

Democratization and Changing Perspectives on the Research Agenda



**Gloria J Braxton, Chief of Party/Project Director
United Negro College Fund Special Programs Corporation**

Gloria J Braxton, an international educator with 30 combined years of teaching, administrative and project management experience, joined the South Africa staff of the UNCF Special Programs Corporation in November 1999 as the Deputy Chief of Party where, among other general management responsibilities, she managed the curriculum development and student academic development components and served as the Program Manager for partnership linkages with 18 U.S. higher education institutions. Prior to assuming the position in South Africa, she completed an eight-year stint as the Director of the Center for International Development Programs for the Southern University System in Baton Rouge, Louisiana. Having joined the Southern University faculty as an assistant professor in 1974, she became a full professor of Political Science in 1987 and served as the Chair of the Department of Political Science and Geography from 1983 to 1991. She earned the Ph.D. in political science from Clark Atlanta University.

The Centre for Research Management and Development (CRMD) has over the past seven months been accumulating data on "Women in research at the DIT" in an attempt to elucidate the key factors which are preventing women from emerging as fully-fledged, independent researchers. It is the intention of the CRMD to recognize and acknowledge all women academics at the DIT who are engaged in research and to publish early in 2005 a bulletin on "Women in Research at the DIT". Dr. Gloria Braxton, Chief of Party of the Tertiary Education Linkages Programme, shares her views with the DIT on the importance of ensuring gender equity in research at HEIs.

On behalf of all Tertiary Education Linkages Project stakeholders, I congratulate the DIT's Centre for Research Management and Development for its celebration of women engaged in research and its commitment to encouraging growth and supporting research capacity-building for women. While it is important that a research culture is nurtured at all levels, it is particularly important that women be encouraged and supported, as research has shown that throughout the world women lag behind in research output at higher education institutions.

Gender disparities exist at every level, whether in economic and social resources, economic opportunities, basic

human rights, or in political voices. However, one common thread runs throughout all levels, disparities always bring about poverty of some kind and hinder the nation's overall development. Thus, gender inequalities come with costly experiences to people, institutions, and nations.

The research agenda for a nation determines the type of policies and strategies that promote effective development. Institutional reforms, economic strategies, and proactive policy-making promote development and take into account the local realities that drive national priorities. When gender disparities exist in terms of who plays a decision-making role in the design and

(cont. on page 2)

RRR CONGRATULATIONS RRR

Congratulations to the following staff members who have successfully secured research grants from the NRF for 2005. Best wishes and every success in your research endeavours.

Thuthuka Programme

- Mrs S Mistry • Mr V Mohanlall • Dr J Raju • Mrs R Rampersad • Dr K Bisetty • Prof J Conolly • Prof B Odhav
- Mrs T Padayachee • Dr K Permaul • Mr S Ramsuroop • Mrs A Razak • Mrs P Reddy • Prof S Singh • Mr D Singh

Institutional Research Development Programme

- Mr C T J de Beer • Mr I G Sutherland • Ms KL Wells • Prof KJ Duffy • Dr P Govender • Dr S Moyo • Dr R Naidoo
- Prof M Kekana • Prof P Tabakov • Prof M Walker • Mrs D Heukelman • Mr T Jacobs • Dr N Nepal • Ms M P Njobe
- Prof M Wallis • Prof F Bux • Mr V Ndinisa • Dr V L Pillay • Mr F M Swalaha • Mr A Telukdarie

MESSAGE FROM THE DIRECTOR

Dear Colleagues

Welcome back to another exciting year in research at the DIT! Congratulations to all those who have improved their higher degree qualifications, published their research findings in peer-reviewed journals, presented their work at national and international conferences, disseminated their work through other avenues, and successfully supervised higher degree students. Congratulations also to our researchers who have successfully secured research funding from the NRF, MRC, WRC, SANPAD, EU, industry and other funding agencies.



Prof Gansen Pillay

The witnessing of young researchers at the DIT emerging into fully-fledged, successful researchers in their own right is a joy and a delight. In January 2003, the

DIT had a total of five NRF-rated researchers. At the end of 2004, the DIT had a total of 11 NRF-rated researchers. Dr. S. Moyo (Mathematics), Prof. M. Kekana (Mechanical Engineering) and Prof. F. Bux (Biotechnology) were awarded their ratings at the end of last year. The latter two are graduates of the DIT and demonstrates that the potential for DIT graduates to transcend institutional boundaries and be considered equal or better to other researchers in our country is possible.

While research output in 2004 at the DIT remained encouraging, there is still a long road ahead. We cannot rest on past glories. The chances of success in research favour the hard-working, the dedicated and the committed researcher. In its mission **"To strengthen institutional research for the benefit of Africa"**, the CRMD will continue to provide support and advice to researchers. A total of R1 million has been secured for attendance at national and international conferences. Seed grants, funds for equipment, postdoctoral fellowships, funds for visiting researchers and various other interventions will continue to be in place in an effort to catalyse and promote research at the DIT. It is up to the researcher to make the most of these opportunities and to become successful.

