

RESEARCH DEVELOPMENT INITIATIVES



A flagship research development and support initiative, UCT's Emerging Researcher Programme (ERP), reached its tenth year in 2012. Whereas most higher-education institutions are faced with the challenge of an ageing cohort of established researchers nearing or entering retirement, the ERP and other targeted research support interventions at UCT are proving to be successful in growing and nurturing the next generation of academics. Other interventions include the Programme for the Enhancement of Research Capacity, the Mellon Visiting and Retired Scholars Mentorship Project, and the Next Generation of Academics project.

The Emerging Researcher Programme

A cross-faculty programme located in UCT's Research Office, the ERP strives to ensure the transfer of essential research skills from experienced researchers to those academics who have yet to establish a research career. With almost a decade of experience, the ERP offers support across all scientific disciplines.

The success of this programme is evidenced by its growth: in its founding year, the programme had 45 participants; by the end of 2012, this number had increased more than tenfold, with a total of 548 academics having received some form of support from the ERP since its inception. Participation in the programme remains voluntary, and many members who have 'emerged' choose to retain links with the ERP and to receive an evolving form of support.

During 2012, the ERP offered 41 seminars and 25 workshops across all disciplines. Topics ranged from research planning and understanding the H-index and impact factors, to planning for a successful sabbatical and open-access publishing.

The ERP offers modest grants for research development purposes. The entire grants process is used as a capacity-building exercise, from assistance in developing the proposal and submitting the application, through to the production of appropriate outputs that correspond to goals identified in the proposal itself. In this way, the ERP aims to equip researchers with the skills required to compete successfully for external grants. In 2012, 82 research development grants in excess of R2.6 million were awarded. This is made possible through funding provided by the University Research Committee, the Carnegie Corporation, the Mellon Foundation, and the Education, Training and Development Practitioners' Sector Education and Training Authority.

One of the most important tasks of the ERP is to develop excellent supervisors of postgraduate research. Through the supervision training programme, novice researchers are

guided through the strategic, relational, and procedural issues associated with master's and PhD supervision. The programme is open to all academic staff, whether they are supervising postgraduate students for the first time or seasoned academics who wish to update and strengthen their supervision skills.

Programme for the Enhancement of Research Capacity

The Programme for the Enhancement of Research Capacity (PERC), established in 2008, provides a framework for supporting both mid-career and established researchers. It also has a key objective of strengthening collaborative research networks with partners in the global South and particularly in Africa. It does this through a range of initiatives that encourage collaborative, cross-disciplinary research that links UCT staff to research colleagues elsewhere in Africa.

In 2012, a total of 221 academics attended one or more of the ten PERC seminars, two which were specifically geared towards mid-career support. Seminars were offered by UCT and visiting international staff, including Professor Debbie Epstein (Cardiff University) and Professor Jane Kenway (Monash University).

A large part of PERC support is directed at preparing staff to apply for an NRF rating, though support is also given for career planning, promotion goals, and publication strategies.

One of the highlights of 2012 was the visit by Professor Paulin Hountondji from the National University of Benin, who became the second annual PERC visitor. He is one of Africa's best known philosophers and Emeritus Professor and Honorary Dean of the Faculty of Humanities at the National University of Benin. Professor Hountondji presented a series of seminars and a Vice-Chancellor's

Open Lecture titled *Heritage and Progress: a Dilemma of Contemporary African Culture*.

In an effort to stimulate dialogue on interdisciplinary research at UCT, PERC hosted a series of workshops and seminars in 2012, led by a number of eminent researchers, including prominent scholar and UCT graduate Professor Frank Kessel of the College of Education at the University of New Mexico. Professor Kessel strongly supports the creation of innovative inter- and transdisciplinary approaches to research, which is also being encouraged by many global academic and funding agencies, as a way of addressing urgent social problems such as poverty, health inequities, violence, and sustainable development.

Research grants awarded through PERC are seen as developmental and applicants are supported to construct their research proposals, as well as to undertake the research. In 2012, funding from the AW Mellon Foundation enabled the awarding of three grants valued at R165,000 each, bringing the total number of current PERC projects to 10 across four faculties. One measure of the success of the PERC-funded projects is the extent to which these projects establish research ties with partners in Africa. To date, ties have been forged with researchers in Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe.

The Mellon Visiting and Retired Scholars Mentorship Project

The donor-funded Mellon Visiting and Retired Scholars Mentorship Project is intended to establish a one-on-one mentorship relationship between developing researchers and a visiting or retired scholar within a mentee's specific discipline. This project dovetails with the ERP and PERC to build and strengthen a new generation of researchers. Visiting or retired scholars commit up to one year of their time to the mentee. The AW Mellon Foundation has extended its support until the end of 2014.

Since its inception, 37 mentors have participated in the project, the majority of whom are from outside South Africa: the United States of America, United Kingdom, the Netherlands, Israel, Germany, Canada, Nigeria, and Australia. Approximately 170 researchers have benefited from mentoring interventions, which have resulted in a

wide range of outputs, such as peer-reviewed articles, book chapters, conference papers, grant applications, and doctoral graduands. In 2012, 35 mentees participated in the seven active mentorships.

