

Special Projects

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NATIONAL SCIENCE AND
TECHNOLOGY FORUM AWARDS

The 12th NSTF Awards: Today's research needs lead to tomorrow's innovation

Professor Pat G Eriksson, Professor and Head:
Department of Geology, University of Pretoria
and Naledi Pandor, Minister of Science &
Technology.



THE 12TH National Science and Technology Forum (NSTF) Awards, presented this week by Minister of Science & Technology, Naledi Pandor, honoured people and projects of major significance to South Africa, and the 14 awards were for projects as diverse as fynbos preservation, Precambrian sedimentation patterns and an application that makes payment via cell phones easy.

The awards are the flagship project of the largest and most prominent multi-stakeholder representative forum for Science, Engineering, Technology and Innovation (SETI) in South Africa. They represent a collaborative effort by the SETI community of South Africa, made possible by the participation and sponsorship of a variety of stakeholders.

The event is unique in that it affords an opportunity for recognition to all practising scientists, engineers, technologists and innovators across the system of innovation.

Not only researchers, but also individuals who have contributed to the promotion of science, engineering and technology (SET) in other ways are honoured.

Teams who have developed innovations through organisations and institutions, individuals who have played a valuable mentorship role for young researchers, and science communicators for public awareness are recognised.

At the Awards Gala Dinner, teachers, schools, students and learners who excelled in the mathematics, science, and technology field were also acknowledged.

Says chief adjudicator, Denis Hunt: "The scientists, engineers

and technologists in South Africa who were nominated have all made contributions to improving the quality of life for current and future generations and demonstrate through their efforts that we can stand alongside the best in the world and feel pride in our achievements.

"It can be disappointing for those who don't get an award, but we recognise all finalists as being potential winners and they can claim that recognition."

"South Africans are no by-standers on the world stage and the opportunities presented by our environment and society are unique and there to be grasped. That challenge needs to be emphasised to all and we believe that this event helps to do that."

"Notwithstanding this, we need to make the most of every discovery. Today's research needs to lead to tomorrow's innovation and this guides our decision making".

He adds that the signifi-

cance, importance and relevance of the finalists' contributions go way beyond their individual achievements.

This is because technology innovation, infrastructure creation and research affect economic growth, without which poverty alleviation and development would remain a dream in South Africa.

Winners in the respective categories are:

In the category 'Individual over a lifetime' this year two winners were announced. These were:

● Professor Pat G Eriksson, Professor and Head: Department of Geology, University of Pretoria, for founding and leading a diverse and highly experienced international research group, the Global Precambrian Sedimentation Syndicate (GPSS), studying all facets of the Precambrian sedimentary rock record and the history of the Earth prior to ca. 600 million years ago; and,

● Dr Brian van Wilgen, Chief Ecologist: Council for Scientific and Industrial Research, for a lifetime contribution to the improvement of natural ecosystem management policies and practices.

The award for 'Research and its outputs over the last five to ten years or less' went to Professor Maureen Coetzee, SARChI Professor in Medical Entomology and Vector Control, University of the Witwatersrand, and Director: Malaria Entomology Research Unit, National Institute for Communicable Diseases, Johannesburg, for her substantial contribution to the understanding and control of malaria in Africa.

The OSCAR4 Team, South African Nuclear Energy Corporation (Necsa), Pelindaba received the award in the category for 'Innovation developed through a corporate organisation or institution'. Its reactor calculational software system

provides fast and accurate nuclear reactor simulations with unparalleled efficiency.

The award in the category 'Innovation developed through an SME' went to David Reynolds, POCIT Division, Tradebridge Pty Ltd, Johannesburg for his lead role in the POCIT solution: a mobile payment application that is revolutionising the way people and merchants pay and receive money in South Africa and has the potential to transform the lives of those who have not been able to make use of the banking system before.

The award for 'Innovation developed through an NGO or Not-for Profit Organisation or Community Based Organisation' went to the Centre of Materials and Process Synthesis Team, University of the Witwatersrand.

Its unique chemical process design allows Africa to lead the way through pilot plants in China and Australia, solving

three problems with one groundbreaking approach, for example, in oil and food from waste.

Professor M E Christine Rey, Professor of Microbiology: School of Molecular and Cell Biology, University of the Witwatersrand is the female recipient of the Eskom sponsored Award: 'Researcher, for Research Capacity Development over the past five to 10 years'.

