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Research and Development Unit hosted a workshop on the 'Research Process' at CUT

This year, the Research and Development Unit is going all out in empowering postgraduate students at the Central University of Technology (CUT) with the information needed to carry out their studies. On Friday 27 February 2015, students and researchers were entertained with presentations with a twist. These presentations were done by staff from the Research and Development Unit as well as Research Managers from the four CUT faculties.

The message was clear: The research process at CUT is well planned and provides the necessary support postgraduate students and researchers need to conduct their research. Some of the themes covered in the presentations were as follows:

- Building Blocks for the Research Process;
- Lessons learned from my journey: A female researcher's perspective;
- An internal 'tool' to grow our 'own timber in research publication';
- Persuasive writing in research and
- An Ethical Research Culture, amongst other themes.

The workshop was interactive and students were given the opportunity to table their own views on various aspects of the research process. The key message that came through during this workshop, is that conducting research becomes manageable when the fundamentals are understood and a nourishing and supportive research environment is established. The second Research and Development workshop will take place on Friday, 15 May 2015.

Compiled by Ms Zenobia Louw



In this picture: Audience engaging at the Research and Development Unit's workshop that demonstrated and explained the dynamics of the Research Process.

Anti-Cancer and phytochemical Screening of *Asparagus africanus* extracts

Mr OD Okolie, a master's student in the Faculty of Health and Environmental Sciences presented a poster titled "Anti-cancer properties of *Asparagus africanus* root extracts" at the Bio Pacific Summit Rim that was held in San Diego, California, on the 7th -9th December, 2014. He explained that as an upcoming researcher he has learned a lot regarding new ways of developing patents. He had the opportunity to consult with the President and Chief Editor of the Biotechnology Industry Organization of the United State, about the challenges young scientist in Africa and South Africa face. Possible funding opportunities were discussed and this inspired Mr Okolie to work around the clock to take CUT and the Free State to another level taking into consideration the institution's vision 2020 goals. Mr Okolie networked with other researchers from Canadian as well as Columbian institutions who are involved in the extraction of phytoconstituents in plants.

Compiled by OD Okolie



Above: Mr O.D. Okolie standing at the poster that he presented at the at the Bio Pacific Summit Rim.

South Africa, Mozambique and Angola Research Collaboration Workshop: The role of indigenous knowledge on science and technology

An African proverb states that if you want to travel fast you should travel alone but if you want to travel far you travel together. This African proverb sums up very well the intentions of the tri-nation workshop on Science and technology between South Africa, Angola and Mozambique which are not to move fast but move far. The workshop was held at the Central University of Technology on 25 February 2015. The theme of the workshop was the role of indigenous knowledge on science and technology. Around thirty delegates that included representatives from CUT, Agricultural Research Council, University of South Africa, National Research Foundation and community attended the workshop. The first session of the workshop discussed progress on projects that are currently funded under the South Africa/ Angola and South Africa/Mozambique bilateral corporation. The two projects focus mainly on the use of indigenous

vegetables in addressing food security (Project leaders: Dr Malebo and Mr Francisco Afonso - Angola) and the use of medicinal plants to combat diseases such as HIV, Tuberculosis and cancer (Project leaders: Mr Rosario Chitondo - Mozambique, Dr Idah Manduna and Prof Sam Mashele). The projects use indigenous and scientific knowledge to solve challenges in food security and treatment of diseases. Outputs from both projects will impact positively on the three countries as they will find solutions that will result in food security and value addition in medicinal plants.

The second session focused on future and possible collaborative projects that the three countries can jointly embark on. Dr Desmond Ncango from the ARC highlighted potential projects in the field of port entry quarantine and plant disease management. Prof Msagati from UNISA, highlighted challenges such as the search for alternative energy and its impact on the environment, the effect of bio-toxins on water quality, the presence of heavy metals and endocrine disruptors in vegetables and foods as areas of possible collaborative projects. Potential projects from the University of Kimpa Vita were highlighted by Dr Manuel Bengui and Mr Armando Mgombo.

