

National Excellence in Teaching Awards

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FOREWORD

Diane Grayson
Director: Institutional Audits, CHE

In September I had the privilege of visiting 10 Scottish universities, together with the Deputy Vice-Chancellors Academic and Teaching and Learning from 14 South African universities. The Scottish universities were diverse - they ranged in age from 4 to 602 years old, and in focus from research intensive to vocational. But they had some things in common. They all place great value on the quality of their students' experience. And that means that the quality of university teaching is very important to them. In Scotland it is not acceptable to be a good researcher but a poor teacher. On the contrary, it is the norm for new lecturers to be expected to apply for fellowship of the UK Higher Education Academy (<https://www.heacademy.ac.uk>), which manages the UK Professional Standards Framework, and promotions to more senior academic positions are increasingly requiring higher levels of achievement on the framework.

The CHE's Quality Enhancement Project (QEP) was initiated in 2014 to improve student success in higher education. We know that many factors influence the success of our students; the quality of university teaching is one of them. In South Africa we have a long way to go in ensuring that all lecturers are skilled in university teaching. To get there we have to overcome a number of obstacles. In the *Content Analysis of the Baseline Submissions for Phase 1 of the Quality Enhancement Project* (CHE, 2015), one of the obstacles identified is the

rewards structures at many of our universities. For example, many promotions criteria weight research performance much more heavily than teaching performance, particularly at the senior levels. Several institutions indicated that they did not know how to rigorously assess teaching quality. The CHE therefore undertook a national capacity-building activity as part of the QEP to address this problem. In June two 2-day workshops were held on *Assessment and Recognition of University Teaching*, led by Dr Thomas Olsson from Lund

University in Sweden. Dr Olsson has worked for many years at both his institution and nationally to develop and require what the Swedish call “pedagogical competence” among academics. Pedagogical competence has four components: teaching practice, observation of teaching and student learning, theoretical knowledge of teaching and student learning and planning to improve pedagogical practice (Olsson and Roxå, 2013). Deans and directors of teaching and learning from all universities were invited to the workshops.

Hopefully, the 132 people who attended the workshops, together with the HELTASA SIG on professional development, provide a critical mass of people for a national conversation on requiring, assessing and rewarding university teaching.

In addition, as part of the QEP a small task team of DVCs is looking at structural issues that can be addressed nationally to promote good university teaching.

Fortunately, South Africa has a number of academics who excel at university teaching, despite the obstacles. Each year, I am awestruck at the level of commitment to students, ingenuity, imagination and effectiveness of the applicants for teaching awards. Heartfelt congratulations to the winners. You are heroes.

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INTRODUCTION

Amanda Hlengwa
Chairperson: HELTASA

This is the seventh year in which HELTASA is delighted to partner with the Council on Higher Education in offering the National Teaching Excellence Awards for 2015. These awards are an important national initiative not least because they contribute to conferring the same prestige on teaching in an academic career as has traditionally been conferred on research.

We are all accustomed to hearing of colleagues who have won medals or awards for their scholarly work as researchers. We have also heard how promotions committees traditionally have only looked to research in making decisions about progression up the academic ladder. Historically, teaching has been a 'Cinderella' activity in comparison to research yet now an increasing number of universities have introduced criteria for teaching into their promotions procedures and prestigious awards - national and often institutional - are available to those who excel in this area of academic endeavour.

The recognition that accrues as a result of teaching awards, not only to individuals and institutions but to the practice of teaching itself, contributes to the 'cultural register' of academic life. The idea that teaching can be scholarly, that it is to be rewarded and

celebrated contributes to academics being able to draw on a very different set of ideas in order to construct their own academic identities. This opens up a wider range of possibilities in an academic career and makes that career accessible to a more diverse group of individuals than ever before. It is no longer necessary to be a high-flying researcher to reach the top of the academic ladder. Now, increasingly high-flying teachers can reach the same ranks. As they do this, they begin to occupy leadership positions in which they can speak about the importance of teaching and influence others to pay the same attention to this aspect of their academic work as they have done.