She has mentored eight black MSc students (with nine current) and five black PhD students (with three current) over the past decade, and 82 post-graduate students over her 25 year career, from both South Africa and many other sub-Saharan African countries.

Professor Dinesh Ramjunge, Professor: SARChI Fluorine Process Engineering and Separation Technology and Professor: Chemical Engineering, University of KwaZulu-Natal is the male recipient of the Eskom sponsored Award: 'Researcher,

for Research Capacity Development over the last 5-10 years'.

This is for a substantial contribution to the development of research capacity in the field of thermodynamics research.

The NRF Sponsored T W Kamble Award for a 'Senior Black male Researcher over the last 5 to 10 years' was made to Professor Oluwole Daniel Makinde, Senior Professor: Chair of Post-Graduate Studies, Faculty of Engineering, Cape Peninsula University of Technology.

This was for his success in research in mathematical modelling and computation as well as research capacity development in challenging environments.

The NRF Sponsored T W Kamble Award for a 'Senior Black female Researcher over the past five to 10 years' went to Professor Debra Meyer, Professor of Biochemistry, University of Pretoria for a contribution through research to

developing novel HIV treatment and prognostic markers and vaccine components.

The NRF sponsored T W Kamble award for a 'Distinguished Young Black male Researcher over the last 2 to 5 years' was made to Professor Fulhelo V Nelwamondo, Senior Research Scientist and Research Group Leader (Competency Area: Information Security) Council for Scientific and Industrial Research, Pretoria; Post-doctoral Fellow, Harvard University, USA.

This was for a contribution to the solution of the problem of missing data estimation in online control applications.

The NRF sponsored T W Kamble award for a 'Distinguished Young Black female Researcher over the last 2 to 5 years' was made to Dr Rapela Regina Maphanga, Materials Modelling Centre, University of Limpopo.

It acknowledged her contribution to the computational modelling of materials particularly for electrolytic manganese dioxide.

In the SAASTA sponsored 'Science Communicator for Public Awareness category, two winners were announced. These were:

● Mr Robert Inglis, Director: Jive Media for the Maloti Drakensberg Experience, and for the Mission MeerKAT Comic Series, Pietermaritzburg, KwaZulu-Natal for a contribution to the development of the discipline of science communication through innovative and exciting media.

● Mr David Kramer, Director and his team at Sci-Bono Discovery Centre, Johannesburg, for a substantial contribution to the communication of science in innovative ways to a wide audience.

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Payment via cellphone becomes a breeze

It was a proud moment for POCIT's managing director Dave Reynolds when he accepted the award for research for innovation by an individual or a team through a SME organisation.

It was an equally important milestone for the country's cell phone users and national economy alike.

Pocit, a division of the Tradebridge group, has developed an advanced cellphone-based payment solution and Reynolds explains, "It is poised to revolutionise the way in which transactions take place. Importantly, as it drives the increased flow of money, it will drive prosperity."

He elaborates that for many people making payments is currently an expensive, inconvenient and sometimes dangerous exercise.

If you don't have access to sophisticated banking products like internet banking, the simple payment of accounts becomes a complex logistical and costly exercise.

Therefore systems and services that offer payment power to South Africans, make an ac-

tive contribution towards economic empowerment.

The mobile technology reduces the cost of sending money across the country. A cash business now becomes more profitable because it can accept credit card and bank payments via POCIT instead of turning customers away.

In alliance with Mercantile Bank, it is the fastest growing mobile payments platform in South Africa, with more than 100 000 users. Consumers can now buy airtime, pay traffic fines, pay clothing accounts and a range of utilities bills.

He predicts significant growth this year in municipal payments, retail accounts and money transfers.

POCIT is already making an impact on trading communities, he adds, "One user is using the application to sell airtime to all the taxi drivers and passing trade in her community."

While she enjoys an alternative income her customers have a convenient way of topping up.

"Another example is a car washing business made more profitable because it can now

accept credit card and bank payments. Turnover is up because customers don't need to have cash on them."

The cellphone solution is also revolutionising the way merchant bills are presented and paid, making it easier for individuals to consolidate and settle their monthly accounts.

POCIT works on every mobile network and with every bank in the country. Payments can be made from any bank account or Visa and MasterCard credit or cheque card. For those who do not have a bank account, payments can be made from a POCIT Money account.

