

"It's bad for my health," says the 57-year old from the Cape Flats, where tobacco use among the coloured population is the highest in the country – and in the world.

She smiles wryly.

"My dogter skel my."

She's always known cigarettes are bad for her. Still, she was shocked by the lung capacity test results revealed by the Respiratory Clinic at GSH, home to the Smoking Cessation Clinic.

This is Abrahams' third visit to the modest facility, run every Thursday since it opened in November last year. The clinician she sees has prescribed medication to reduce nicotine cravings. The state doesn't pay (and neither will most medical aids), but the clinical and emotional support for people trying to quit is worth the visit, says Abrahams.

The clinic is thought to be the only one in the province since the facility at Tygerberg Hospital closed, says Dr Richard van Zyl-Smit, head of the Lung Clinical Research Unit at the UCT Lung Institute, and consultant pulmonologist in the Division of Pulmonology and Department of Medicine.

The number of smokers who come here is still low (they will see only those who are serious about giving up), but Van Zyl-Smit believes that support is essential to reducing what provincial health minister Theuns Botha calls "avoidable health burdens on the state".

"We don't employ 'bad boy' methods," says Van Zyl-Smit. "We model our approach on five 'As' – a similar approach to programmes for alcoholism."

The team draws up a support programme for each smoker, and prescribes medication if needed.

Writing in the latest edition of *Medical Journal*, Dr Brian Allwood of Pulmonology and the Lung Unit says that smoking cessation before age 35 can add nine years to a person's life.

The broader picture, Allwood says, is that smoking kills over six million people a year, as from HIV and TB together. In South Africa, along with the world's top five causes of death, disease, stroke, chronic obstructive pulmonary disease, respiratory tract infection and tuberculosis.

"It's estimated that without smoking, 10% of cancer deaths would be avoided."

Tobacco use highest in coloured communities.

Cases like Abrahams are all too common in the province. The group classified as "coloured" has the highest smoking prevalence in the country, according to the Medical Research Council's Dr van Zyl-Smit, along with collaborators at the South African Lung Laboratory Service and the University of Wollongong, South Wales.

Smoking-related mortality is higher than for white or black South Africans, and for diseases exacerbated by smoking. The lung cancer fraction is also much greater for coloured people, a finding; but it points to a pervasive health problem, diminishing, and is adding a burden to the health care system.

"The substantial hazards of smoking for South Africans suggest growing concern in Africa where young adults smoke, and need to report. [confirm this is what it is]."

In addition, information available to the public is clearer now, thanks to reforms in health care certification reporting. In 1998, South Africa was the first country to ask about smoking status on notification.

There are several issues with the current approach, says Zyl-Smit: lack of facilities with which to counsel patients, and lack of support for state patients.

"There's nothing in our health care system to help people to overcome nicotine withdrawal."

(\* Not her real name.) ■



Picture by Michael Hammond



# Is the province a chance?

...n of the South African ...ood, also of UCT's Division ... Institute, says it's estimated ...ge 45 adds an average of ...od says, is that cigarettes ...ar, almost twice as many ... Smoking is also associated ...s of death: ischaemic heart ...ctive pulmonary disease, lower ...ung cancer. ...t tobacco, one-third of all ...d." ...oures ...l too common in the ...as coloured has the highest ...ntry, reports a paper by the ...Debbie Bradshaw, penned ... African National Health ...iversities of Sydney and New

...among coloureds is 50% ...smokers and ex-smokers. And ...oking, the smoking-attributed ...or coloureds. It's not a new ...sive problem that isn't ...rden to state health care. ...ready seen among coloured ...g hazards in all populations in ...ke now," the paper's authors ...ays? Sounds odd] ...available to researchers is ...in South Africa's death ...y, South Africa became the ...king history in routine death ...okers grapple with, says Van ...trained staff and the time ...support and medication for ...althcare system that helps ...ithdrawal when trying to



Picture by Michael Hammond

**Team leader:** Dr Richard van-zyl Smit hold a 'Smokelyser'.

### National smoking cessation guidelines suggested

Mandated by the South African Thoracic Society, Dr Richard van Zyl-Smit led a team of clinicians from around South Africa in compiling a smoking cessation practice guideline relevant to the needs of South African patients and doctors. This has been published in the *South African Medical Journal*.

Key steps in smoking cessation include:

- identifying smokers, and alerting them to the harms of smoking and benefits of quitting;
- assessing readiness to initiate an attempt to quit;
- assessing physical and psychological dependence on nicotine and smoking;
- determining the best combination of counselling/support and pharmacological therapy;
- setting a quit date and providing suitable resources and support;

"Stopping smoking is not easy, as the habit and associations with smoking – stress, alcohol, etc., as well as the physical addiction to nicotine – are significant obstacles," says Van Zyl-Smit. "The benefits of quitting are enormous; and thus, multiple options should be considered to assist the individual to break a habit that they have a 50% chance of dying from."

## Smoking 'app' for clinicians

HELEN SWINGLER

UCT pulmonologist Dr Richard van Zyl-Smit is developing a web-based computer app for clinicians, providing standardised assessments of patients who want to stop smoking.