In a country such as South Africa, quality teaching can mean the difference between a student passing or failing, getting a degree and finding highly paid work or continuing in the

cycle of poverty which has dogged their family for generations. Changing the way we value teaching in our universities has potentially life-changing implications and the National Teaching Excellence Awards need to be seen in this context.

The 2015 National Teaching Excellence Award winners come from a wide range of disciplinary backgrounds and institutional contexts.

Common to them all is the ability to create environments in which their students can flourish as learners regardless of what or where they are learning. Given the very different levels of resourcing in this country and the diverse nature of institutions and programmes, the ability to respond to challenging

contexts whilst, at the same time, creating in students the belief that they can reach the expectations their academic teachers have of them is critical. All of the Award winners this year have demonstrated to a committee of peers judging the awards that they can do this - and much more besides.

As HELTASA President, I salute the winners of the 2015 Awards and congratulate them on their achievements. Even more importantly, along with many others, I look to them to provide the leadership and direction in teaching and learning our country so badly needs.

WINNERS: Teaching Team

Carolyn McGibbon, Gwamaka Mwalenmba
& Elsje Scott



A unique teaching team has evolved at the University of Cape Town in response to the global challenge of sustainability. Over the past five years the team has integrated carbon footprinting into the curriculum of computer science students who are studying project management. This unique project also enhances a range of graduate attributes.

Professor Elsje Scott Theorist, lecturer, researcher

Elsje Scott is an associate professor at the Department of Information Systems at UCT and has 30 years' experience in teaching programming and systems development project related courses at tertiary institutions. Her strengths as a citizen of the UCT community are in teaching, specifically the practice of capstone courses, comprising the integrated and interactive environments of project management, systems development, technology and people. This research led pedagogy resulted in the development of a theory of coherent practice for capstone courses as

published in her PhD study, in 2012. Her teaching philosophy revolves around a passion and a powerful relationship with students in a dynamic environment. She was nominated for a Distinguished Teacher Award at UCT as well as the IBM John W Backus Faculty award. Elsje holds a PhD in Information Systems and an MSc in Applied Mathematics (cum laude). She is the coordinator of the IS Education and Educational Technology research theme of CITANDA and her research records include 14 journal articles, 27 publications in conference proceedings and two book chapters (all peer-reviewed).

Gwamaka Mwalemba
Course convenor, researcher

Gwamaka is a lecturer in the Department of Information Systems at UCT where he has been working for almost three years. He holds a Master of Commerce in Information Systems, Bachelor of Commerce (Honours) in Information Systems as well as Bachelor of Science in Information Technology (with double major in Computer Science and Information Systems) from UCT. He is interested in the application and evolution of database systems, business intelligence and enterprise systems technologies. He is expanding his interests to the social sciences - exploring the role of education in engaging the needs of contemporary society. He is currently pursuing his PhD with a focus on contextualizing curriculum, teaching approaches and materials in the computing discipline across Africa. He has presented and published in local as well as international conferences.

Gwamaka is a key member of the Enterprise Systems Education for Africa (ESEFA) project team run in partnership with ten other flagship universities from sub-Saharan African countries, which aims to create, adopt and share context-relevant teaching materials for Enterprise Systems.

Carolyn McGibbon
Green IS lecturer, researcher

Carolyn is a doctoral candidate at the University of Cape Town and in the final stages of her PhD. Her research interests relate to Green Information Systems, with a particular focus on Higher Education. She holds a Bachelor of Science degree from the University of KwaZulu-Natal, a Higher Diploma in Higher Education (cum laude) from the Cape Peninsula University of Technology and Master of Business Administration degree from the University of KwaZulu-Natal. She has 20 years' experience in industry. Awards include Old Mutual Gold Medal for outstanding achievement on the MBA programme and top student of the year in third year MBA class. She has authored one book chapter and eight peer-reviewed papers and is a member of the UCT Environmental Management Working Group.