This edition of RE@DIT features a foreword from Dr. Gloria Braxton on the CRMD's focus on **"Women in research at the DIT"**. Details of this initiative will be publicised through DIT's communication vehicles. Other features include profiles on researchers, seed grants awarded, workshops held, research visits, conferences hosted and attended, publications by DIT researchers, and funding opportunities.

I take this opportunity of wishing each of you personal success in your research and I look forward to meeting with you individually this year to discuss your concerns and share in your successes. Good luck!

Seed Grants Awarded

In 2004 the CRMD offered to first time researchers the opportunity to apply for seed funding up to the value of ten thousand rand (R 10 000-00) for their research. Congratulations to the following members of staff who were successful in obtaining these grants:

1. Mr R Naidoo (Department of Emergency Medical Care and Rescue)
2. Mr M Ramgovind (Department of Catering Studies)
3. Mr N R Singh (Department of Electronic Engineering)
4. Ms S Mistry (Department of Mathematics)
5. Mrs C Porter (Department: of Jewellery Design)
6. Mr K Moorgas (Department of Electronic Engineering)
7. Ms P Moodley (Department of Sport Management)

It is pleasing to note that Ms. S. Mistry was able to successfully secure a grant for 2005 from the NRF's Thuthuka programme for researchers in training. Applications for seed grants for 2005 may be forwarded to the CRMD via the appropriate channels.

(cont. from page 1 -

"Democratization and Changing Perspectives on the Research Agenda)

implementation of policies and programs at the local level, the "one-size-fits-all" formula disadvantages a significant portion of the population, usually women. The cost of this formula is apathy, ignorance, and poverty.

Consequently, the argument that researchers must incorporate gender considerations is one that needs very little justification. Research should play an enlarging role in building capacity, providing substance for decision-making, and assisting in sustaining the vision for the future. This role becomes particularly important in societies that have been marginalized and oppressed. Thus, the importance of building research experiences around the worldly experiences and indigenous knowledge of disadvantaged peoples become paramount. Several considerations come to mind:

- It is important that research focuses on asking relevant questions that produce creative solutions for challenges faced by the community, the nation, and the world.
- It is important to understand that the primary purpose of research is to effect change. This can only be done if the research process incorporates experiences and the full participation of both men and women.
- Research processes must be democratized as other aspects of the institutional ethos.
- Democratization of the research requires that the process fosters and reinforces a belief among research subjects that they are agents of social and economic change.

- Democratization of research will increase the scientific validity of the process. Questions will encourage solutions that will accurately measure observed situations that reflect the "true" situation. Results will be based on reliable sources and yield consistent solutions.
- Democratization of research will improve upon its predictive validity, allowing a higher level of accuracy of the data obtained in the present for future growth and development

As constantly reminded at the 2002 UN Conference on Sustainable Development, the major problem of this century is how to sustain development so as to "meet the needs of the present generation without compromising the needs of the future." In all our research endeavors we must become concerned with what sort of society we want to build for the future. In South Africa, it has been emphasized that this future must be one dominated by science and technology. This points to the critical need for the natural sciences, humanities, social sciences, etc. to begin to bridge the huge gap that isolates them and seek ways to strengthen the utilitarian mission of higher education so that their integrated and complementary research and teaching responsibilities are realized by both men and women in academia.

The role of research in higher education becomes more than just for the development of knowledge for training young minds, but the research will provide understanding, and play a critical role in the dissemination of knowledge and the development of the wisdom for the application of that knowledge in ways that change and build capacity for all citizens. Democratization, thus, becomes another great responsibility of the higher education research agenda.

RESEARCHER PROFILES

Mrs Glenn Flanagan

Ms Glenn Flanagan is an academic and researcher in the Department of Tourism at the Pietermaritzburg campus of the DIT. She has been instrumental in conducting pioneering research into the French presence in KZN.



The French Presence in KZN, a cultural tourism research development project, is ground breaking research in that, previously, when the word FRENCH was mentioned, people only thought of the Cape, Franschoek, the Huguenots and viticulture. This research has shown quite conclusively that KZN has a very interesting FRENCH PRESENCE that can be developed for the benefit of all the communities touched by its progress.

Research was initiated on the young French prince, the 23 year-old Prince Imperial, Louis Napoleon who died on 1st June 1879 in the closing stages of the Anglo-Zulu war at Uqweqwe, some 22 kms from Nqutu, in Zululand. This then lead on to research on the presence of other Frenchmen in that war, and in the later Anglo-Boer war. The research expanded to include the Prince Imperial's family and so from their initial Franco-Zulu liaison, other cultural entities and links were included. And of course, all of the developing research was practically applied from start through exhibitions, symposia, a pamphlet, booklets, talks/slide shows, provincial, national and international cultural research visits and liaisons.