The app is linked to a questionnaire that gathers a range of patient information, such as addiction level, withdrawal, and allied conditions like depression, to help doctors track interventions and assess their patients in real time.

"You log on, enter a patient's details, and it will guide you through the assessment," says VanZyl-Smit.

He hopes to make the app available to clinics, as well as to companies with large workforces who may be running their own wellness programmes.

"This allows organisations a degree of uniformity in the approach to the individual patient, ensuring that the correct medical history is taken before potentially dangerous drugs are described, and provide a database to evaluate treatment success – and possibly, future research," he says.

"It's also fun for patients to be able to track their progress."

## Hubbly bubbly: masquerading the dangers

HELEN SWINGLER

It's a centuries-old Eastern practice that's gained worldwide acceptance in recent years. But the water filter and fruity flavours of the hookah pipe, or hubbly bubbly, mask a toxic cocktail of compounds.

These are nicotine, carbon monoxide, formaldehyde, polyaromatic hydrocarbons, arsenic, and lead.

Insufficient knowledge about the dangers of the hookah has spotlighted an urgent need for school and university health-promotion campaigns – and better regulation of hookah pipe smoking. This is the recommendation of a group of UCT fourth-year MBChB students, working with the university's School of Public Health and Family Medicine, who conducted a study among the faculty's health sciences students.

The project was identified by the Cancer Association of South Africa, and the findings were published in the November edition of the *South African Medical Journal*.

"There is a perception that the use of the hookah is rising, and it's seen in the community to have minimal health risk," said senior lecturer Dr Virginia Zweigenthal. "As health sciences students are future health practitioners, their perceptions and practices are important; hence, they were selected for this study."

Of the 228 participants, 66% had smoked a hookah pipe before, with 18% still smoking. Most began smoking in high school, with 25% initiating at university. Of the current smokers, 65% smoked socially occasionally, commonly at friends' houses,

for 30 to 60-minute sessions. A further 11% smoked cigarettes concurrently, and a further 30% had added other substances, mainly cannabis, to pipes.

Most current hookah pipe smokers (84%) had no intention of quitting. Only 30% had prior health information about hookah pipe smoking. Most knew it was harmful (91%), but did not know why. Some 80% of the participants said the practice is socially acceptable; and 84% would recommend it.

The study also found that the average hookah-smoking session is longer than for cigarettes, and involves exposure to larger volumes of smoke.

"Studies investigating the acute and long-term effects of hookah pipe smoking show that there is a risk factor for lung cancer, periodontal disease, cardiovascular disease, and adverse pregnancy outcomes," the paper said.

Sharing the pipe also exposes users to diseases like herpes simplex, hepatitis, and TB.

"Thus, while hookah pipes are commonly perceived to be safer than cigarettes, they may be even more harmful."

The group also found that peer influence is a significant factor in initiating users.

The South African Tobacco Control policy may prohibit smoking in public places, but hookah pipes have eluded its reach. A study done at another local university showed a large proportion of students smoked on campus. However, it's thought that UCT's strict tobacco-usage policies have deterred the use of hookahs here.

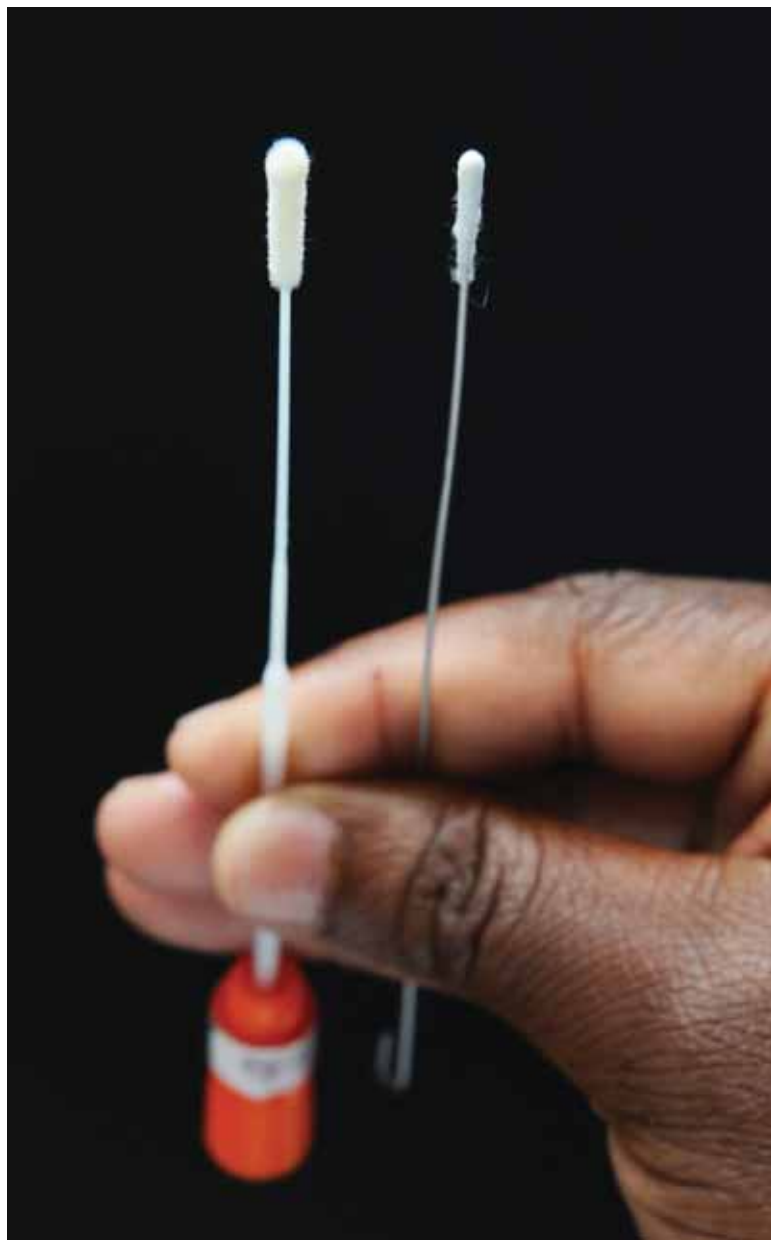
Important to educators is research showing that knowledge about the hazards of hookah pipe smoking tends to be limited in adolescents, who are taking up hookah pipe smoking in ever-growing numbers. ■