WINNER

Tania Hanekom

Professor Tania Hanekom graduated in 1993 as an electronic engineer and subsequently completed a masters' degree and a PhD in Engineering in 1996 and 2001 respectively, all at the University of Pretoria. She joined UP's Department of Electrical, Electronic and Computer Engineering in 1999. She is an NRF-rated researcher and is registered as a professional engineer with the Engineering Council of South Africa. Her research is in the field of biomedical engineering and is focused on computational modelling of the electrode-neural interface in cochlear implants. Specific emphasis is placed on the development of user-specific models with the objective to translate these models to clinical tools that may facilitate model-based customization of the implant. Prof Hanekom has published more than 20 articles in accredited journals, made more than 25 national and international conference contributions and delivered a number of invited lectures.

The National Teaching award was, however, predominantly made for her work in undergraduate teaching that focuses on training students in the basic skills required to succeed in the embedded design industry. Since the explosion in the digital device market during the past few decades, it has become essential to equip more engineering graduates with embedded design skills. Her teaching aims to address this need while simultaneously empowering students to excel in the embedded design industry.

Prof Hanekom believes that there is no reason why engineering education in South Africa cannot be equivalent to or better than that provided by the recognised top engineering universities in the world. While some of the challenges universities face are global, South African institutions have to deal with a number of unique challenges. Top international engineering universities skim off the cream from the global student population, while local universities must adopt a more inclusive approach that caters for a diverse student population, which is vitally

important to address the recognised shortage of engineers in South Africa.

Prof Hanekom's main teaching philosophy is that challenge is an effective strategy to develop excellence, especially in engineering students who cannot resist a contest that requires expression of their technical ingenuity with the added prospect of achievement. A second foundational philosophy is that excellence fosters excellence: if one wants to nurture excellence in students, one must offer excellence in the teaching and learning strategy - one needs to set an example that students cannot resist following.

“Challenges in teaching are not to be approached as obstacles, but rather as opportunities to stimulate innovation. Innovation, in turn, encourages excellence because innovation without excellence will yield an inferior, frustrating outcome. Providing a challenge is thus an effective tactic to develop excellence: students will invariably answer a challenge with excellence because they are enthused by the prospect of achievement. This is also true for lecturers who need to find innovative solutions to a wide variety of teaching challenges in manners that are effective and sustainable. Challenge is thus the fertile soil in which new ideas and tactics can sprout and grow.”

A few core developments in the teaching and learning strategy intended to uphold the teaching philosophy are briefly described to illustrate Tania's

approach to her teaching. The first was to tailor the module to evolve along the fast-moving embedded design industry. Since embedded design is a major career destination for electrical, electronic and computer engineering graduates, it is important that the scope of the module is structured to develop a comprehensive contemporary skill-set. The second intervention was to develop a teaching and assessment strategy along with the required infrastructure to support a hands-on approach for large classes. Infrastructure was developed at two levels: at a foundational level the laboratory capacity to seat large numbers of students at individual workstations was created by integrating a number of smaller laboratories into a super-laboratory. At a more complex level, a computerised approach to grading students' firmware code was developed and subsequently expanded into a computerised tutoring system to nurture firmware development skills. Finally, the practical component of the module was designed to provide the ultimate challenge: student teams have to develop autonomous line-following robots that compete in a race at the professionally organised end-of-semester Race Day event (<http://www.ee.up.ac.za/main/emk310/index>). Race Day provides an opportunity to undertake and complete a comprehensive engineering project from first principles, to experience the joy of achievement and to involve the industry that graduates will eventually sustain.



WINNER

Marianne McKay

Marianne McKay was persuaded to register for a Masters' degree in oenology (wine chemistry) at Stellenbosch University after graduating in chemistry and geography from UCT. The idea that learning is entrenched by struggling started with her own journey - the only English-speaker, only female, and only student not from a farming background, trying to learn winemaking. She was the first female to graduate with an MSc (Agric) in South Africa (SA) in 1990, wore the wrong colour dress to graduation, and was capped by FW De Klerk.