In recognition of this cultural tourism research, Glenn was knighted by the French government in 1999 at Uqweqwe in the presence of the Ambassador of France, Mr T. D'Albis, Embassy dignitaries, a regiment of the French Foreign Legion (specially flown out from the Comores for the ceremony), the Minister of Arts, Culture, Science and Technology, Dr B. Ngubane and local VIPs. She has also received other distinguished awards for her research.

In 2004 her research focused on the ACTUAL and manifold FRENCH PRESENCES that exist in KZN - from French restaurants, to Francophone cultural groups, to French dogs!

The most recent TELP workshop lead by Paulette Powell for the Riverside Tourism Department noted that the refining of excellence in order to equip our students for their future careers is of importance. In the context of Africa and the Indian Ocean countries and tourism development, the learning of FRENCH is of prime significance.

Ms Flanagan's future plans are to:

- publish her "cameos" on the Prince Imperial, Louis Napoleon for the 10th anniversary of the launch of LA ROUTE DU PRINCE IMPERIAL, LOUIS NAPOLEON and the 150th anniversary of the birth of the Prince, and continue to persuade PMB to link officially with Fontainebleau with whose Napoleon museum we have a 5 year research link and with whom we are having an exchange exhibition on the Prince next year; and
- pursue our KZN/St Helena association and continue to persuade the authorities to have KZN officially represented on the island through a cultural tourism display of exhibitions, Zulu craft work and Zulu dancing.

Prof. Pavel Tabakov

Prof. Pavel Tabakov was initially employed as a researcher in the Department of Mechanical Engineering and CADENCE. He is now an Associate Professor lecturing in the Department of Mechanical Engineering and continues to engage in groundbreaking research on composite materials.



Prof. Tabakov introduced a new method, based on the genetic algorithms, for data separation and data clustering in multidimensional Euclidean spaces. The method uses floating hyper-ellipsoids for collecting the data. First it was used for the extraction of rules for the detection of short DNA motifs. The results obtained were more accurate than the best known method published in the literature. After the presentation of the algorithm for data clustering at the Fourth International Conference on Modelling and Simulation in Australia (2002), his contribution was recognized as one of the best five works in the world on artificial intelligence.

He has now initiated new research in the field of optimization. This is a quite complex and challenging problem and involves design optimization of laminated composite structures with manufacturing uncertainties.

Prof. Tabakov currently has one doctoral student, Mr Mark Rawlins, who is finishing his PhD thesis on the application of artificial neural networks in the design of internal-combustion engines. This research will definitely find its application in the industry.

In 2004 Prof. Tabakov attended the First International Conference on Adaptive Modelling and Simulation held in Goteborg, Sweden. He presented his research on using a variational approach for the analysis of significantly non-homogeneous plates. Prof Tabakov wishes to continue with his current research, and intends working on data mining coupled with the writing of complementary computer packages.

ACADEMIC RESEARCH VISITS

The CRMD encourages academics to undertake study visits in order to catalyse networking and collaboration and to enhance research output. In 2004, two of DIT's researchers, Dr. K. Bisetty and Mr. A. Telukdarie spent time in laboratories in Spain and the USA, respectively. The following is an account of their experiences.

Dr. K. Bisetty from the Department of Chemistry undertook research at the Universitat de Politecnica de Catalunya (UPC) in Barcelona, Spain from 13 September to 17 December 2004.

Dr Bisetty's collaboration with the Computational Chemistry research group at the UPC, dates back as far as 1999, where he spent 3 months in their research laboratory working on the application of computational techniques in the field of peptide and molecular design towards his PhD studies. His latest study visit abroad was based on the development of forcefield parameters for the bioactive cage peptides. The primary aim was to extend the scope of study to include biological and organic molecules. With the utilization of the supercomputer facilities along with the molecular modelling software tools configured for parallel computing, novel research findings worthy of publication have been produced.

The computational study was based on Metenkephalin, which is a 5-residue opiate peptide with an amino acid sequence of Tyr-Gly-Gly-Phe-Met. Here molecular dynamics (MD) and simulated annealing (SA) simulation protocols were used to assess the bioactive conformations of this pentapeptide, in gas phase as well as in different solvents including dimethyl sulfoxide, methanol and water. On average, each system comprise of about 3 500 molecules, resulting in the simulation being computationally expensive, and often time consuming. For this purpose high performance computers are essential. This laboratory is equipped with state-of-the art computational facilities. All the simulations were carried out on 3 separate dual processor LINUX machines, plus the supercomputer with 8 of the 64 processors dedicated for the MD simulation. For publication purposes, it is expected that molecular dynamics simulations of up to 50 nanoseconds are required. Periodic sampling of the simulation involved viewing the structures in 3D as well as analysis of their thermodynamic properties.