Picture by Michael Hammond

**Burn baby, burn:** The hubbly bubbly study was conducted by fourth-year MBChB students (from left, front) Tshepo Masiea, Mandy Botsis (moderator), Tahira Banoobhai, and Nicolina van der Merwe. (Back) Abram Gwala (moderator), Zizipho Gqweta, and Manshil Misra.

# WHO to follow UCT's lead



**Spot the difference:** The flocked swab (left) is more effective than the Dacron swab (right) in detecting the pneumococcal bacterium, which accounts for most bacterial pneumonia cases in children.

ABIGAIL CALATA

**Y**oung children participating in studies on childhood bacterial pneumonia in future can expect to suffer less discomfort and indignity. This after the World Health Organisation (WHO) decided to change its recommendation after a study was completed at UCT.

The study looked at the type of swabs that are used in the detection of one of the main causes of childhood bacterial pneumonia. Instead of endorsing the use of swabs with either a calcium alginate or Dacron polyester tip, the WHO working group will advise researchers to use flocked swabs, following a UCT study that found these swabs were not only more comfortable for the children, but also far more effective for the recovery and detection of *Streptococcus pneumoniae* (pneumococcus), which is responsible for more than 40% of all bacterial pneumonia cases worldwide.

Given the stats, this change in protocol will benefit a high number of children in Sub-Saharan Africa: Globally, pneumonia accounts for 18% of childhood mortality in children under the age of five years, resulting in the death of 1.6 million children per annum. No fewer than 70% of these deaths occur in sub-Saharan Africa and India.

Felix Dube, a doctoral student from the Division of Medical Microbiology and one of the researchers in the study, says the flocked swabs are so effective in specimen collection because of tiny



Picture by Raymond Botha

**Pneumonia sleuth:** Researcher Felix Dube explains the benefits of the 'flocked' swab.

bristles that are electrostatically attached to the end of a very flexible plastic shaft. The flexible shaft means the swab head "finds its way to the back of the nose, causing minimal irritation on the way," clarified Dube.

The Dacron and calcium alginate swabs are constructed by winding the respective fibres around an aluminium shaft, which is likely to cause more discomfort for the children.

These preliminary findings fall within a broader longitudinal birth cohort study, the Drakenstein Child Lung Health Study, that is funded by the Bill and Melinda Gates foundation. This study investigates the etiology and risk factors for the development of childhood pneumonia in the Drakenstein region in the Western Cape. The timing of acquisition, intensity of colonisation and interaction of the pneumococcus with other respiratory pathogens are likely to be key determinants for progression to pneumonia. "We're interested in anything we can find that will lead to an

explanation of why some children are carriers, but don't get sick, while others develop pneumonia," says Dube.

Finding optimal strategies for specimen collection is crucial to assess the impact of pneumonia vaccines, and in this case, to establish how the organism goes from being harmless to causing disease.

According to the study, "the ideal swab would be highly absorbent, maintain the viability of microorganisms, release most of the specimen material into culture broth or transport medium, and not inhibit culture or nucleic acid amplification". The latter is the process by which the type of organism (virus, bacteria, etc) is detected using its DNA.

Flocked swabs tick all the above-mentioned boxes. Furthermore virology studies use flocked swabs for detecting viruses. This caused Dube and his fellow researchers to conclude that "the use of a single swab type for both viral and bacterial studies would simplify specimen collection protocols". ■

## Home-grown technology helps leprosy sufferers in India

HELEN SWINGLER

Indigenous technology developed partly at UCT is helping leprosy patients in India, where a new 'tactile' or smart glove is being tested.