Unable to find a job in the wine industry in 1991, (she was told straight-out that she was too 'inexperienced, female and English'), she had her first taste of teaching demonstrating instrumental methods to third year chemistry students at UCT as a scientific officer, and teaching geography part-time to adult learners at the St Francis Adult Education Centre in Langa. The latter proved to be a very humbling experience, as the students were men and women who had started their day at 4am in Khayelitsha, worked a full day in Cape Town, and were still willing to travel to Langa in the evening for three hours of classes in order to obtain their matric certificates, before returning home to their families. These students battled with completely alien concepts like 'relative humidity' and 'geomorphology' in their second, and sometimes

third language, but the vast majority were highly motivated, and passed the subject.

Teaching oenology at Plumpton College near Brighton, UK from 2000 to 2006, Marianne observed that the students who actively engaged with the process and fought their way through icy harvests in freezing wineries had the greatest success in their studies, as they converted classroom theory into experiences. Marianne registered for and completed teacher training and a Post Graduate Certificate in Education in 2004. On her return to SA in 2007, she was accepted as a lecturer in oenology at the Department of Viticulture and Oenology at Stellenbosch University. She has made a great many changes to the Oenology modules, implementing Service Learning and

being very involved in the development of a full harvest (six month internship) in the undergraduate programme. Getting learners out of their comfort zones (a nice, passive lecture) and into wineries, tasting rooms, and vineyards in industry (uncomfortably engaged) is a big focus of her teaching practice. Enhancing the relevance of taught material and the employability and professionalism of graduates is an added benefit of this process. She also very much enjoys engaging with community partners (the Pinotage Youth Development Academy), and trying to make fairly complex concepts in science as practical and easy to understand as possible through engaging activities.

“Vines that struggle a little produce the best wine. Grapevines are unlike other crops where sun, water and fertiliser are maximised to give the highest possible yield of nondescript product. The goal of wine producers is to grow fruit that best expresses its terroir, and to do that, the vine needs to work hard to overcome the harshness of the environment, and make the best use of limited nutrients and water. During this process, flavour is developed and concentrated, which translates to wonderful wine. So it is with learners (if I may be forgiven for the analogy). A student who is pushed out of their comfort zone to engage fully with a concept, who has to adapt and restructure their thinking and behaviour, will distil the essence of their learning in a different way, and will be shaped by the experience.

A carefully devised curriculum that challenges students should produce a ‘good blend’ of attributes in well-rounded individuals who have unique knowledge structures, excellent abilities to confront and solve problems, and empathy for the struggles and challenges others around them face.”

Marianne is still tussling with concepts and understanding in educational theory, and engaging uncomfortably with her PhD. The wine industry and Higher Education in South Africa face uneasy challenges in the years ahead, and addressing these through raising them, and engaging students to confront them head-on is one of her teaching ambitions.



WINNER

Andri Prozesky

Andri Prozesky is a lecturer of astronomy and applied mathematics in the College of Science, Technology and Engineering at the University of South Africa. She graduated with her Bachelor degree in physics in 2008 from the University of Pretoria. After that she continued at the University of South Africa to further her studies in astrophysics. Andri was accepted into the South African Square Kilometre Array Project Postgraduate Scholarship Programme and obtained a Masters' degree cum laude in 2012.

She is currently pursuing her Doctoral degree in astrophysics. Her research focuses on the atomic physics that occur within enormous clouds of gas and dust between the stars, which are called photoionized nebulae. The physical conditions within these structures are extreme and the rules that govern them are quite different from what we find in laboratories on Earth. Studying what is happening on atomic scales within these nebulae not only gives us a better understanding of them, but it also gives insight on how stars, galaxies and the entire Universe evolve.

Having been a student in both the contact and distance modes, she recognises the additional barriers that Unisa students must overcome to be successful graduates. Unisa offers access to so many students who would otherwise not have had the opportunity

to study at a tertiary level. She believes that this is especially important in the South African context, where education can be a powerful tool in fighting social inequality.