As this is a long-term study, the broader goals are as follows:

- To compare the theoretical results with known experimental studies such as Nuclear Magnetic Resonance (NMR) spectroscopy, and Infra-red (IR) spectroscopy;
- To contribute to the understanding of the conformation of short peptides in solution; and
- To undertake a methodological approach with regard to the simulation protocols used by SA and MD approaches.



Francesc Corcho and Vincent Bisetty



Molecular Modelling group in Barcelona

Left to right: Arnau, Josep, Vincent, David, Arnie and Martha

A manuscript titled "A conformation analysis of Metenkephalin" is currently in preparation, and will be submitted for publication to an international journal. In addition, some work was also done on the development of new force field parameters for the cage peptide. This is quite an extensive study and is expected to last for 6 months. By accessing the supercomputers remotely, the work will be continued on a part-time basis.

The experience gained from this study visit has been very rewarding, in the sense that it has strengthened Dr. Bisetty's collaboration with the group in Spain. As he is part of this research group, all the necessary computational facilities are at his disposal, and he is able to access them. It is hoped that in the future such high performance computing facilities would be established in the KZN region.

The highlight of this visit is that, as from January 2005, the world's secondmost powerful supercomputer comprising 4 500 processors is to be hosted in Barcelona. It is very pleasing to note that as part of the on-going collaboration, Dr. Bisetty would be able to remotely utilize one of the most powerful computers in Europe. Finally, the knowledge and the experience gained from this visit will contribute significantly towards the understanding of biologically/pharmaceutically important compounds, using computational techniques.

Acknowledgements:

A project of this nature is very reliant on IT support, and I wish to express my gratitude to Jan Downard (@DIT), for ensuring easy telnet and ftp remote access to my Silicon Graphics Unix machine, stationed in the Department of Chemistry at the DIT. To Professor JJ Perez and his co-workers, for his invitation to be part of the research group at the UPC. The financial assistance from the NRF Thutuka programme, DIT institutional research funds and Ernest Oppenheimer Educational Trust is gratefully acknowledged - K. BISSETTY

Collaborating translators

Professors Edgard Sienaert and Joan Conolly and the mammoth task of translation and presentation of the scholarship of Marcel Jousse (1886-1961)

Associate-Professor Joan Conolly, professor in Orality-Literacy Studies, in the Centre for Higher Education Development at Durban Institute of Technology has been most fortunate to have Professor Edgard Sienaert of the University of Cape Town agree to be her NRF Thuthuka Mentor and Visiting Scientist.

Professors Sienaert and Conolly have been collaborating on the translation of the work of Marcel Jousse, and related activities, since 1995, when Joan Conolly, then a masters student, undertook a critical contextual reading of the primary learning theory of Marcel Jousse - *Du Mimisme à la Musique chez l'enfant* (1935) 'From Mimism to Music in the Child' - for her masters thesis in Orality-Literacy Studies, supervised by Professor Sienaert.

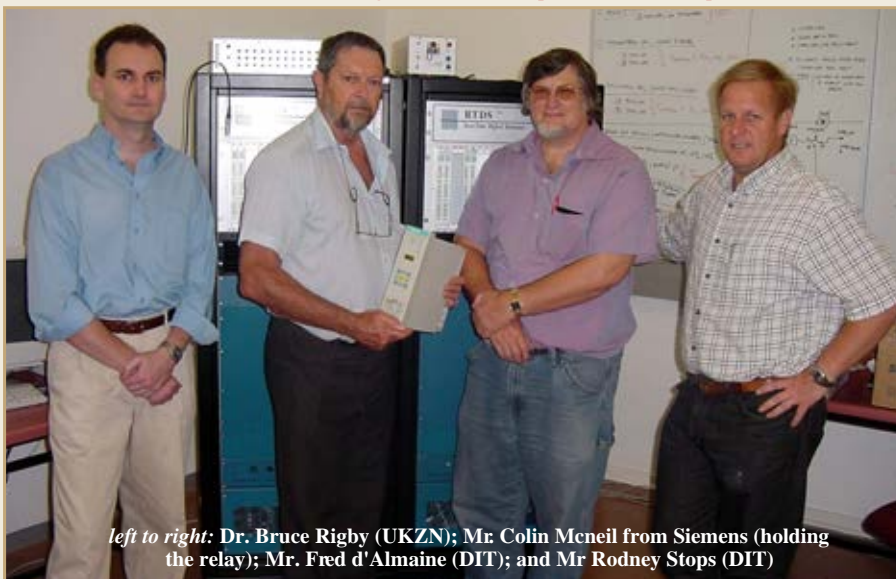
The latest in the series translated by Professors Sienaert and Conolly is *Holism and Education*, which consists of seven lectures delivered by Marcel Jousse between 1931 and 1941, with an Introduction from Jousse's *Anthropology of Geste and Rhythm* and a Foreword and Afterword by the translators. In these lectures, Jousse focuses on 'wholes' and 'holism', specifically in the nature of the learner, in the operation of learning, in knowledge itself, and in the relationship that knowledge has with its mode of composition and expression. In essence, to address the many problems that beset education, Jousse advocates a 'back to basics' approach which privileges the learners' innate capacities and potential.