The technology tracks pressure points on the palms and fingers and helps prevent injuries to hands and digits as a result of nerve damage and sensory loss. It is being tested at the Leprosy Mission Hospital in New Delhi, India.

Some 95% of people are naturally immune to leprosy, caused by *mycobacterium leprae* and resulting in progressive damage to skin, nerves, limbs and eyes. Leprosy does not cause body parts to fall off, although they can become numb or diseased as a result of secondary infections because the primary disease compromises the body's immune system.

Though curable, thanks to multi-drug interventions, patients often suffer a 'secondary tier' of injury and disability because they can't feel the heat or pressure that often destroys tissue and results in amputation.

But those who develop the disease are prone to nerve damage.

With 232 000 (globally in 2012) new cases each year, India has the highest concentration (about 56% of the global burden) of leprosy, followed by Brazil (interestingly, Ireland recently reported two cases), and in India there are dedicated leprosy hospitals.

In South Africa, the figures are low, some 50 to 70 new cases annually, predominantly in the Eastern Cape and from neighbouring countries like

Swaziland and Mozambique. Dr Sudesh Sivasaru (30) of Biomedical Engineering in the Department of Human Biology believes in developing simple biomedical solutions to problems like these.

Sivasaru took an off-the-shelf fabric glove to model his own; a stretchable glove that uses a revolutionary fabric with in-built nano-sensors.

For example, a patient with hand nerve damage can't feel the heat from a metal mug of tea (metal is a preferred domestic material in India).

"We've created an artificial sense of touch," he said. "The fabric picks up haptic factors like roughness, temperature, pressure, and humidity."

The glove also maps the individual's hand usage to establish where the pressure variations are during simple domestic activities like cutting wood or cooking. These are recorded to show where ulcers are likely to develop.

Patients, who often live far from hospitals, can administer preventative care, especially to the fingers.

"Because of wound infection, the digits are the first to go in leprosy patients and amputation usually follows," said Sivasaru.

His invention was covered by the BBC-Health Check programme and he travelled to the Leprosy Colony on the Delhi-Haryana border for the film, later telecast on BBC World. This work was presented at the Appropriate Healthcare Technologies for Developing Nations International Conference in London.

And in September he presented a paper on the glove at the International Leprosy Congress in Brussels where he and Sathish Kumar Paul (36), his PhD student in India, won the Young Scientist

Award and Best Oral Presentation Award.

"We want to make this glove widely available."

Born and educated in India, Sivasaru said he'd experienced the despair of seeing a loved one die because of the prohibitive cost of medical intervention in India.

Many diseases are treatable – but the means is unaffordable.

In South Africa, where 90 to 95% of medical equipment is imported with up to 300% mark-up, the excessively high cost is passed on to the patient.

"This in a country with world-class engineers and clinicians," said Sivasaru, whose watchwords are 'affordable' and 'simple'. "It's quite burdening."

It's motivated him to develop indigenous technology. He and his team of postgraduate students have come up with a number of innovative, inexpensive solutions to common medical problems, like locally designed drip lines for re-feeding. Little more than a coil of thin plastic tubing with a plastic drip chamber attached, they're currently imported from Germany.

"How many of these do you think we use daily in South Africa?" he asks, uncoiling a sample from hermetically sealed packaging. "Thousands and thousands."

Some solutions are deceptively simple, and make you wonder: why didn't we think of that before?

"We're thinking out of the box," Sivasaru added. "Too often we get stuck in a cycle of novelty and academic outcomes. We want to be able to make things easier, make it cost-effective – and get it to the masses."

It's also about the uniqueness of the patients



Picture by Raymond Botha

**Dr Sudesh Sivasaru:** showcasing EMG-controlled prosthetic devices developed at UCT-Biomedical Engineering

themselves, so there's an 'in situ' aspect to his biomedical designs.

For his PhD (which he got at the tender age of 26), Sivasaru developed a high-flexion artificial knee implant for Eastern cultures, where people squat or sit on low platforms. Western prostheses don't provide the 120-degree flexion extension, the range needed for comfort when semi-squatting.

With a special interest in rehabilitative engineering, Sivasaru is inspired by everyday things. After watching the 2009 epic movie *Avatar*, he began to develop a paraplegic walker.

"It's scientifically challenging," he muses, "but we want to be helpful to people." ■



# Teaching offers a rare privilege to influence lives

A supportive environment makes all the difference to quality teaching, writes Professor Jenni Case

**R**eceiving a national award for teaching excellence is a great honour, but while compiling the portfolio to support this nomination a few months ago, I realised that the real reward was already in my hands. My Head of Department had invited graduates of our programme to make submissions in support of this nomination, and thus I found myself with a pile of statements that made me feel very good. My husband jokingly said, "You can't take these things too seriously, people always write nice things", but what I particularly appreciated was that students seemed to have actually noticed the things I was trying to do in class. Here is an extract from one of them to illustrate this point:

"Prof Case has an incredible ability to break down complex concepts into simpler, accessible ones. Secondly, despite the very quick turnaround in marking, she manages to provide detailed feedback. Thirdly, she is highly interactive in tutorial sessions and will go an extra mile to help a student understand. Lastly, she has an incredible memory; she is able to recall a whole class of more than 100 first year students by first name just a month into the course." I am sharing this with you because on one level I think it does show that good teaching is not always rocket science. I am sure that most UCT lecturers could tick off most items on this list, except maybe for the crazy endeavour of trying to remember student names. This is the reward of teaching: when students express the ways in which one's teaching has 'worked' for them. And, having recently experienced the loss of my father – also an academic – I was reminded again that we have the rare privilege of being able to positively influence many lives. Colleagues and students queued up at the funeral to share memories with me.