Reynders assures that it is also completely secure to transact. "Every time a person uses POCIT a match is made between the cellphone, cellphone number and the unique pin."

"This is as close to 'person present' transaction as one can get on a remote device."

The md says of the prestigious NSTF award, "It felt amazing to win. The award acknowledges some of the great work that we have done at POCIT and reinforces our credibility

I'm very proud that home brewed innovation has been acknowledged like this".

It was he who identified the market opportunity and, after extensive product development and market research, launched the company nearly two years ago and is viewed as part of a new generation of executives at holding company Tradebridge. He later looks at ways to facilitate information flow in given industries. One of the fastest growing information technology groups in the country is listed as one of South Africa's Top Performing Companies.

Reynders has a clear goal in mind, which is "to revolutionise the way payments are made in South Africa, giving everyone the opportunity to transact cheaply and conveniently anywhere, anytime."

Putting his money where is mouth the mountain biking enthusiast recently raised more than R100 for the Wildlands Conservation Trust, by getting his friends and colleagues to donate via POCIT.

Nelson Mandela Metropolitan University

First for Africa

Be part of a new generation of scientists at Nelson Mandela Metropolitan University where the study of small things means big business.

The Port Elizabeth university is set to become home to Africa's only ultra-high resolution transmission electron microscope enabling scientists to analyse materials at atomic level. The new centre means South Africa can now compete against the world's best.

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Challenging concepts like "Snowball Earth"

THE 'Snowball Earth' theory and the "Great Oxidation" theory are both events that are said to have changed earth profoundly but there's an award winning professor at the University of Pretoria whose work challenges long held concepts.

Professor Pat G Eriksson, Professor and Head: Department of Geology, University of Pretoria, believes they are an oversimplification of a much more complex and multi-faceted early earth system.

Snowball Earth refers to the hypothesis that Earth's surface became nearly or entirely frozen over at least once during three periods between 650 and 750 million years ago. The geological community generally accepts this hypothesis because it best explains sedimentary deposits generally regarded as of glacial origin.

The second relates to one of the most important changes to have happened to the Earth's atmosphere and it was the reason why today we can breathe life-giving oxygen.

This week Eriksson was awarded the prestigious NSTF award, a diverse and highly experienced international research group, the Global Precambrian Sedimentation Syndicate.

It is studying all facets of the Precambrian sedimentary rock record and the history of the Earth prior to ca. 600 million years ago.

His major personal contribution encompasses defining the basic principles relating to Precambrian sedimentation patterns vis-à-vis those from the younger sedimentary record.

His research demonstrates that it is the rates and intensities of the processes that have changed over geological time and that the major first-order controls on all sedimentation involve the interaction of many of the small-scale processes and plate tectonics. Both are subject to chronological change.

He has also investigated the relationship between the concept of the mean height of continents above mean sea level and sea level changes, Precambrian sedimentary basin evolution and Precambrian basin dynamics in general by applying the sequence paradigm to the sedimentary and basin evolutionary record.

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INTERNATIONALLY-recognised research-intensive universities are not a luxury but a necessity. This is according to Prof. Belinda Bozzoli, Deputy Vice-Chancellor. Research at the University of the Witwatersrand, Johannesburg.

"Research-intensive universities, such as Wits, have a responsibility to produce graduates at the highest levels. This means they provide society with the most adept, capable and thoughtful citizens and leaders.

"They are able to develop and sustain the kinds of imaginative and innovative research which make it possible to survive in the post-colonial and post-industrial world and to advise on the promotion of sustainable social and economic development.

"This, she adds, is especially as we inconspicuously seek to compete globally. "We are proud

of our hugely talented scientists who, as outstanding researchers, participate in internationally recognised work at the very highest levels."

The vice-chancellor says this speaks clearly to the university's long-standing reputation in academic and research excellence, something that should be measured by international standards.

She reveals that Wits is one of the only two universities in Africa ranked in two separate international rankings as a leading institution in the world.

According to the 2007 ISI international rankings, Wits is also the only university in the country that features in the top one percent in the world in seven defined fields of research. It also receives the highest level of external financial support of all universities in the country. The monies come from donors and partners all over the world.

Research intensive universities are a necessity

Prof. Belinda Bozzoli, Deputy Vice-Chancellor of the University of the Witwatersrand.



"This is testimony to the high esteem in which we are held internationally," she says.

