

Propelling business growth in Nelson Mandela Bay



Attending the launch of the Propella business incubator are board members (from left to right): John Astbury, Wayne Oosthuizen, Jacqueline Barnett, Dr Ricardo Dames and Johan Wasserman.

Propella, a technology and business incubator and accelerator was launched in June 2015 by NMMU and partners. With premises in South End, it was established by Innovolve, the wholly-owned commercialisation company of NMMU in partnership with Engeli Enterprise Development, a private sector business-support company. Engeli and Innovolve joined forces after a need was identified for an incubator to support and stimulate technology-based innovation companies in Nelson Mandela Bay.

Propella's main areas of focus will be renewable energy, advanced manufacturing, energy efficiency and related technologies including ICT – with the development focus mainly on the entrepreneur behind the technology or business. "We will focus on a model of incubate, accelerate and graduate," said Propella Managing Director, Wayne Oosthuizen.

The initiative aims to develop expertise in key areas: business support and mentorship, access to finance, gaining market access, human capital development and support in technology and innovation. Businesses will go

through a rigorous selection process to qualify for access to Propella and its support services, which include the provision of offices, mini assembly/manufacturing areas, comprehensive ICT Infrastructure, accounting services, secretarial services and technical business support.

"There is a real need to support and grow local manufacturing businesses," said Jaci Barnett, Director of NMMU's Innovation Office and CEO of Innovolve. "NMMU has a number of new innovative companies that need support – but the need is broader than NMMU and that is where Propella plays a role."

Propella will also support creative arts entrepreneurs from a satellite incubator on NMMU's Bird Street premises, in the heart of Port Elizabeth's newly-developing cultural precinct.

Funded by the Industrial Development Corporation for the first three years of operation, Propella also receives financial support from NMMU, Engeli and local corporates, including General Motors South Africa and BASF.



Directors note



It gives me great pleasure to present this issue of our annual newsletter, highlighting

some of our achievements and activities in 2015. I always enjoy being part of compiling this as it provides an opportunity for the Innovation Office to reflect on the range of activities we were involved in and the highlights of the year. We have a great team driving these projects and initiatives but the real thanks must go to NMMU's researchers and our internal and external stakeholders – your support, encouragement and innovation continue to inspire us!

Jaci



"Technologies and opportunities come and go according to product life-cycles, but if a true entrepreneur can be developed, there is business longevity."
- Wayne Oosthuizen



The Innovation Office was involved in a number of activities during this past year, ranging from launching new centres to attending fellowships abroad. Here are our highlights of 2015.

New broadband centre supports SKA project



Attending the launch of the Centre for Broadband Communication are (from left to right): **Prof Tim Gibbon** (Director of the Centre), **Honourable Naledi Pandor** (South African Minister of Science and Technology) and **Prof Andrew Leitch** (Deputy Vice Chancellor, NMMU).

The Centre for Broadband Communication, a research centre intended to support the work of the Square Kilometre Array (SKA), opened at NMMU in March 2015. Minister of Science and Technology, Honourable Naledi Pandor, welcomed the development, saying that it was critical towards developing broadband solutions in line with national policy to drive universal access.

"The centre is strongly aligned with the DST's ICT research and development and human capacity development objectives. It is also aligned with the National Broadband Policy for South Africa, which aims to ensure universal access to reliable, affordable and secure broadband infrastructure and services by 2020, and to stimulate sustainable uptake and usage," said Pandor.

The Centre is supported by DST, CSIR-Meraka and SKA. In addition, CISCO will be providing key equipment and expertise to support the Centre and will work on collaborative research projects with Centre staff.

Broadband is a key challenge for the massive SKA project that will be built across Africa and in the Australian outback. Around 3 000 radio telescopes will scan the universe, producing a flood of data that scientists have to be able to process as far away as the UK. The Innovation Office played a key role in developing a proposal for funding of the Centre, as well as negotiating agreements between all parties and coordinating the launch.

NMMU's rubber research treads new ground

The launch of NMMU's Centre for Rubber Science and Technology in 2015 is a significant step towards the advancement of rubber-related research and development in South Africa. Drawing on NMMU's historic experience in rubber science and technology, the Centre will focus on undertaking relevant research, providing analytical and technical services, and training students to support the needs of the rubber and tyre manufacturing industries within South Africa.

"Nelson Mandela Bay is home to the country's motor and tyre industry, making the establishment of this Centre a testimony to NMMU's commitment to remaining relevant to the region's needs," said Centre Director, Dr Percy Hlangothi.

NMMU has long been active as a training institution in this field, providing education at both undergraduate and postgraduate level. The Centre's rubber-related research and development programmes will cross various disciplines such as chemistry, environmental science, computer science, engineering and economics.