As much as these kinds of awards might suggest a 'lone ranger' model of the excellent teacher, this is actually an illusion. University teaching has a departmental and an institutional context, and a teacher in a non-supportive environment will have an uphill battle. I am fortunate to have lived my academic life in a department with strong leadership and academics who are committed to undergraduate teaching. This has been an amazing space to grow; I started when I was 27 and I am now 45. I am a scientist from my undergraduate education and an education scholar from my postgraduate work, and it is the boldness of this place that allowed me to join chemical engineering 'through the back door' and to teach in the undergraduate programme. I have been mentored by brilliant senior academics and can now, in turn, offer support to the next generation of academics.

However, the institutional context is also significant. There is a lot that I value about UCT and how it nurtures teaching endeavours. The excellent Centre for Education Technology and the support of ICTS come to mind. I have enjoyed exploring the possibilities of using technology in my teaching and am excited that we have a progressive project underway to improve our teaching venues, as I think this is long overdue. Also, with the provision of cross-campus Wi-Fi and many 'social learning spaces', the University is making progress. But I also believe there is a lot of institutional work to be done. I value our 'shape and size' commitment to making sure our undergraduates finish their degrees. We have some way to go in realising this dream, though.

To make quality teaching more of a norm in our institution, I believe there are two imperatives. The first lies in the staff recruitment process. In Chemical Engineering, every person applying for a lecturing post actually has to give a mock second-year lecture to the teaching staff, who take some delight in being second years for the day and asking for things to be explained carefully. We should

be doing this in every selection process in the university. This 'mock lecture' is far more telling of someone's baseline capacity and potential in the undergraduate teaching space than any research seminar. Teaching is, of course, a process of growth – but you do need to start with some teaching skill and a demonstrable commitment to student learning. The second crucial institutional moment is the ad hominem process. In our faculty, we have a rigorous process of assessing teaching performance and we have sub-minima in teaching for promotion to senior levels. In short, you will not be promoted to associate professor in our faculty if you are not able to show evidence of a fair contribution to effective teaching in the undergraduate core programme.

This being a personal piece, I want to do one final stir of the pot – especially for young graduates thinking about what they want to do with their lives. While I do punt the academic career, I want to suggest a potentially radical move as a possible first job. Being keen on teaching I started my career with three years in the school classroom, which I still would not change for anything. I want to encourage smart young graduates to consider a short stint in a school. The benefit of what you learn in that space will live with you through your life. Don't think that you will be written off forever from other jobs – be bold and do something in your 20s that you might not do later on.

But I also want to encourage those who are keen on teaching to think about an academic career. The stereotype of the university academic is someone who enters the academy wanting to do research and who has to do teaching as an afterthought. I used to think I was a bit odd, being someone who came here mainly because I wanted to teach (and then found that I also really enjoyed research). But I think this constituency might be growing. I don't think there are many jobs out there that offer you so much opportunity for creativity and growth. I cannot emphasize enough what a



**Jenni Case** is a professor, with a particular focus on academic development, in the Department of Chemical Engineering. She was recently announced as a winner of the CHE-HELTASA award for Excellence in Teaching and Learning, and has just launched a book entitled *Researching student learning in higher education: A social realist approach*.

great job this is. It is a real privilege to work with some of the most talented young school leavers that the country and the continent have to offer and there is nothing I would rather be doing with my life. ■

# Wealth from tourism not hitting the spot

Despite policy on poverty alleviation, the poor don't benefit from tourism, writes Assoc Prof Edwin Muchapondwa

**S**ome 7.4 million tourists come to South Africa each year, generating around R51 billion in revenue. But it's not trickling down to the poor. Tourism growth in developing countries has drawn enormous attention as a tool for poverty alleviation, particularly in Africa. Though Africa garnered only 5% of total international tourist arrivals in 2011, this generated an impressive US\$32.6 billion in income for the continent.

Tourism has become a key driver of socio-economic progress, generating export income, supporting infrastructure development, and creating jobs and enterprises. However, a recent research paper I co-authored has shed some new light on the role of tourism in poverty alleviation specifically.

My co-author, Professor Jesper Stage of the Department of Social Sciences at Mid Sweden University, and I used national data

from Botswana, Namibia and South Africa to determine the impact of tourism on the economy as a whole.

Tourism in both Botswana and Namibia centres on their wildlife and wilderness resources. South Africa has similar resources, but with its greater array of terrains, climates and wildlife, the tourism industry is more diverse.