For more information about the research projects at the DIT which focus on the scholarship of Marcel Jousse, please contact Joan Conolly on conollyj@iafrica.com.

Siemens awards DIT Real Time Power System (RTPSS) Centre

Recently, Siemens (Pty.) Ltd. presented the RTPSS (Real Time Power Simulation System) Centre with two state of the art microprocessor based electrical protection relays valued at R40 000,00. These relays are used to protect transmission lines from faults that would otherwise cause damage resulting in loss of electricity supply to consumers.

The Simulation Centre is based in the Department of Power Engineering and is a collaborative effort between DIT, UKZN and UCT with industrial partners Eskom, Siemens, ABB, SEL and Alectrix. This Centre is unique in South Africa and, indeed in Africa, and is expanding its capacity continuously. It is also becoming known as a national facility.



left to right: Dr. Bruce Rigby (UKZN); Mr. Colin Meneil from Siemens (holding the relay); Mr. Fred d'Almaine (DIT); and Mr Rodney Stops (DIT)

AN OPPORTUNITY FOR TOP QUALITY COMMUNICATION AND MEDIA SKILLS TRAINING FOR SCIENTISTS

Two top science communication experts are visiting South Africa during February 2005 to conduct a series of workshops and strategic planning sessions. The visit of Sheila Anderson (Communication Manager at the Natural and Environmental Research Council in the UK) and Myc Riggulsford (a senior science communication strategist and consultant) is made possible by support from the British Council. The courses will be offered free of charge, but places are very limited!

As part of their programme in South Africa, they will present two interactive courses, focus on communication and media training for scientists in Cape Town on Tuesday 8 February 2005 and in Pretoria on Wednesday 9 February 2005.

Interested persons should respond directly to: **Marina Joubert**

Science Communication
SAASTA (SA Agency for Science and Technology Advancement)
marina@saasta.ac.za

DIT plays host to the 9th International Conference on Biotechnology in the Pulp and Paper Industry

Since its inception 27 years ago, the 9th ICBPPI touched African soil for the first time at the ICC from 10 - 14 October 2004. It was an honour for DIT to be associated with such a prestigious event especially with the entire organization being driven by Prof Suren Singh as co-Chairman. The conference was attended by 120 international delegates representing academia and industry from 20 countries. Delegates were welcomed by Ms Vanessa Leo (Chair of Council) and Prof Darren Lortan (DVC Academic) at a cocktail function hosted at the Hotel School and sponsored by the Centre for Research Management and Development (CRMD).



Members of the Conference Organising team

The objectives of the 9th ICBPPI were to provide a scientific forum for presenting the recent research progress over the last three years since the meeting in Helsinki in 2001 and to promote interdisciplinary interactions and discussions between industrial and academic researchers on the current and future directions in the field of pulp and paper biotechnology.

The opening session was led by Jim Casey (Mondi) and Stuart Christie (SAPPI) who provided excellent overviews of the Pulp and Paper Industry in South Africa from their respective sectors. A total of 45 oral and 70 poster presentations were made covering a wide range of scientific research in the field, viz., fundamentals, production and application of lignocellulosic enzymes, degradation of lignocellulosics, biopulping, enzyme-assisted

bleaching, fibre characterization and modification, by-products and bioremediation, tree biotechnology and large-scale applications. The conference was closed by Prof Liisa Viikari (VTT Biotechnology, Finland), who is regarded as the pioneer of xylanase-aided bleaching.

At the beginning of the 21st century, the pulp and paper industry is facing increasing pressure for development of more cost-effective, energy-saving and environmentally benign technologies. Decades of devoted research on biodegradation of lignocellulosic polymers and the advancement of the biological sciences into studies of the enzymatic reaction mechanisms at a molecular level have laid the foundations for the successful application of biotechnology in fibre processing and genetic improvement of trees. Nowadays, biotechnology can offer the pulp and paper industry a number of advantages which can improve the efficiency of the existing processes of pulp and paper manufacture and upgrade product quality using microbial- and enzyme-based ecological technologies.