"The Centre will not only house research projects that are relevant to the industry and community needs but will also offer learning programmes, long and short, and support services to benefit the industry."

- Dr Percy Hlangothi



Excited about NMMU's new Centre for Rubber Science and Technology are (from left to right): **Dr Percy Hlangothi** (Director of the Centre, NMMU), **Dr Chris Crozier** (REDISA), **Prof Chris Woolard** (Research Associate, NMMU) and **Prof Andrew Leitch** (Deputy Vice Chancellor, NMMU).

"The launch of the Centre has been spurred by our research on tyre recycling funded by REDISA, but goes beyond those projects and looks at the industry as a whole," said Jaci Barnett, Director of NMMU's Innovation Office.

The Innovation Office is instrumental in coordinating and driving the REDISA project, the main project of the Centre, and assisted with developing the plan for the Centre.

‘Innovation Bridge’ links developers and investors

NMMU took part in the inaugural “[Innovation Bridge](#)” hosted and arranged by the Department of Science and Technology in February 2015 in Pretoria. A ‘technology matchmaking showcase’, the event aimed at creating links between technology developers such as universities and science councils, and investors. The programme included technology exhibitions and demonstrations, policy dialogues and plenary discussions, training sessions and one-on-one meeting opportunities.

NMMU, represented by Innovation Office staff, exhibited a number of market-ready or near-market-ready technologies, including:

Advanced Circuit Design (*Prof Farouk Smith*):

Circuit design solutions for detecting and mitigating single event upsets in digital circuits.

Hot Rock™ (*Prof Russell Phillips*):

A low-risk and cost-effective system for the collection, storage and generation of energy at a small scale.

Microalgae to Energy (*Prof Ben Zeelie/InnoVenton*):

The cultivation of microalgae for the beneficiation of coal fines and further processing to energy products.

PVInsight (*Prof Ernest van Dyk*):

A laboratory for the performance testing of photovoltaic modules.

Segmented Turbine (*Prof Russell Phillips*):

A segmented wind turbine for small-scale applications capable of improved energy yield.

Weldcore® (*Prof Danie Hattingh/eNtsa*):

Non-destructive sampling to determine the remaining lifespan of plant infrastructure subject to stress.



The NMMU exhibition stand at Innovation Bridge.

NMMU had a good presence in the media, with Jaci Barnett discussing the Microalgae to Energy project on [Morning LIVE](#) and Mary-Ann Chetty discussing the SunWheel™ Planter, a University of Fort Hare innovation, on SAfm. NMMU also assisted the University of Fort Hare by exhibiting a prototype of their SunWheel™ Planter.

Three exhibition awards and three innovation awards were given out, with NMMU winning an innovation award (and a cash prize of R100,000) for the Microalgae to Energy project, in the category of “innovation most likely to impact public procurement.”

NMMU showcases technologies at Science Forum SA



South African Minister of Science and Technology, Honourable Naledi Pandor, and Dr Philemon Mjwara, Director General of the Department of Science and Technology at NMMU’s exhibition at Science Forum SA. In the background are Innovation Office’s Mary-Ann Chetty (left) and Naazlene Patel.

NMMU exhibited at the inaugural Science Forum South Africa exhibition, which took place in December at the CSIR’s International Convention Centre in Pretoria. The Forum aimed to showcase South Africa’s science and technology capacity to a global audience, and included several parallel sessions addressing a diverse range of science and science policy themes.

NMMU was represented by Innovation Office staff members Mary-Ann Chetty, Naazlene Patel and Elzaan le Roux, with an exhibition showcasing a number of our research centres and projects, including:

Centre for Broadband Communication (*Prof Tim Gibbons*):

Innovating to aggregate the huge volumes of data traffic generated by the SKA.

Centre for Community Technologies (*Prof Darelle van Greunen*):

Extending the benefits of technology to communities through inclusive innovation.

Centre for Rubber Science and Technology (*Dr Percy Hlangothi*):

Research into improved rubber processes and recycling methods is critical for both industry growth and a greener environment.

Microalgae to Energy Project (*Prof Ben Zeelie/InnoVenton*):

A completely new approach to biofuels from microalgae enabling the production of energy from waste coal.

The NMMU was featured in the media with Mary-Ann being interviewed by [eNCA News](#) on the Microalgae to Energy project, which was broadcast on various news stations.

“ **We need to ensure that the technology we have available to us responds to the challenges we are confronted with.** - Honourable Naledi Pandor ”

Eastern Cape Innovations win IDC business plan competition



Receiving their awards are (from left to right) **Mieshkah Dolley-Ryneveld**, **Kumaree Moodley**, **Mary-Ann Chetty** and **Martin Jonker**.
Absent: **Ralph Kuhn** and **Harold Meyer**.