In Namibia and Botswana, tourists generally visit state-controlled reserves, governed by policies that encourage the inclusion and support of industries that benefit local communities. In comparison, a greater proportion of South Africa's tourist resources are found on privately held land, with less community-managed nature and wildlife tourism.

While South African policies identify tourism as a tool of poverty alleviation, the lack of involvement of local communities and previously neglected groups suggests that these policies are ineffective.

The data we collected show that while

tourism plays a relatively important role in each economy, it's by no means a dominant sector, accounting for 9% of GDP at most.

Because of the greater role of local goods and services in South Africa's tourism sector, we have the highest tourist spending on locally made products. The opposite is true for Namibia and Botswana, where a large portion of tourist spending is on imported goods.

In all three economies, the share of labour income that comes from tourism is less than the share of total GDP generated by tourism. In South Africa, for example, tourism accounted for 6.2% of GDP, but only 5.4% of labour income. Similarly, the share of rural income received from tourism is less than the share of GDP received from tourism in all three countries.

Our results show that tourism has done very little for the poor. Sadly, it seems that in all three countries, the idea of using tourism as a pro-poor development strategy has yet to bear fruit. ■



Picture by Michael Hammond

**Associate Professor Edwin Muchapondwa** is director of UCT's School of Economics. This piece is based on a recent paper by him and Stage, published in *Natural Resources Forum* 2013.

# Bridging the digital divide, IS-style

YUSUF OMAR

**W**alking the lush campuses of UCT, it's hard to believe that just around the corner is a wasteland of inequality: Cape Town's townships, where the divide – digital and otherwise – is all too apparent. Thanks to a R45 000 grant from the university, scholars and students of the Department of Information systems are supporting a public computer laboratory in the impoverished township of Vrygrond, near Muizenberg, which is bringing to residents' fingertips tools and information that were previously out of reach.

Officially launched earlier this year, the Vrygrond Community Lab got off the ground after collaboration between the UCT community and their counterparts from Pforzheim University in Germany.

Vrygrond's state-of-the-art computer lab is run and maintained by community members. The lab gives locals access to training programmes, with subjects including – but not limited to – preparing and presenting presentations, application writing, job searching, general computer training, and other extracurricular activities.

This bridge across the digital divide allows community members access to a two-week basic computer literacy programme, while UCT students support entrepreneurs from the area by building websites for businesses. Learners in grades 10 to 12 are offered extra-school classes, with the aim of improving their performance at school.

"The vision of this joint project is to sustainably improve living and working conditions by providing opportunities for computer-assisted employment possibilities," reads the department's website.

"The immediate goal of the Vrygrond project is to equip residents with computer skills that will assist them in their daily activities, whether they be finding employment, running a business or studying."

The project has also strengthened local NGOs by offering them training and lending a hand in developing their websites.

IS gurus Professor Kevin Johnston and Dr Maureen Tanner, who are the brains (and legs) behind the lab, say: "Social initiatives that will uplift and improve the quality of life in impoverished South African communities are key to UCT's social development strategy and philosophy of providing holistic educational services to all communities, and redressing the imbalances of the past."

Professor Lisa Seymour, head of department, adds: "This commitment by UCT signals the start of a challenge to our alumni to help 'give back' by financially supporting this unique project."



Picture by Michael Hammond

**The divide:** Vrygrond, near Muizenburg, is one of Cape Town's most impoverished townships and is under-resourced in a myriad ways.

Mark Robinson, an Honours student who volunteered to contribute to the launch of the lab, said: "I have been privileged to develop a skill set during my Bachelor of Commerce degree, an opportunity that most South Africans have not had. We are now here to give something back. We can't change the world's problems overnight, but we can certainly try."

Another student observed: "For me personally, this was one of the best experiences I've had this year. The Honours Outreach Community Involvement Project taught us that there are communities out there that are not as privileged as our own. These communities could do with an extra hand from us in trying to improve their socio-economic status."

Professor Joachim Schuler of Pforzheim University said at the launch: "I am very grateful to the volunteers. Their first aim is to help, but this also helps our students to become leaders."

Community members were pleased at the advantage the skills they learnt on the training programmes gave them in the job market, while some young residents reported that the computer training programmes had sparked their desire to return to school and continue their formal education. ■



Picture by Michael Hammond

**Techno time:** The new lab is run and maintained by community members.

## Mental illness costly on the pocket

YUSUF OMAR

**A**s if the burden of suffering from a mental health disorder wasn't heavy enough, research shows that untreated mental illness in South Africa also costs sufferers a cumulative R30-billion in earnings each year.

This figure dwarfs the projected annual expenditure on mental health services of R500 million, say the UCT-led researchers.

These findings – published in late 2012 – were the result of pioneering research into the relationship between mental health disorders and lost income in South Africa, led by Professor Crick

Lund, the director of UCT's Alan J Flisher Centre for Public Health, in collaboration with a number of researchers from UCT and the Harvard University School of Public Health.

"Our findings support the argument that it costs South African society more to not treat mental illness than to treat it," says Lund.

