



EBE Alumni Update

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From the Dean's desk



IN 2007 the Faculty got off to an exciting start with record enrolments in almost all our Programmes which is a reflection of the major developments in the national economic growth scenario and the intensive interest by school leavers in pursuing careers in the engineering and built environment disciplines.

This year we had almost 5000 applications for only 700 odd places. Eventually we registered 709 students (compared to 597 in 2006) and the most exciting aspect of this, was the fact that we registered one of the largest first year classes in living memory in Civil Engineering, as well as having a record number of applicants in Architecture. This, of course, is evidence of the huge developments in our construction industry and the information I have been receiving from captains of industry is that it is expected that this boom will last for anything up to 10-15 years. At the same time, the demand for graduates in mechanical, chemical and electrical engineering reached levels hardly seen in the last few decades and for some years now, we have seen the boom in demand for places on our Programmes in Construction and Property Studies as well as in the postgraduate programmes in the built environment arena such as Planning, Urban Management, Landscape Architecture, Urban Transport, etc.

One of the most exciting developments was the resurgence in interest in a career in Geomatics. In a country and continent in which issues such as land tenure is of such critical importance, the career opportunities for such graduates is enormous. Thanks to a special agreement between ourselves and the Department of Agriculture and Land Affairs we have registered one of the highest first year classes in 2007 than has been the case for many years.

All of this, coupled with exciting research initiatives in the Faculty such as the Centre for Catalysis Research in Chemical Engineering being invited to be one of the hubs for the national "Hydrogen economy" initiative (worth many millions of rands), and the equally exciting "Cities in Africa" initiative based in Architecture & Planning but encompassing all the Departments in the Faculty, is indicative of the very exciting times ahead for the Faculty.

This excitement, however, brings with it new challenges not least of these being resources needed to manage these new developments, and finding the people to do the work and the space they will need in which to operate. The Faculty and the University is grappling with this right now and we must be sure that we find a solution which is acceptable to all sectors of the University.

2006 saw a number of reunions happening on campus: 1978 - 1982 Chemical Engineers; 1980 - 1985 Electrical Engineers and 1985 - 1990 Mechanical Engineers. In 2007 we are looking at a 40th reunion for all Engineering disciplines, and Civil Engineering graduates are planning a 50th reunion in 2008.

In conclusion, may I take this opportunity to thank you all again for your continuing strong and loyal support for the Faculty. The next year or two will usher in quite a few changes. The Vice-Chancellor, Professor Njabulo Ndebele, will be standing down in mid-2008 and the process for selecting a new Vice-Chancellor has already begun. At the end of this year I stand down from my position as Dean, having been here since 1999. I am confident that an exciting new group of leaders is ready to emerge to take the Faculty and the University to new heights! - Cyril O'Connor



South Africa Women in Engineering (SAWOMENG)

ONE OF the student body's highlights for 2006 was the development of the SAWomEng initiative.

SAWomEng is a non-profit, student run organisation which represents women in all engineering disciplines while they are at university. The organisation was started in 2005 by two Civil Engineering students, Naadiya Moosajee and Mabohlale Mampuru who said, "Our vision is to provide mentorship for students to bridge the gap between university and the corporate engineering industry. This initiative will also help students secure vacation work and employment once they have graduated."

SAWomEng has grown considerably since their first conference in August 2006. This year they are planning a 5-day conference that will bring the country's top 100 female engineering students from



Mabohlale Mampuru and Naadiya Moosajee – co-founders of SAWOMENG.

every institution that offers engineering programmes to UCT.

Naadiya Moosajee is studying towards postgraduate studies in transport and Mabohlale Mampuru will be completing her Civil Engineering degree this year.

The Faculty congratulates these outstanding students on this remarkably successful initiative. Visit the website: www.sawomeng.org.za.

Fuel for the Future

THE DEPARTMENT of Science and Technology (DST) has awarded R30-million over five years to UCT's Department of Chemical Engineering to establish a Catalysis Competence Centre, a virtual hub that will develop advanced hydrogen and fuel-cell technologies in South Africa.