Three distinguished female scientists from Wits, all with substantial international reputations, won awards in their respective categories in the 2010 National Science and Technology Forum Awards.

Prof. Christine Rey currently spending her sabbatical in Zurich, and former Head of the Wits School of Molecular and Cell Biology, was lauded for her contribution to research capac-

ity development over the past five-10 years. Her research encompasses the field of plant pathology which includes plant virology and the genetic engineering of pathogen-resistant plants. Rey also explores virus phylogeny and virus detection systems and diagnosis.

Prof. Diane Hildebrandt, South African Research Chair of Sustainable Process Engineering and co-director of the Centre for Material Process Synthesis, walked away with the NSTF award for leading an interna-

national team in conducting innovative research in sustainable process engineering. She was co-winner of the 2009 African Union Scientific Awards and winner of the 2009 Woman Scientist of the Year award.

She says "I believe that it is vitally important for Africa that we have highly trained engineers and scientists so that they can develop and drive industry in Africa. If we train engineers and scientists who can look at novel technical solutions that are suitable and applicable for

Africa, we can develop industry, grow wealth and benefit the poorest on our continent. My team and I are committed to this development both in South Africa and beyond."

Hildebrandt and her team have made significant advances in the way that chemical processes can be designed - their work is in demand on three continents. "This has the potential to have an extraordinary impact on the energy efficiency and carbon dioxide emissions from chemical and fuel manufactur-

ing plants," she explains.

In this era of climate change and diminishing fossil fuel resources this is a contribution that cannot be overestimated and the way we have done this has the potential to have a large impact for developing countries, and Africa in particular."

For her contribution to the fight against malaria, Prof. Maureen Coetzee, Head of the Wits Malaria Entomology Research Unit and South African Research Chair in Medical Entomology and Vector Control, won in the research and its outputs category. Between 300 and 500 million malaria cases are reported worldwide every year and an estimated one million people die annually as a result of the disease. She is currently spending time at the World Health Organisation in Geneva.

"We inhabit a global context

characterised more sharply than ever before by unpredictability, the proliferation of risk, the emergence of complex problems and the unreliability of social institutions to regulate our world sufficiently," says Bozzoli. "It is clear that highly specialised forms of knowledge, combined in novel ways, are needed to anticipate our emergent world and to quickly understand and respond with nimbleness.

"With our 15 South African research chairs, seven research institutes, 20 research units, 10 research groups, three Centres of Excellence and 200 plus rated scientists, we are committed to producing research that is relevant, challenging and innovative. Our researchers are at the frontiers of generating knowledge that will not only benefit us today but that will leave a lasting legacy for future generations," she concludes.

Reaching out to the wider world

PROF Thahidzi Marwala, a finalist in this year's NSTF Awards line up, is involved well beyond the academic boundaries of the University of Johannesburg. The Executive Dean of the Faculty of Engineering and the Built Environment has contributed significantly to the country as a whole through his applied research and his training and supervision of students subsequently employed in this sector.

A typical example of someone who pushes the boundaries of discovery and progress in science and technology he was honoured last year by Microsoft Research, in partnership with TWAS, the Academy of Science for the Developing World, and the African Academy of Sciences with an Award for Young Scientists. This prestigious award is made to scientists under 40 years of age who have made outstanding contributions

in scientific research within developing countries.

This award reflects Prof Marwala's creative contributions towards the development and continuous expansion of research in the application of computational intelligence to engineering, computer science, social science and medicine. Each of these contributions have played a significant part in the advancement of science and have been to the benefit of the country.

Says Marwala about his field of research: "At the heart of human and structural health monitoring are the extensive uses of computers. One application for this technology is in image processing where a computer, making use of a camera, is used to detect a crack in a bottle, bridges, buildings and even in machines. It is central to the safety of people who use, or come into close proximity of,

such objects and structures.

"In structural health monitoring, advanced dynamic methods are used to deconstruct the information from the structures and artificial intelligence is used as a brain that transforms the measured data into useful information. Image processing can also be used to diagnose diseases.

"An x-ray image of a patient's lung can be scanned and the image processing system can be used to determine if the patient is suffering from a pulmonary embolism or a blockage of the lungs.

"Having taken the leap of turning an engineering application developed for the manufacturing environment to healthcare uses, the research expanded its functionality to diagnose other diseases and injuries and can even be used to assist with the treatment of patients needing radiation

therapy."