Next Generation of Academics Project

Research support extends to ensuring that South Africa and the rest of Africa can count on a vibrant academic profession in the future. Funded by the Carnegie Corporation, the *Next Generation of Academics in Africa* project aims to develop a cohort of trainee academics in the fields of infectious diseases, civil engineering and economics to create a competitive pool of young scholars who can be recruited into academic careers in Africa. The initial two-year grant (2011–2012) has been extended by a renewal grant for a further three years (2013–2015). The fields were selected on the basis of their importance in relation to national and continental priorities, the inherent difficulty of attracting students to academia in these fields, rather than the lucrative public or private sector, supervisory capacity, and a suitable pool of candidates who meet the Carnegie dual criteria of a commitment to staying in academia and coming from previously disadvantaged population groups, including women.

The aim is to complete the training of 76 doctoral students and 16 postdoctoral fellows by 2015 in the context of innovative supervisory hubs that consist of a mixture of doctoral students, postdoctoral fellows, mentors, and supervisors. The hub models vary across the relevant disciplines, but common denominators include a team-based approach, mentorship differentiated from supervision, a teaching component, workshops, feedback seminars, and support groups.

The project has a reference group consisting of the universities of Ghana, Makerere, the Witwatersrand, and UCT. Meetings of the reference group took place in Nairobi (2011) and Kampala (2012) to share good practice and the lessons learned in the training and development of a next generation of African scholars. The third such meeting will be hosted by UCT in 2013.

Thanks to extensive quantitative and qualitative data that are being gathered from the project, the lessons learned are being documented and will be analysed to contribute to new ways of thinking about PhD training in the future, institutionally, but also nationally and on the continent.



Faridah Chebet

Growing the Next Generation

Faridah Chebet joined the University of Cape Town in 2011 as a PhD scholar under the Carnegie-funded *Next Generation of Academics in Africa* programme (described further on page 24). In 2012, she was appointed as a full-time lecturer in the Department of Civil Engineering at UCT, and continues to pursue her studies on a part-time basis. She is undertaking her doctoral research within the Geotechnical Research Group, whose main emphasis is seeking innovative and environmentally sustainable solutions to challenges of ground improvement involving soil as an engineering material.

In the midst of increasing human population and the resulting need to develop more civil engineering infrastructure to serve the growing population, geotechnical engineers in developing countries, faced with limited financial resources, continue to search for cost-effective and sustainable ways of improving the engineering properties of construction soils. Presently, polymer-based geosynthetics and geofibres are widely used in the construction industry as reinforcement materials. The Geotechnical Research Group in the Department of Civil Engineering, under the supervision of Dr Denis Kalumba, is undertaking extensive research on reusing waste material, such as tyre waste, carpet waste, and plastic bag waste as reinforcement inclusions in soil to establish viability for use in ground improvement schemes. These materials are abundant, but are by and large destined for disposal or incineration and yet their unique properties can once again be beneficial in a sustainable materials stream. Investigation into the reinforcing properties of these materials is being carried out mainly through soil laboratory testing and numerical analyses.

As a member of the Geotechnical Research Group, Faridah's main areas of interest are geotechnical engineering ground-improvement, soil reinforcement, and geo-environmental sustainability. Her doctoral thesis focus is on the improvement of engineering properties of soils by means of reinforcement, using alternative materials such as plastic waste. Soil material is extensively used to build geotechnical structures such as highway embankments, road sub-grades, earth dams, foundations, embankments for flood protection, and slope stabilisation.

Due to expansion of cities, marginal sites that were previously disregarded due to poor engineering soils have become prime land for construction and this has created the need for modification or improvement of soils on these sites. Soils with poor strength properties can generally be made into viable construction material when properly reinforced and therefore ground improvement is increasingly considered for many infrastructure projects. To date, a paper on the research findings was submitted and presented at the International Conference on Ground Improvement and Ground Control in Australia in 2012. A second paper has been selected for presentation at the International Conference on Soil Mechanics and Geotechnical Engineering in Paris, France.

Faridah believes that the structured training within the Carnegie Programme has been invaluable in preparing her for the roles and responsibilities of being an academic and finding the balance between research and teaching. As a Carnegie Fellow, she was exposed to the day-to-day academic duties, taking on a substantial teaching load and undergoing systematic mentorship on how to facilitate student learning and respond to student needs. She describes her experience under the Carnegie Fellowship as "a journey of personal growth and continual self-discovery".

Originally from Kapchorwa, a district on the slopes of Mt Elgon in Uganda, Faridah attended Makerere University, where she completed her undergraduate studies in Civil Engineering. She went on to obtain a master's degree in Geotechnical Engineering at the University of Manchester, and then joined UCT to pursue a PhD in Geotechnical Engineering.

Faridah's appointment in 2012 as a full-time academic in the Department of Civil Engineering was a defining moment for her, which she describes as a "coming of age".