This is a joint appointment with Mintek, South Africa's mineral research organization. It's another coup for the department, which already hosts the DST/NRF's Centre of Excellence in Catalysis (c*change). The UCT/Mintek centre is one of three Competence Centres that will develop hydrogen technology. The others are the Council for Scientific and Industrial Research (CSIR) and the University of the Western Cape.

The announcement comes on the back of the Department of Science and Technology's mandate to push technological change in South Africa's economy. One of the ways it will do this is by developing lead sectors to position South Africa in the global knowledge economy – and expand the country's base for wealth creation.

The new centre will offer front-edge research opportunities and will need to grow its postgraduate cohort, with the recruitment drive extending overseas. Professor Jack Fletcher and researchers in the Department of Chemical Engineering explore many alternative fuel sources, and at the new Centre of Competence will look into the prospects of fuel cells powered by hydrogen, as used in Ford's hydrogen-driven test vehicle, the Explorer.

Faculty receives generous grant from Minister of Education

IN 2006, the Minister of Education, Naledi Pandor, gave the EBE Faculty a grant of R16.38m to be used to promote the production of engineers and built environmentalists. This grant has created an exciting opportunity for the Faculty to make a range of interventions which will enable it to successfully address two major challenges which it, and indeed the rest of the country, faces at the present time, viz.

- Increasing the number of students it accepts into its Programmes in Engineering and the Built Environment, and
- Increasing the percentage of students who successfully graduate in these Programmes.

Professor Duncan Fraser has been appointed as an Assistant Dean with the task of setting up a research project aimed at investigating the enormously complex but critically important issue of throughput rates. The research project – called Phumelela (which means success in Xhosa) – will run from 2007 to 2009.

Planned interventions are:

- **Appointment of Academic Development Officers.** The Faculty is in the process of appointing Academic Development Officers in each of the six Departments in the Faculty as well as in its Academic Support Programme. The duties of these staff will be to ensure that ongoing attention is given to adequate mentoring of students; to involve themselves in the development of a professional tutorial system and to generally involve themselves in the teaching of undergraduate courses and in curriculum development.
- **Undergraduate scholarships.** These will be awarded to students who are already registered for degrees in the Faculty and who are in very good academic standing but face the prospect of leaving university due to serious financial problems.
- **Developing a more professional tutoring system.** Money will be spent on the general upgrading of its tutorial system.
- **Appointment of a permanent counsellor.** The Faculty employed the services of a clinical psychologist, Nazeema Ahmed, to facilitate the student-mentoring programme. The programme is targeted at first year students and aims to assist them in their transition from school to university. The key aim is to improve student retention and throughput.

A1 Rating for Professor George Ekama

PROFESSOR GEORGE Ekama, the Head of the Civil Engineering Department has received a prestigious National Research Foundation (NRF) A1-rating for his research work in wastewater treatment systems.

Professor Ekama heads up the Water Research Group (WRG) which develops mathematical models for simulating chemical, physical and biological processes of wastewater treatment systems and runs experimental systems to validate these models.

“In a developing country where water quality - and quantity - is paramount, necessity is the mother of invention,” says Ekama. For more information on his work visit www.civil.uct.ac.za

UCT'S CHANCE TO HOST ANNUAL ARCHITECTURAL STUDENT CONGRESS

A GROUP of UCT Third Year Architecture students recently organized and hosted the annual Southern African Architecture Students' Congress at UCT.

Over 600 architecture students from South Africa's universities and universities of technology were joined by students from Botswana and Mozambique, including 30 exchange students from Argentina, at the Congress. As part of the event, the students enjoyed morning lectures given by international architects and educators, afternoon workshops and tours, and exhilarating evening social activities.

The highlight of the Congress was the annual Murray and Roberts Des Baker Competition, which forms part of the third-year design studio programme leading up to the congress. This competition serves as a showcase for work produced by the various schools. This year UCT continued its good performance in this most prestigious of South Africa's architecture students' competition and students made a big impact with their outstanding displays.