Due to their high specificity, low investment costs, environmental compliance and diminishing prices, enzymes are becoming a powerful research tool in fibre characterization, and a competitive biocatalyst that can reduce or replace the use of hazardous chemicals in many pulp and papermaking operations. Cost-effective large scale applications are made possible by the increased capacity for producing novel enzymes in large quantities and the acceptance of these technologies is growing as the knowledge of microbiology, enzymology, molecular biology of these enzymes and industrial experience increase. A number of biotechnological applications have been commercialized or are approaching commercial use: biobleaching with hydrolyzing or oxidative enzymes, enzymatic deinking, drainage and strength improvements, pitch control, biopulping with microorganisms, refining energy reductions, whitewater bioremediation, etc.

In the next few years, we can expect to see applications of another generation of enzymes, those of genetically engineered enzymes or tailored enzyme cocktails with improved binding capacity, increased pH and temperature resistance and enhanced heterocatalytic activity as well as a new class of non-hydrolytic enzymes such as swollenin and expansin which can open up the fibre network by disrupting the inter- and intra-molecular hydrogen bonding. Certainly, the potential of these new generation enzymes for novel industrial applications including fibre surface, cellulose and lignin modifications would be enormous and researchers in the field of pulp and paper biotechnology would be faced with new and exciting challenges.



Conference Chairpersons with representatives from Buckman Laboratories and SAPPI, local and international representatives

ACADEMIC RESEARCH VISITS *(cont.)*



Mr. A. Telukdarie is an academic in the Department of Chemical Engineering and is currently finalizing his PhD studies. His research entails cleaner production modeling of the electroplating process. Due to the nature of his research, visits to centers of excellence in cleaner production and process modelling needed to be undertaken. The process simulation laboratory at Wayne State University, Detroit, USA was identified as the ideal place to visit, to improve his skills in this area. After initial discussions with Prof. Haung, the HOD, it was agreed to accommodate Mr. Telukdarie as a visiting student for the summer of 2003 and 2004.

"National Research Foundation funding was secured for the visits and soon I was at Wayne State University. Both Dr Haung and his post-doctoral student, Dr Xu, mentored me on the way forward on my research. Stemming from the first visit a paper was accepted for the American Electroplating and Surface Finishing Conference in January 2004. A second paper was subsequently accepted for the AESF conference in June. The second conference was during my second study visit to Wayne State."

After the successful paper presentation a journal paper was submitted to the Journal of Chemistry in March 2004. The second paper was submitted to the Journal of Electroplating in August 2004.

The visits to Wayne State University was a major factor in dictating the direction of my research. Dr Haung's mentoring has been a guiding light and an inspiration to the challenging task of completing my research.

NRF Workshop on evaluation and rating and on-line submissions

The CRMD hosted a "Rating system and on-line submission workshop" on Friday 26 November 2004. This presentation benefitted researchers who had already registered on the system and had familiarised themselves with it as well as researchers who wished to apply for evaluation and re-evaluation in 2005.

The programme consisted of an interactive presentation, which included

- a presentation on the rating system;
- a demonstration of the online system (i.e., how to download); and
- a question and answer session.

Should you require further information or require a demonstration of the system, kindly contact the CRMD.

PUBLICATIONS BAROMETER#

Bold-faced author names indicate staff member/student of the DIT.