Andri has been teaching at Unisa in the distance education environment since 2009. She believes that teaching does not entail the simple transfer of knowledge, but the facilitation of a process where students take responsibility for their learning and actively engage in the challenge. Her view is that motivating students to become invested in and excited about their studies are central to student success. Learning in the distance mode can be a very isolating experience and it is imperative to get students to claim ownership for their studies and their identity as tertiary students.

The use of digital technology has become central to most distance learning experiences and makes the distance mode an exciting space to teach in. Virtual learning environments, various interactive resources and the internet in general have contributed enormously to the distance learner experience. Andri utilizes technologies to achieve various pedagogical aims and to enrich her students' learning experience.

“Knowledge is not the commodity that a tertiary institution is offering any more. Anyone can easily and cheaply gain access to the information covered in most undergraduate courses. The critical aspect that lecturers in structured courses provide is the support and tools for students to navigate through the sea of information available to them to construct meaning.”

Andri is actively involved in the Unisa Astronomy Outreach Programme that aims to create science awareness in communities, inspire school learners to become interested in science and ultimately to pursue careers in science and technology. She believes that science awareness and science education are essential in a democratic

society, since democracy and science are built on the same foundations such as critical scrutiny, open debate and evidence-based decision making.

She has presented her research and teaching practices at various conferences and has won awards for best student presentations at Master and Doctoral levels. She was selected for the 2014 Mail and Guardian's Science Voices initiative, where postgraduate students worked with journalists to write an article about their research for a non-academic audience to promote public science communication. In 2014 she was awarded the Unisa Excellence in Tuition Award in recognition of her innovations in her first year astronomy module.



WINNER

Michael Savage

Professor Michael J Savage is a senior professor in Agrometeorology, a University Fellow and a Distinguished Teacher at the University of KwaZulu-Natal. His service to the University started in 1975 as a junior lecturer. He has been Acting Dean, Assistant Dean, Acting DVC (Research and Knowledge Systems), Acting Head and Head of Department and Head of three Schools. For his research, he has received one international and four national awards. The focus of his research has been in agrometeorology, environmental biophysics, environmental plant sciences, soil physics, and more recently research and teaching on visual literacy. In 2010, he was awarded the DScAgric (senior doctorate) by UKZN for research over an extended period on sensible heat flux for estimating evaporation. The award was the first award in the history of UKZN.

In early 2011, he focussed on exploring ways of making lecturing content more alive, appealing and comprehensible to students, particularly those whose first language was not English. He developed an open web-based teaching, learning and research system for near real-time agrometeorological and environmental applications, mobile-learning, and visual literacy. He has explored ways of displaying the invisible things of the agro-environment such as air temperature and relative humidity, and depicting them in graphs and as icons - that transcend language. He submitted the work for an MScAgric which was

awarded *cum laude* in April 2014 - when he was 61! He received a UKZN Distinguished Teachers' award for 2014. A medal and diploma was awarded in 2015 by the South African Society for Atmospheric Sciences. This was their highest and first award, given to an individual whether member or non-member, in recognition of his research and educational achievements in agrometeorology.

His educational philosophy is that teaching and learning, including research on teaching and learning, involves his understanding the problems that students have in

understanding the subject matter of agrometeorology. An empathetic approach. Overarching his philosophy specifically on teaching and learning are several key thrusts, which stem from his philosophy. His philosophy includes understanding the students' learning difficulties. His philosophy also involves engaging directly with the students, especially during the lectures and practicals and small-group sessions, about what they know, have been taught and have learned, again making use of everyday agro-environmental experiences. He makes his undergraduate projects link to postgraduate/staff research and vice versa with an emphasis on data and graphic examination.

“It is not a case of me trying to get the student to my level but of me getting to their level. My philosophy is that once there has been sufficient knowledge (teaching) and skills transfer (learning) to the students, their knowledge and skill has to be applied (research) as soon as possible through practicals and the projects. I use technology in my teaching. Without it, in terms of education, how will Africa ever bootstrap itself from its past, and educational and other challenges it has?”