The actual cost of lost earnings might be even higher, say the researchers, as their analysis excluded child and adolescent mental disorders, as well as other severe mental disorders such as schizophrenia and bipolar mood disorder.

At a commemoration of World Mental Health Day in October hosted by Parliament's Portfolio Committee on Health, Lund said that one in six South Africans per year will have a diagnosable mental health disorder. Lund also spoke about the Global Mental Health Action Plan between 2013 and 2030 that

has been adopted by the World Health Organisation (WHO), and which promises to scale up mental health services.

At the same meeting, South Africa's national Department of Health (DoH) was praised by Professor Inge Petersen, the PRogramme for Improving Mental health carE (PRIME) SAs principal investigator, for its Mental Health Action Plan. This seeks to integrate care for depression with care for chronic disease care. PRIME SA, funded by UKAID's Department for International Development, is investigating the best ways to scale up mental health services.

People suffering from depression were less likely to live healthily and seek proper treatment for chronic diseases such as HIV, which affected the impact of anti-retroviral treatment, said Petersen, making this integration crucial for improving health care. ■

## VACANT POSTS

## EXECUTIVE AND ACADEMIC POSTS:

**Lecturer:** Curriculum Development (2 posts), CET & HAESDU, Centre for Higher Education Development, Closing date: 18 November 2013

**Senior Lecturer:** PhD Emergency Medicine Programme, Department of Surgery, Faculty of Health Sciences, Closing date: 29 November 2013

**Senior Lecturer:** MPhil Emergency Medicine Programme, Department of Surgery, Faculty of Health Sciences, Closing date: 29 November 2013

## RESEARCH, PROFESSIONAL, ADMINISTRATIVE AND SUPPORT POSTS (PASS)

**Principal Technical Officer -** Electron Microscope Unit, Department of Clinical Laboratory Sciences, Faculty of Health Sciences, Closing date: 18 November 2013

**Employee Relations Manager,** Human Resources Department, Closing date: 18 November 2013

**Employee Relations Specialist,** Human Resources Department, Closing date: 18 November 2013

**Faculty Manager: Academic Administration,** Faculty of Humanities, Closing date: 18 November 2013

**New Media, Communication & IT Manager,** Careers Service, Centre for Higher Education Development, Closing date: 18 November 2013

**Human Resources Practitioner,** Human Resources Department, Closing date: 22 November 2013

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**Rondebosch:** Ivydene Guest House offers short and medium term stays in charming old Cape farmhouse on Jamie shuttle route, close to shops and restaurants and Main road. Visit [www.ivydeneguesthouse.com](http://www.ivydeneguesthouse.com) Email [ivydene@mweb.co.za](mailto:ivydene@mweb.co.za) (+27216851747)

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**Book for Sale:** Title: Back to Work ( Why We Need Smart Government For a Strong Economy)Author: Bill Clinton ( ex USA president ) Selling for R80 new still wrapped Contact: ext. 4739 or 0716775061

**MacBook pro 13" for sale.** Early 2011 model. R9400. For full specs visit: <http://support.apple.com/kb/sp619>. Contact Candice @ [Candice.king@uct.ac.za](mailto:Candice.king@uct.ac.za) or 079 661 0625

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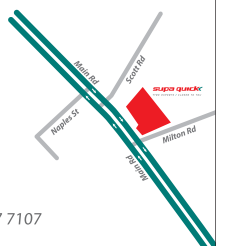
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# Poignant tribute to cadavers

HELEN SWINGLER

One of the Health Sciences faculty's more poignant ceremonies is the annual second-year MBChB tribute to the cadavers they dissect – and to the loved ones of those who donate their bodies to the cause of anatomical learning.

One of the first cadavers dissected at UCT's fledgling anatomy department at the South African College (UCT's forerunner) in 1911 was the body of a 29-year-old convict who'd been hanged for the murder of a merchant hatter in Rosebank.

Although Roeland Street Gaol was close to the Hiddingh Campus, which housed the medical school, there appear to be no other incidences of prisoners being used for dissection at UCT, said Dr Charles Slater, senior lecturer in anatomy in the Department of Human Biology.

Today, many bodies are bequeathed to the medical school; others are the unclaimed bodies of the homeless, paupers and prisoners, "those who lost their identities through what life threw at them", said Professor Graham Louw of the Department of Human Biology.

At the end of the year, each cadaver's remains are placed in a coffin and cremated separately, and the ashes are returned to those families who request this service.

"Usually the bones are kept for teaching purposes, and sometimes

body parts are kept for making teaching dissecting specimens," said Slater.

"These parts are meticulously tagged and can be traced to the donor."

A special team of departmental staff supervised by Bruce Dando prepares the bodies for dissection.

"When a cadaver arrives, either as a donor or a pauper, we check that it is suitable, ensure that the documentation is correct, and then prepare it for embalming. This is done using a formula of chemicals that include formalin and phenol," said Dando.

Some parts may be retained for teaching and can last for several years. With an eye on the future, UCT has funded the installation of a Plastination plant to replace the embalming fluid in cadavers with silicones.