1. Olaniran, A.O., **Pillay, D.** and Pillay, B. (2004). Haloalkane and haloacid dehalogenases from aerobic bacterial isolates indigenous to contaminated sites in Africa demonstrate diverse substrate specificities. *Chemosphere* **55**:27-33.
2. Olaniran, A.O., **Pillay, D.** and Pillay, B. (2004). Characterization of two bacteria isolated from a wastewater treatment plant in South Africa for aerobic dehalogenation of some aliphatic chlorinated compounds. *International Journal of Environmental Studies*. **In press**.
3. Singh, N., Somai, B.M. and **Pillay, D.** (2004). Smut disease assessment by PCR and microscopy in inoculated tissue cultured sugarcane cultivars. *Plant Science*. **167**: 987-994
4. **Sutherland, I.** (2004). Paradigm shift: The challenge to graphic design education and professional practice in post-apartheid South Africa. *Design Issues* **20**: 51-60.
5. **Wells, K., Seinaert, E.** and **Conolly, J.** (2004). The Siyazama project. A traditional beadwork and AIDS intervention programme. *Design Issues* **20**: 73-89.
6. Godlee, F., Pakenham-Walsh, N., **Ncayiyana, D.**, Cohen, B. and Packer, A. (2004). Can we achieve health information for all by 2015? *Public Health* <http://image.thelancet.com/extras/04art6112web.pdf>.
7. **Raju, J.** (2004). First level library and/or information science qualifications at South African universities and technikons: a comparative study of curricula. *South African Journal of Libraries and Information Science* **70**:9-19.
8. **Moyo, S.** and Leach, P.G.L. (2004). Symmetry methods applied to a mathematical model of a tumour of the brain. *Proceedings of Institute of Mathematics of NAS of Ukraine* **50**:204-210.
9. **Raju, J.** (2004). General education in library and/or information science education and training. *Education for Information* **22**: 77-97.
10. **Odhav, B.** (2004). Guidelines for routine monitoring of membrane performance for potable water production in small water treatment plant. *Water Research Commission, Report No. 1034/1/04*.
11. Surujlal, S., Tivchev, G., Kasan, H.C. and **Bux, F.** (2004). Development of biological treatment technology for the remediation of edible oil effluent. *Water Research Commission, Report No. 1084/1/04*.
12. **Foster, N.** (2004). The opportunities for entrepreneurship, innovation and knowledge- building at blue IQ in Gauteng and Dube tradeport in Kwazulu-Natal. *Proceedings from Druid Winter Conference 2003 on Innovation, Growth and Industrial Dynamics*. **Published On-Line**.
13. **Foster, N.** (2004). Crime, Fear and the gate prospects of resurgence in South African Cities. *Proceeding of Leverhulme International Symposium 2004*. **Published On-Line**.
14. **McKenna, S.** (2004). Lecturers' discourses about the interplay between Language and learning. *South African Journal of Higher Education* **18**: 278-287.
15. **Jinabhai, D.C.** (2004). Empirical findings on the impact of affirmative action on the training and development of black managers for corporate organisations in South Africa. *Public Personnel Management* **33**: 121-135.
16. **Sunder, R.** (2004). Osteoporosis: the shifting scores of BMD. *The South African Radiographer* **42**: 18-21.
17. Weideman, E., Barkhuysen, F., Hunter, L. and **Fassihi, A.** (2004). The yarn dismantler: a new technology for laboratories. *International Textile Bulletin* **3**: 38-42.
18. **Narsee, S.D.** (2004). Navigating uncharted waters: Peace within hearts, hands and minds. *Proceedings of the international Journal of Learning* **11**. **Published On-line**.
19. **Bisetty, K.** (2004). A computational study of PCU cage peptide. *Proceedings of the 2nd European students conference on physical, organic and polymer chemistry*. **Published On-line**.
20. **Mare, S.** (2004). Detection of distortion due to mechanical imperfections in recording and playback apparatus. *Proceedings of the IPET 2004: Implementing Technology*. **Published on CD**.
21. **Stewart, G.D.J.** (2004). The KwaZulu-Natal literary map on the web-reconciling literary tourism and preservation. *Proceedings of the International Conference on Politics and information Systems: Technologies and Application* **1**: 142-147.
22. **Kassier, S.** (2004). An investigation into clinic-based nursing staff as an influence on the feeding practices on Zulu infants 0-8 months attending baby clinics in central Durban, Kwa-Zulu Natal: An exploratory study. *Proceedings of the Nutrition Congress 2004-Diversity in Nutrition*.

Attendance at conferences (updated)

Staff who attended conferences locally and abroad includes:

1. Sunder, R. Osteoporosis: The shifting scores of BMD. *17th National Society of Radiographers of South Africa, 22-24 April 2004, ICC, Durban.*
2. Mdletshe, S. and Magojo, T.S. Factors that contribute into the late presentation with cancer of the rural Zulu speaking patients into the major cancer treatment centers in KwaZulu-Natal (KZN) (Prior to December 2000). *17th National Society of Radiographers of South Africa, 22-24 April 2004, ICC, Durban.*
3. Fregona, C.M.M. and Pete, M. Re-drivers, scaffolders and explicadors: the role of WebCT in knowledge design for 21st century learners. *WebCT Users Annual National Conference, 5-6 April 2004, University of Stellenbosch.*
4. Turkington, T. Free to speak: The making of DIT on-line. *WebCT Users Annual National Conference, 5-6 April 2004, University of Stellenbosch.*
5. Ngcobo, J.N. and Motha, M.J. The impact of public administration and management theories or approaches on public participation. *State of Public Administration and Management Theory in South Africa, 13-14 May 2004, Tshwane University of Technology.*
6. Kanny, K. and Mahfuz, H. Cyclic characteristics of X-linked and linear cored structures and elevated temperatures. *1st European Conference on Composite Materials, 31 May 2004 - 3 June 2004, Rhodes, Greece.*
7. Pillay, P. and Knight, S.E. An evaluation of the implementation of the National Guidelines on cervical cancer screening clinics within the eThekweni Municipality. *Public Health 2004 Conference, 6-8 June 2004, Holiday Inn Garden Court, Durban.*
8. Govender, V. HIV/AIDS dilemma in health care: Legal obligations vs political commitment. *2004 International Conference of the Global Business and Technology Association, 8-12 June 2004, Holiday Inn, Cape Town.*
9. Madaree, A. and Lachman, N. Case of rare division of the metopic suture: Anatomic, embryologic and surgical consideration. *21st Annual Scientific Session of the American Association of Clinical Anatomists, 9-11 June 2004, St. Mary's College, Moraga, California.*
10. Pete, M. and Fregona, C.M.M. Sustaining online learning during times of change through a multi-disciplinary community of practice. *Ed-media 2004 World Conference on Educational Multimedia, Hypermedia and Telecommunications, 21-26 June 2004, Lugano, Switzerland.*
12. Pratt, D. D. The Communication Skills project: a tentative exploration of the interrelationship between traditional page-bound literacy, computer literacy and the development of academic literacy. *11th International Literacy and Education Research networking Conference on Learning, 27-30 June 2004, Havana, Cuba.*
13. Govender, T.P. Fellowship of the emailers: The aliens are amongst us. *6th Annual Conference on World Wide Web Applications, 13 September 2004, Rand Afrikaans University.*
14. Odhav, B. Nutritional value of traditional leafy vegetables in Kwa-Zulu Natal. *WAITRO Biennial Congress, 6-11 September 2004, Kenya.*
15. Naidoo, R. and Kistnasamy, J. The Settlers School Health Study: Implementation and Outcomes. *8th World Congress on Environmental Health, 22-27 February 2004, ICC Durban.*
16. Merwe, M. Environmental conflict resolution is essential for successful environmental impact assessments in South Durban. *8th World Congress on Environmental Health, 22-27 February 2004, ICC Durban.*
17. Merwe, M. Health is a neglected priority in environmental impact assessments. *8th World Congress on Environmental Health, 22-27 February 2004, ICC Durban.*
18. Niranjan, I. Learning Occupational Health and Safety Legislation by using educational games. *8th World Congress on Environmental Health, 22-27 February 2004, ICC Durban.*
19. Poswa, T. The importance of gender in Waste Management planning: A challenge for solid waster managers. *8th World Congress on Environmental Health, 22-27 February 2004, ICC Durban.*
20. Barratt, G., Kistnasamy, J. and Merwe M. Positive learning experiences caused by the merging of two teaching institutions delivering environmental health programs. *8th World Congress on Environmental Health, 22-27 February 2004, ICC Durban.*
21. Pete, M. Excavating a site of rich environments for active learning. *WebCT Users Annual National Conference, 5-6 April 2004, University of Stellenbosch.*
22. Redhi, G.G Thermodynamics excess properties for binary mixtures of Butanenitrile+a Carboxylic Acid at 298.15K. *18th IUPAC International conference, 17-21 August 2004, Beijing, China.*
23. Stewart, G.D.J. South African literature and humanities computing. *South African Studies Colloquium, 27 September - 15 October 2004, Essen, Germany.*
24. Ntuli, C.Z. An evaluation of student nutrient intake and anthropometric status to determine the effect of nutrition knowledge and socio-demographic factors on nutritional status. *Nutrition Congress 2004-Diversity in Nutrition, 23-27 August 2004, Worcester, Western Cape.*
25. Bux, F. Biochemical and physiological fingerprinting of pure cultures of filamentous bacteria isolated from wastewater treatment plants in Durban, South Africa. *IWA 2004 Congress- World Water Congress and Exhibition, 19-25 September 2004, Marrakech, Morocco.*
26. Singh, R. Industrial Quality Assurance Techniques- The Artificially Intelligent Approach. *South African Institute for Industrial Engineering, SAIEE 2004 Annual Conference Lean Mean Industrial Engineering Machine, 16-17 September 2004, Fourways, Johannesburg.*
27. Sentoo, N. From manager to cyberian: how to go online. *7th Annual LIASA conference Libraries and Democracy: The vital link, 27 September 2004 - 01 October 2004, Polokwane.*
28. Pillay, D. Molecular typing of *Vibrio Cholera* isolates reveals a dynamic population structure. *Australian Society for Microbiology 2004 Annual Scientific Meeting, 26 September 2004 - 01 October 2004, Sydney, Australia.*
29. Pillay, D. Aerobic dechlorination of cis-trans-dichloroethenes by bacteria indigenous to contaminated sites in Africa. *Australian Society for Microbiology 2004 Annual Scientific Meeting, 26 September 2004 - 01 October 2004, Sydney, Australia.*

Obituary

It is with deep sadness that we note the tragic passing away of Mrs Kogi Ishripersadh from the Department of Chemistry, who was one of our most promising academics and researchers. Kogi was engaged with her PhD studies at the University of Free State. The CRMD expresses its sincere condolences.



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