Senior Innovation Manager Mary-Ann Chetty, Mieshkah Dolley-Ryneveld, Kumaree Moodley and Martin Jonker were among two groups of NMMU MBA students who won first and third prize in the annual Industrial Development Corporation's (IDC's) Tertiary Institution Business Plan Competition.

The students wrote the business plans for two projects managed by the Innovation Office, the Badger™, Prof Gorlach's low cost Automated Guided Vehicle; and the Sunwheel™ Planter, an agricultural innovation from the University of Fort Hare. Written as part of their MBA curriculum requirements, the two groups also took two special prizes away for best-written plan and plan with high social impact potential.

NMMU competed against MBA students from Stellenbosch, the University of the Free State and Milpark, as well as students from other institutions studying business degrees.

'The day I met President Obama'

NMMU Senior Innovation Manager **Mary-Ann Chetty** (right) was one of 500 fellows, selected from Sub-Saharan African states to participate in the 2015 Mandela Washington Fellowship for Young African Leaders – President Barack Obama's flagship programme.

The Fellowship was launched two years ago to support emerging African leaders in their efforts to drive economic growth, enhance democratic governance, and strengthen the civil society structures that will help the continent grow and prosper.

"This programme was a life-changing experience," said Mary-Ann. "I returned from the Fellowship feeling better equipped to lead initiatives within NMMU and energised to do more to catalyse innovation nationally." On completion of a six-week academic component, which consisted of specialised training in Public Management at Virginia Commonwealth University, Mary-Ann travelled to Washington DC, to participate in the Presidential Summit hosted by President Obama, where she networked and participated in discussions with other fellows as well as US leaders from the public, private, and non-profit sectors.

Mary-Ann plays a vital role within NMMU's Innovation Office, working with students, researchers and entrepreneurs to protect their Intellectual Property and commercialise their innovations.

Upon her return, Mary-Ann presented two information sessions on the Fellowship at the NMMU International Office's Rendezvous Café and the newly launched Propella Business Incubator. The sessions were aimed at young professionals between the ages of 25 and 35 who wished to apply for the 2016 MWF.

"It was an honour to be part of the Fellowship and a privilege to shake hands with President Obama."



Projects across the research and innovation value chain

The Innovation Office is involved in new and continuing projects at various stages of the research and innovation chain from applied research to late stage development and early stage commercialisation. The following articles are short updates on some of the projects at NMMU; keep an eye on the Innovation Office websites (Innovolve.co.za/innovation.nmmu.ac.za) for the latest news on all the projects during the year.

Quad Products

Heinrich Williams was paralysed in 2010, but he didn't let that stop him from starting his studies and thinking up ways to improve the lives of disabled people. Heinrich is currently studying industrial engineering at NMMU and is working with eNtsa and Clinical Care Sciences while his first two products are being developed.

Heinrich Williams, the innovator behind Quad Products with his service dog Viking.



Rose project moves to Kenya

The highly successful Iluba project – preservation of long-life roses and foliage – moved its manufacturing to Kenya over the past year. This is due to the shortage of suitable flowers in South Africa as well as seasonal variations playing havoc with the manufacturing process. Prior to Iluba's move, they had been importing 80% of their fresh flowers from Kenya at vast cost and with large production losses.



The Iluba long-life roses and foliage .

The project is the result of a partnership between NMMU's InnoVenton, the IDC and entrepreneur JJ Viljoen. NMMU developed a process, conceptualised by a local farmers' wife, which uses chemicals to give fresh-cut roses a longer life – and the roses have been commercialised through the partnership. The venture led to employment and 80% of the roses are exported to Europe, the Far East, Middle East and North America.

An article in The Star of 7 May 2015 used the successful rose project to illustrate the benefits of partnerships between academia, government, industry and civil society. As Viljoen explained in the article: "The inventor or researcher may come up with a brilliant idea but they do not know how to develop the idea into a business that can actually make money." He, with NMMU, approached the IDC and they funded the venture, allowing the partnership to turn a great invention into a business.

Qbell: Easy call button

An alternative nurse-call button suitable for use by patients with reduced or no hand/arm function – called Qbell™ – is being market tested for a three-month period at Life St. George's Hospital and Netcare Greenacres Hospital.

Qbell™, conceptualised by Heinrich and built by eNtsa, is a simple press device that enables patients to get the attention of healthcare staff without the frustration caused by trying to press a small button on conventional devices.

Qbell™ will be enhanced based on feedback from patients and healthcare staff after the trial. "We look forward to working with Prof Dalena van Rooyen of Clinical Care Sciences to conduct further testing in 2016," said Naazlene Patel of the Innovation Office.