Previously a full Professor of Electrical Engineering, the Carl and Emily Fuchs Chair of Systems and Control Engineering, and the DST/NRF South Africa Research Chair of Systems Engineering at the University of Witwatersrand, Prof Marwala was the youngest recipient of the Order of Mapungubwe.

He was also the first African engineer to be awarded the President Award by the National Research Foundation of South Africa.

He holds a Bachelor of Science in Mechanical Engineering (magna cum laude) from Case Western Reserve University, a Master of Engineering from the University of Pretoria, a PhD in Engineering from the University of Cambridge and has successfully completed a Programme for Leadership Development at Harvard Business School.

'Early' should be this award winner's middle name

HE was only 26 when appointed as acting manager of CSIR Modelling and Digital Sciences' information security competency area last year - and this at an age when many researchers are still cutting their proverbial (scientific) teeth. Now he leads the biometric research group as a senior research scientist.

He is now the recipient of the NRF sponsored T W Kambule award for a 'Distinguished Young Black male Researcher over the last 2-5 years'.

Professor Puluhelelo V Nelwamondo, Senior Research Scientist and Research Group Leader (Competency Area: Information Security): Council for Scientific and Industrial Research, Pretoria; Post-doctoral Fellow, Harvard University, USA, was recognised for his contribution to the

solution of the problem of missing data estimation in online control applications.

His résumé reads like a good Hollywood movie script. This Venda-born scientist holds a BSc and a PhD in Electrical Engineering in the area of Computational Intelligence from Wits University.

He started entering science expos in standard six (now grade eight) and his first entry was on investigating earthquakes and the design of early warning systems. "I have always been passionate about exploring early warning detection and to develop systems that can warn people in time," he says.

'Early' seems to typify him, as he is already a visiting professor of electrical engineering at the University of Johannesburg.

Nelwamondo has successfully co-supervised four Master's degrees in electrical engineering and is currently supervising a number of PhDs at the University of Johannesburg.

He has research and practical experience in software engineering and in computational intelligence in various applications and has interests in exciting and emerging areas of software application, including biometrics-based systems, data mining, modelling of complex systems using machine learning tools and mechanism design.

Nelwamondo was a post-doctoral fellow of the Graduate School of Arts and Sciences at Harvard University and the youngest South African ever to receive the Harvard-South Africa fellowship. True to his enterprising nature, he lays claim to many national and international research accolades, from organisations such as the Institute of Electrical and Electronics Engineers and the South African Institute of Electrical Engineers, among others. In 2009, he was a finalist for the National Science and Technology Forum award in the category of Distinguished Young Black Researcher.

Somewhat of a globe-trotter, he has presented his work in various countries such as South Africa, the Czech Republic, Canada, Hungary, England, Taiwan, China and the United States of America, to name a few. And, having grown up in the rural area of Lwamondo in the depths of Venda, he believes in giving back to the community.

Science of small things presents huge opportunities for University and SA

THE eminent arrival of a state-of-the-art, Japanese-made electron microscope at Nelson Mandela Metropolitan University in Port Elizabeth will allow scientists to see atoms for the first time in South Africa and enable them to compete with the world's best. It is one of just 15 on order in the world.

The sod-turning for the building to house the R80m suite of microscopes on 24 May will also begin to realise the personal dream of Prof Neethling who has fought for two decades for this country to acquire a high-resolution transmission electron microscope.

"The acquisition means the university will further raise its status as the country's leading academic institution in the field of nanoscience and electron microscopy, where materials are analysed at minuscule levels.

"This facility is required to not only lead the way in cutting-edge research but also to train highly-specialised electron microscopists for South Africa," says Neethling.

As a result, budding young scientists are encouraged to take advantage of the new facilities and bursaries available to join the professor and his growing team of experts.

The microscope and related equipment, approved by the National Research Foundation and the Department of Science and Technology (DST), will be housed in the R30.5-million Centre for High-Resolution Transmission Electron Microscopy, to be completed by mid-2011.

Prof Neethling, who is also president of the Microscopy Society of Southern Africa, adds: "This microscope enables us to take the analysis of materials to the highest level possible in the world. We will be able to see atoms for the first time in this country.

"For many years, our African colleagues who didn't realise the importance of putting money into a centre like this. But without it our physics researchers simply cannot compete at an international level."

In the past, Neethling and his students had to travel to Germany, the Netherlands, Belgium or Sweden to conduct research of this nature.