The final session of the workshop highlighted the role of research administration on science and technology. Mr Michael Nxumalo from the National Research Foundation; highlighted the importance of conducting research that is globally relevant yet responding to local challenges. He further explained the importance of science engagement where communities are involved in research projects at universities. This Unit of International Relations and Corporations promotes the internationalization of science. Mr Nxumalo also alluded that the CUT was ahead of the NRF by hosting this tri-nation workshop as they are currently planning to do something similar. He commended the CUT and workshop organizers for this initiative that is going to advance science within the SADC region.

The workshop came to an end with a presentation from the Dean of Research, Prof Laetus Lategan, who highlighted the role of research management in the research process. Overall the workshop brought together researchers from three countries that are willing to share knowledge, resources and expertise in order to advance science and technology within the SADC region.

Compiled by Dr Ntsoaki Malebo



*In his picture:
Dr Ntsoaki Malebo,
Research Manager in the
Faculty of Health
and Environmental Sciences*



Electrical Engineering Staff member presented peer-reviewed paper at the 25th Southern African Universities Power Engineering Conference, SAUPEC 2015

Mr. Sandile Phillip Koko, a Technical Assistant from the Department of Electrical, Electronic and Computer Engineering presented a peer-reviewed paper titled "Modelling and Performance Analysis of a Micro-hydrokinetic River System as compared to Wind System" in the 25th Southern African Universities Power Engineering Conference (SAUPEC 2015) that was held in Johannesburg on 28-30 January 2015. He won an award for being one of the best 12 presenters at SAUPEC 2015 conference. His topic was based on revealing an affordable rural electrification technique by utilizing the flowing water.

Mr Koko's abstract reads as follows: "Micro-hydrokinetic river (MHR) system is one of the promising technologies to be used for remote rural electrification. In rural areas with access to both wind and flowing water resources, wind generation is selected as a first electrification priority. The potential benefit of generating electricity using flowing water resource is unnoticed. Hence, this paper presented the modelling and performance analysis of the MHR system as compared to a wind generation system using MATLAB/Simulink software."

Compiled by Mr Sandile Koko

Right: Mr Sandile Koko after being awarded one of the best presenters at the SAUPEC 2015 conference.



Dr Mostafa: Research Manager from the CUT's Civil Engineering Department third from right with PhD students from the Illinois Transportation Center (ICT) in the USA.

Possible international collaboration winks for CUT's Civil Engineering Department and the Illinois Transportation Center (ICT), USA

Dr M Mostafa, Senior Civil Engineering Lecturer and Research Manager of the Faculty of Engineering and Information Technology, visited one of the top global research centers located at the Illinois Transportation Center (ICT). The Advanced Transportation Research and Engineering Laboratory at ICT is a unique and comprehensive transportation research, educational, and testing laboratory. This laboratory is situated at the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign (UIUC). The complex is located on 47 acres. It includes 60,000 square feet of laboratories, continuing education classrooms, office space, a technical library, and a computer facility. Dr Mostafa discussed the possible collaboration between CUT and ICT with Prof I Al-Qadi, ICT director. Moreover, he met the PhD students at ICT before visiting the Department of Civil Engineering and University of Illinois.

Compiled by Dr Mohamed Mostafa

RESEARCH AND INNOVATION

Newsletter

Upcoming Events

April

Current	NRF Flagship Programme Application; Call for DST/NRF BTech Scarce Skills Block Grant bursaries;
21	Postgraduate Workshop on Research Process in Welkom.

Welcome note from the Dean

The year 2015 promises to be a very exciting year. Apart from the many projects lined up for this year I had recently shared with the University Research and Innovation Committee (URIC) that special attention should be given to:

- Optimise research participation – get more academics involved in the research project;
- Create value – how do we grow the science and innovation basis? (Emphasis on new and original knowledge and application thereof.);
- Grow research budget through external funding;
- Enhance student experience and
- Develop a scholarly community – research is the basis of all new innovations.

These initiatives will add to strengthen our existing capacity and extending our research culture. What will be important during 2015 is to occupy a specific space for our research and innovation projects in the national system of research and innovation. I believe the buzz phrase is: be locally relevant and internationally competitive!

Best wishes for your research activities during 2015.

Prof Laetus O.K. Lategan