"This means that the specimen may last for hundreds of years, alleviating the need to constantly replace embalmed specimens for teaching," added Dando.

Dando has attended conferences and workshops in Germany at Gunther von Hagens' Body Worlds factory for training, and is now training a technical officer at UCT. Von Hagens invented the Plastination process in the late 1970s, and his work is renowned.

At the cadaver ceremony on 1 November, the students recited poems of appreciation, sang songs of gratitude and performed duets of thanks.

"We need to remind ourselves," said Professor Laurie Kellaway, head of the Department of Human Biology, "that the deceased were loved, and have families who miss them."

Speaking at the ceremony, Donna, whose father donated his body, said her daughter had qualified as a doctor at



Picture by Raymond Bolha

David Langford (left) and Joshua Yifan Li, second-year MBChB students, pay musical tribute to the donors of bodies used for dissection. The annual cadaver-dedication ceremony is attended by family and friends of the body donors.

UCT last year. Her father was fascinated that the cadaver his granddaughter's group had dissected belonged to a 105-year-old man.

The group had named him Fred.

When he contracted terminal cancer he told the family: "I want to be like Fred."

"Today, my dad would be dancing," Donna told the assembly in the New Learning Centre. "He is where he wanted to be, thanks to you."

Ben said his father, a body donor, had the gift of giving: to his family,

spouse and community.

"And in his death he's given to you," he told students. "Thank you that you can give back."

Sue said her late husband of 47 years, also a donor, would have loved the ceremony.

"And I'm sure he would have loved the name you gave him."

"We were organ donors but getting a bit long in the tooth. We thought no-one would want our 'bits'. When he got cancer, we thought, we can do this [donate his body]."

Sue concluded with the observation: "If you go out as doctors expressing the empathy you've expressed here today, you'll all be wonderful."

One group had named their cadaver Pappa, and another had used Umfundisi (isiXhosa for 'teacher' or 'priest') because of all the body had taught them.

"It's an important day," remarked Kellaway, "and a dignified occasion where you show gratitude for the gift of the human body, your cadaver, your teacher." ■

## WHAT'S ON

» **Wrongly Accused:** In this comedy showcase, a young man (Waseef Piekaan) from the Eastern Cape finds himself in deep trouble with the law when he is accused of robbing an Indian cellphone-shop owner. **When:** 18 November – 18 January 2014. **Where:** Masambe Theatre.

» **Rossini's *Il Barbiere di Siviglia* (*The Barber of Seville*):** The Cape Philharmonic Orchestra concludes the 2013 opera season with Rossini's evergreen comic classic in a new production by Christian Crouse. **When:** 20, 21, 22 and 23 November 2013 at 19h30. **Where:** Artscape Theatre. Book at Computicket.

» **LAND:** Performances, visual art installations, public lectures and panel discussions about land, territory, ownership and art in South Africa will be presented by the Gordon Institute for Performing and Creative Arts (GIPCA). **When:** 21 – 24 November 2013. **Where:** Various venues around Cape Town. **Cost:** Free. **Contact:** fin-gipca@uct.ac.za; 021 480 7156.

» **Commercial & Workplace Mediation Training:** The civil justice system has priced itself out of the reach of many South Africans and mediation is becoming more and more popular to resolve disputes in diverse fields and industries. **When:** 27 November 2013. **Where:** Kramer Law Building. **Contact:** Paula Allen at Paula.Allen@uct.ac.za.

» **Michaelis Graduate Exhibition:** The exhibition showcases the diverse work of 45 students at the culmination of both the Bachelor Degree in Fine Art and the Postgraduate Diploma programmes. **When:** 4 December 2013 at 18h00. Exhibited in over 30 spaces, there is an exciting engagement with various media including Painting, Sculpture, Photography and New Media and Printmaking. **Where:** Hiddingh Hall, Hiddingh Campus, UCT, 31 Orange Street. **Contact:** Josephine Higgins at jm.higgins@uct.ac.za or 021 480 7170.

» **Launch of *Governing through Crime in SA*, by Gail Supe:** Supe will discuss her recently-published book, *Governing through Crime in South Africa: The Politics of race and class in neoliberalising regimes*, with Denis Davis, High Court Judge, and Don Pinnock, director of African Sun Press and Chair of the Usiko Press. The book deals with the historical transition to democracy in South Africa and its impact on crime and punishment. **When:** 5 December 2013 at 16h30 for 17h00. **Where:** Faculty of Law Common Room, Level 4, Jules & Kramer Law Building, Middle Campus, UCT. **RSVP:** Theresa.Hume@uct.ac.za on or before 25 November 2013.

» **ICTD Conference:** Held in cooperation with ACM SIGCHI & ACM SIGCAS. ICTD 2013 provides an international forum for scholarly researchers exploring the role of information and communication technologies (ICTs). **When:** 7 – 10 December 2013. **Where:** Kramer Building, Middle Campus, UCT. **Contact:** Janet Sirmongpong at Janet.Sirmongpong@uct.ac.za or 021 406 6348.



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