In cases where that link did not exist, undergraduate projects that had the potential to be expanded to postgraduate research topics were offered to new postgraduates or used for staff research. And, postgraduate projects were used to spawn undergraduate projects. He has continually striven to engage with the community about adverse weather through local and national radio and print media. He believes that there is an urgent need to create a list of isiZulu technical terms specific to Agrometeorology but also allied disciplines: atmospheric sciences, soil sciences, plant sciences. And not only glossaries for University students but glossaries and/or picture books for junior and middle-school scholars. Is the effort worth it? Are there any other alternatives out there?



COMMENDATION

Ansie Fouché

Dr Ansie Fouché is a registered social worker since 1993. She established the Social Work subject group on the Vaal Triangle Campus of the North-West University in 2008 and was appointed as a senior lecturer in 2009.

She acted as subject head until February 2013. Ansie's research interests include: prevention of child sexual abuse; forensic social work, the rights of victims of child sexual abuse in the criminal justice system and strengths-based interventions. She is involved in a number of intervention research and participatory action research projects. Furthermore, she is also a collaborator in the World University Network (WUN) 'Resilience in Service Providers in Public Health Project' Studies Working Group.

Ansie's teaching philosophy is founded primarily on the social constructivism teaching approach with a strong emphasis on authentic learning and the incorporation of blended learning activities. Students are, thus, in essence, actively involved in that the knowledge they receive is shaped by experience, peers, and their interpretation of the world. Furthermore, in addition to the

above, her teaching philosophy also focuses on the instilling of values in students, as the establishing of a "society based on democratic values, social justice, and fundamental human rights", is especially important in the field of Social Work.

COMMENDATION

Delawir Kahn



Professor Delawir Kahn is Head of the Department of Surgery at the University of Cape Town and Groote Schuur Hospital. He is a General Surgeon with a sub-specialist interest in Liver and Kidney Transplantation. His research has been in the area of liver disease and transplantation and he has over 270 publications in peer reviewed journal.

His formal teaching commitments include lectures and tutorials to undergraduate medical students, and the training of postgraduate surgical registrars in the wards and in the operating theatre. Over and above this, he has been involved in several informal teaching commitments. He regularly takes first and second year medical students into the Trauma Unit on Friday nights, as well as into the Operating Theatre where he facilitates their assisting with various surgical operations. This is obviously a source of enormous excitement for the students who are still in their pre-clinical years.

He is the patron of the University of Cape Town Student Surgical Society, a

society run by medical students to promote the interest in Surgery. It was established in 2006 and is now the second largest society in the University with over 600 members.

Professor Kahn is a past president of the College of Surgeons of South Africa, and is currently a moderator for the College examinations. He has been an external examiner at East and West African Colleges, as well as at all the medical schools in South Africa.

Surgeons are passionate about the work that they do, and there is no doubt that this has a very positive effect on the overall student experience. The feedback from students after their Surgery rotations is usually very positive.

Professor Kahn believes that every encounter with a student, whether it is in the classroom, in the ward or in the operating theatre, is an extremely important and valuable event, and should not be wasted. The main objective should be to convey knowledge, in a manner that is effective, efficient and simple. Above all, the experience should be enjoyable.



COMMENDATION

Njabulo Gumede

Njabulo Gumede was born in Gamalakhe Township which is next to Port-Shepstone, in the Lower South Coast of KwaZulu Natal.

He matriculated at Galeni High School in 2001, he further pursued his tertiary qualification at Durban University of Technology in 2002. He graduated for his National Diploma in Analytical Chemistry in 2005. He then further pursued his studies in Chemistry and graduated for his Bachelor of Technology Degree in 2006. He further registered for his Master of Technology Degree in 2007 and graduated with Cum Laude in 2008. He is currently a Senior Lecturer in the department of chemistry at MUT. He started teaching at MUT as a contract lecturer in 2009, where he was an Extended Curriculum Programme lecturer.