The Architectural Student Congress is an event that rotates each year between the schools of architecture in South Africa.

Blast Impact Survivability Research Unit (BUSRU) continues to grow and prosper

THE BLAST Impact Survivability Research Unit (BISRU) was established in 2003 by the Department of Mechanical Engineering. Since then the Unit has grown considerably.

Professor Nurick, Head of the Unit, says, “In 2003 there were 12 male students registered for postgraduate studies, to date 32 students are registered. One of the exciting developments is that out of the 32, 11 are female. Seven of the female students come from UCT and the rest are from other institutions. Nine are Mechanical Engineering graduates, one studied Electrical Engineering and the other a Bachelor of Science in Genetics. The students are involved in a range of projects including, Detonics/Impact, Structural Response, Material Characterisation and Human Body Impact.”



Professor Cheryl de la Rey (left of picture) visited BISRU and is seen here with some of the female postgraduate students.

On a recent visit to the Department, Professor Cheryl de la Rey congratulated the unit on its growth and work and expressed curiosity about the unit's by-line that reads: 'Engineering Research that saves lives.'

Professor Nurick explained, “Our work is not just about ‘explosions’ or ‘mine blasts’ but about the engineering design that is able to prevent injury in blasts, developing materials for vehicles and buildings etc, anything that can help prevent injury.”

BISRU is the only University lab that houses in one footprint; a Blast Chamber; Drop Testers; Hopkinson Bars; Sled Tester; Ovens; and Press and Computational Facilities (Hardware and 3 Codes).

This fast growing Unit has developed collaborative links with industry and academia on both national and international levels. There have been many international visitors from various European, British, Australian Higher Education Institutions, including companies such as Boeing International, Renault, and Airbus.



CONTINUING PROFESSIONAL DEVELOPMENT

Courses in the second semester:

Introduction to Project Management: 28 August – 2 October 2007
Executive Guide to Project Management: 16 October – 20 November 2007
Property Development for Beginners: 27 August – 5 November
Architecture & Urban Conservation – Part II: 17 September – 19 November 2007

Courses throughout the year

Transport Studies Programme: Individual modules throughout the year.

For more information contact Heidi Tait on 021 650 5793 or email: cpd@ebe.uct.ac.za

Reunions 2006



1985-1990 Mechanical Engineering

Mechanical Engineer 1985 – 1990 graduates with Professor Bob Tait (centre) attended the Open Day where they were able to see the final year students' projects.

1980-1985 Electrical Engineering

Feedback from the alumni: "This was an evening that brought back many fond memories and it was a pleasure to meet our lecturers and classmates. The foundations on which the Department has been built are truly sound and it is really encouraging to see how this platform is supporting significant growth in training future Electrical Engineers."



Electrical Engineering graduates from 1980 – 1985 with Professor Barry Downing (2nd from left) and Professor Reineck (4th from left)



1978 – 1982 Chemical Engineering

In December 2006 the Chemical Engineering class of 1978 – 1982 met for their class reunion.

Travelling from all corners of the world, some of the classmates who attended were Boris Erlank from California, Arthur Hanslo and his wife from the Netherlands, Werner Schumann from Germany, John Venn from Korea and the rest from across South Africa. The reunion was hosted by Associate Professor Dee Bradshaw (graduated in 1981) and Professor Jack Fletcher (graduated in 1980). The two were delighted to show the newly built Chemical Engineering Building and all its world-class facilities to their fellow alumni.

Professor Cyril O'Connor was the MC at the dinner and was happy to see some of his old students as were Professors Geoff Hansford, Brian Paddon and Duncan Fraser. It was wonderful to watch alumni arrive and to see their faces lighting up as they recognised old friends.

For information on alumni reunions or the Faculty in general contact Mary Hilton 021 650 4108 or mary.hilton@uct.ac.za