Neethling is one of South Africa's foremost researchers on the nuclear fuel particles to be used in future high temperature gas-cooled nuclear reactors, a source of green hydrogen. He is growing confident that, in his quest for the university to acquire the microscope, he had the support of other universities across the country along with major industries like Sasol, the Pebble Bed Modular Reactor Company and Element Six - past winner of the NSTF Awards in 2009 - a manufacturer of synthetic diamonds.

The microscope can be used across a multitude of fields.

"For example, if you want to use platinum alloys in a Boeing engine, you must know the micro and nano (atomic) structure of that material, as they determine the properties of that material. You need to know how these properties will change when the materials are subjected to normal operating conditions, like high temperatures or stress," he concludes.

The Brilliance Programme

THE quality of school education, especially in STEM, is of great concern to all South Africans, in particular the business and SETI communities. This has been compounded by the economic recession experienced in the past year, which resulted in insufficient research funding for SETI, impacting heavily on the education domain. Movements in the political arena contributed to uncertainties at universities and schools which need to understand and react to the new

education curriculum.

The Brilliance Programme, initially known as the Education Recognition Programme, was started by the NSTF in 2003 and is now, more than ever, pressed to deliver on its mission to identify, recognise and nurture talent from the school education sector and to expose these young 'Brilliance' to the professional research environment through the Awards event.

For more information, visit www.nstfawards.org.za

WINNER of the 'Individual over a lifetime' award Dr Brian van Wilgen, Chief Ecologist at the Council for Scientific and Industrial Research (CSIR) was honoured for a lifetime contribution to the improvement of natural ecosystem management policies and practices.

Over a career that spans 35 years he has conducted research into the ecology and management of fire-prone ecosystems, and the ecology and management of invasive alien plants.

His work was carried out at the SA Forestry Research Institute and later at the CSIR, where he is also a Research Fellow. He has developed evidence-based prescriptions for the use of fire in fynbos, savanna and grassland ecosystems.

His work on the impacts of invasive alien plants on ecosystem services, notably water resources, was instrumental in motivating for the establishment of the multi-billion rand Working for Water Programme, an award winning poverty-relief programme.

It employs 20 000 people who have cleared hundreds of thousands of hectares of invasive

tute and later at the CSIR, where he is also a Research Fellow. He has developed evidence-based prescriptions for the use of fire in fynbos, savanna and grassland ecosystems.

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It employs 20 000 people who have cleared hundreds of thousands of hectares of invasive

alien plants, with significant ecological benefits.

A colleague records that if asked when he started with this research project on invasive aliens, he will give you a slightly irritated look and then comment dryly: "This isn't a project. This is my life's work."

Described as "fynbos bedonk" (nuts about fynbos) by another colleague, Van Wilgen started his career at the then SA Forestry Research Institute, working on fynbos and fires.

He explains, "Working in this field, we quickly realised that you cannot study fynbos and fire

without considering the impact of invasive aliens. Pines and heheas are nearly impossible to eradicate because they are so widespread and form dense and impenetrable stands.

"They also produce enormous quantities of winged seeds, especially after a fire, which are then spread over great distances."

The Working for Water Programme has received international acclaim as one of the world's biggest programmes on invasive species and their impact on biodiversity and water resources.

To the CSIR finalists in the 2009/10 National Science & Technology Forum Awards: Congratulations, you made us proud!



Dr Puluhelelo Nelwamondo - Research Group Leader: Biometric

Dr Nelwamondo has been nominated for a contribution to the solution of the problem of missing data estimation in online control applications in the category: TW Kambule NRF Distinguished Young Black Researcher (over the past 2-5 years). This is the second consecutive year that he has been nominated a finalist in this category.



Dr Brian Van Wilgen - CSIR Research Fellow and Chief Ecologist

Dr Van Wilgen has been nominated for a lifetime contribution to the improvement of natural ecosystem management policies and practices. Van Wilgen has made major contributions to conservation and environmental security in the Southern African region and beyond through his research into the ecology and management of fire-prone ecosystems, and the ecology and management of invasive alien plants.

About the National Science and Technology Forum

The National Science and Technology Forum (NSTF) aims to bring together leaders and role players in the science, engineering and technology sector to initiate debate and address challenges in the sector. Through the NSTF Awards, excellent contributions to the sector are honoured.

For more information visit: www.nstfawards.org.za



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