In 2010, Njabulo was employed permanently in the department of chemistry, as an organic chemistry lecturer. He strives to balance his research with his teaching; this was evident when he received a Gold award for a best emerging teacher at MUT in 2015. He was also a runner up in the most productive novice researcher

award at MUT in 2012. He is currently a PhD candidate at DUT, and aims to graduate in April 2016 as he has completed his studies. He is currently awaiting the registration of his provisional patent for his research work in order to submit his doctoral thesis. He further wishes to contribute in science by publishing his work in scholarly journals.

“My teaching philosophy is more students centred as I strive to instil passion and desire for students in my class to become life-long and independent learners which will in turn assist in their acquisition of new learning and study skills. My view to teaching is more premised on the academic literacy approach, where I induct my students into new ways of knowing in my discipline. The scientific knowledge imparted to my students is

transformative as it enables students to reach objectives beyond what they considered possible when they first enrol for the course after they have graduated”.

Njabulo's teaching philosophy is not restricted to only one learning theory because of the diversity of students in his class and the requirements of MUT institutional policies. His teaching philosophy is more premised on the cognitive constructivism learning and situated learning theories. Njabulo has developed learning materials that are used to induct his students into ways of knowing in his discipline. His learning materials are structured such that they follow a spiral form of teaching. He believes that in order to give students new knowledge he has to start from what they already know. He also believes that reflective feedback needs to be given in action and on action.

The type of graduate that Njabulo and the entire MUT community aspire to develop should possess the following attributes:

- Be able to adapt to different environments
- Be innovative
- Be able to apply knowledge to solve real-world problems

- Have a high command in disciplinary knowledge and its application
- Be able to communicate effectively
- Be employable and entrepreneurial.

Apart from teaching and research, Njabulo spends his quality time watching movies, playing or watching soccer and also singing in the church choir. He also likes travelling a lot, he always says that being a scout in primary school invoked the love for outdoors and nature. He also takes care of his mother who is suffering from meningitis at home and no longer works.



COMMENDATION

Aneshkumar Maharaj

Dr Aneshkumar Maharaj taught senior secondary mathematics in South Africa from 1983 to 1991.

He trained mathematics teachers for both the secondary and primary school levels at Springfield College of Education and South African College for Open Learning, from 1992 to 2002. He served as an examiner for mathematics and additional mathematics at the senior certificate level.

In 2013 he was appointed senior mathematics tutor in the School of Mathematical Sciences at the University of Natal, Howard College Campus. During the past few years he was invited to present papers at international conferences and congresses. As an associate member of the Multiversity Consortium he was invited to and attended the following HP Global Catalyst Education Summits: 2011 held in New Delhi, India; 2012 Beijing, China; 2013 Sao Paulo, Brazil. In November 2011 he was invited to Orlando USA to attend the Sloan Consortium Conference on online learning and for meetings of the HP Multiversity Consortium. Currently he heads the University of KwaZulu-Natal (UKZN)

Mathematics Education Research Group, which comprises of researchers from the different campuses of the university. He was promoted to senior lecturer at UKZN as from 2015 and awarded one of the two Distinguished Teacher Awards at UKZN for 2014. In December 2014 he was appointed Academic Leader for Teaching and Learning for the School of Mathematics, Statistics and Computer Science at UKZN. His teaching approach is informed by reflection and research.

One should teach the students one has, not the students one imagines one has.

His research interest focuses on the teaching and learning of mathematics concepts using APOS Theory. The mental structures of action, process, object, and schema constitute the acronym APOS. APOS Theory and its application to teaching practice are based on two general hypotheses on mathematics and learning developed to understand the ideas of Jean Piaget. The main mental mechanisms for

building the mental structures of action, process, object, and schema are called interiorization and encapsulation. APOS theory postulates that a mathematical concept develops as one tries to transform existing physical or mental objects. Explanations offered by an APOS analysis are limited to descriptions of the thinking which an individual might be capable of. With this in mind Dr Maharaj spends much time on the preparation of learning experiences for his students. He believes in proper planning and then implementation so that all his students benefit.

Dr Maharaj's current focus includes reflection on the use of APOS theory to inform teaching and assessment, including the use of online diagnostics to foster student learning of university

mathematics. He also researches the use of technology to promote the teaching and learning of mathematics. These include exploiting the use of PC tablets and the development of online materials and assessment tasks. Currently he heads at UKZN the project *Online diagnostics for undergraduate mathematics*, funded for the period 2014 to 2016 by the National Research Foundation of South Africa. He has (co)authored a number of research papers which were published in both local and international accredited journals.



COMMENDATION

Lara Ragpot

Professor Lara Ragpot is an associate professor in the Department of Childhood Education at the University of Johannesburg.

As a registered educational psychologist she supervises all childhood development modules in the UJ Soweto and APK education programmes. Her main focus in the modules she teaches is on childhood cognitive development, neuroscience and the study of learning in the classroom and the lecture hall. She has published in the fields of social issues in education, childhood cognitive development, early mathematical cognition, and the interface of neuroscience, psychology and pedagogy. In collaboration with staff, students and professional actors she has conducted a significant study on the conceptual development of maths knowledge in children and produced a film series, *#TaxiMaths* - how children make their worlds mathematical, which is used both locally and internationally in teacher education. Prof Ragpot is one of the main investigators launching the "UJ CEPR Cognition Lab", which focuses on the research of young

children's conceptual development to inform education.

Using the work of Vygotsky, Lara believes that learning happens when students are active, when they learn by doing, that teachers should ensure that they have the opportunity to start from many different points and that a variety of learning tools increases opportunities for all. She emphasises the importance of multi-modal, flexible teaching with the teacher functioning as a bridge as the learning progresses but at the same time points out that it is important for students to have an explicit, supportive structure. Lara's assessment practices reflect these central beliefs. They include take-home exams and group play productions, and because they are so innovative Lara tells us that "they make it impossible for students to copy, rote learn or plagiarise". In order to support her learners Lara integrates collages, drama, dance, film and art into her teaching. Her research, which complements this, includes studies on the relationship between constructivist approaches and indigenous knowledge systems and the role of drama and art to assess student learning.

COMMENDATION

Professor James Swart



Professor James Swart left Grey College in 1988 and obtained a National Senior Certificate from the Bloemfontein Technical College in 1989.

The following year, he joined Telkom SA as an apprentice technician and completed a N6 National Diploma in Electrical Engineering. Then, in 1995, James accepted a technician post at the Vaal Triangle Technikon (now VUT) and spent the next 6 years working in different telecommunication laboratories.

James started lecturing in 2001 and was awarded the Rector's Award for Teaching Excellence in 2008 (from VUT). Having completed an MEd in 2007 and a DTech in 2011 at VUT, James moved to UNISA as an Associate Professor. He is currently the principal research leader for a Research Group in Engineering Education at CUT.

James has more than 80 research articles, papers and book chapters in the fields of electrical engineering and engineering education, which contributed to him achieving a NRF rating in 2015. His current research

interests include fusing theory with practice in different engineering laboratories and the application of PV modules within different environments.

"I believe that learning is a lifelong journey. It starts at an early age when young toddlers ask why and ends on the deathbed when family members ask why? Answers to many of life's BIG questions can be found in a number of books. However, finding the RIGHT answers often requires the assistance and support from those who have already been enlightened! The relationship between any academic and student is therefore a important key to success. It is dependent upon honesty, trust, accessibility, commitment, respect, transparency and kindness, all of which must be initiated and displayed by the academic. However, ENTHUSIASM within the field of expertise must be foremost to engender good teaching. I further try to encourage and commend my students, seeking to remain engaged with them in a professional and dignified manner. The opportunity to facilitate learning is as much a gift as learning itself."

EVALUATION PANEL



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