QPark: Parking access system

An ingenious way of preventing able-bodied motorists from unlawfully using disabled parking spaces was conceptualised by Heinrich. QPark is a reserved parking system that is access controlled through the use of GPS communication and uses a smart phone's position to automatically open a motorised barrier.

The project received funding from the Technology Innovation Agency's Seed Fund programme to develop a prototype that will be tested on North campus before moving the prototype to the real world.

Student Counselling projects taking off



SCCDC staff receiving awards at the Innovators' Evening in 2015 were (from left to right): **Dalray Gradidge**, **Freda Sauls**, **Jaci Barnett** (Director of the Innovation Office), **Ruth Connelly** and **Dr Hanna Van Lingen**.

NMMU's Student Counselling, Career and Development Centre (SCCDC) has been at the forefront of a number of commercialised products since 2008. Their latest project, the Peer Help Activity Barometer (pHAB), takes the monitoring, tracking and management of student involvement to new heights. The pHAB is a user-friendly tool designed to track and monitor peer helpers' involvement and then reward them accordingly. The Innovation Office is currently working with SCCDC to roll out the programme to other universities.

WeldCore® receives international acceptance

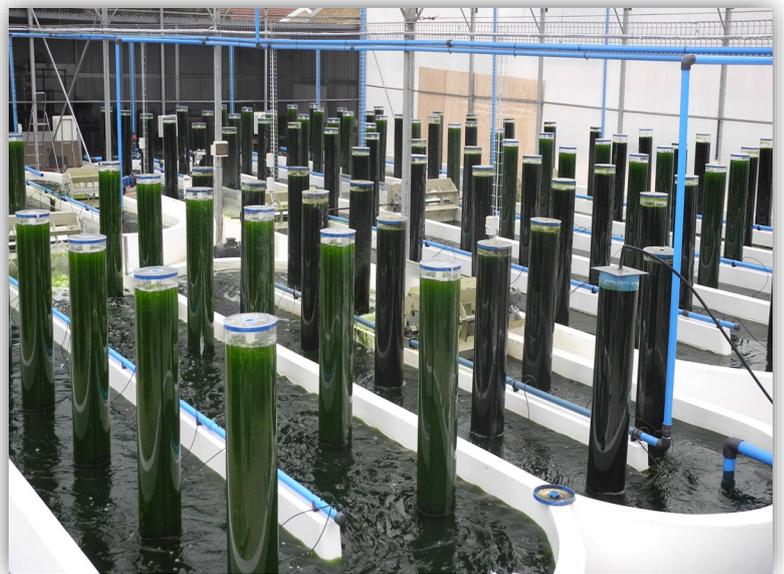
WeldCore®, the innovative welding and repair procedure developed by NMMU and Eskom, has been accepted onto the American Society of Mechanical Engineers (ASME) Section IX code.

This means that the process is now an accepted welding procedure, removing one of the regulatory hurdles regarding compliance for those companies who wish to use it. WeldCore® is the first code case to be accepted by ASME from a South African university.

The procedure, which has been developed over 12 years of fundamental and contract research, is changing the way engineers look at the life extension of high value engineering components. WeldCore® allows engineers to determine – more accurately than any other non-destructive technique – the remaining life of steel components, such as pipes under high temperature and pressure.

NMMU has established a spin-off company, Mantacor, which will be taking the procedure to market in 2016.

'Green' energy possible with Coalgae®



InnoVenton's greenhouse, where the Microalgae to Energy project is housed.

The Microalgae to Energy project focusses on the cultivation of microalgae for the beneficiation of coal fines and further processing to energy products.

Over the past year, InnoVenton's Coalgae® production process has been improved and its plant size increased to be able to produce up to one ton of Coalgae® per week.

This all formed part of a request from the Department of Science and Technology (DST) for a micro-demonstration plant to determine the feasibility and production capabilities of the Microalgae to Energy project on a large scale. This allows data to be collected to support the development of a proposed one hectare demonstration plant.

The Microalgae to Energy project has been receiving continued support from both the DST and the Technology Innovation Agency (TIA), with additional funding recently received for the establishment of a research programme in microalgae technology at NMMU.

A number of tests to verify the technology and projects are underway. Eskom will be conducting pulverised combustion tests on Coalgae®, while Cape Town-based John Thompson will be conducting fixed bed combustion tests. Port Elizabeth-based Geartech will be conducting tests on the bio-crude oil produced by Coalgae®. Approximately five tons of Coalgae® will be produced by April this year, which will then be used to produce bio-crude oil, upgraded Coalgae® (where the majority of the oxygen has been removed) and solid fuel (after the oil has been removed).

The Microalgae to Energy project has been receiving interest both nationally and internationally. The Innovation Office is working with InnoVenton to industrialise the technology.

Technology Innovation Agency Seed Fund projects

The Technology Innovation Agency (TIA) was established with the objective of stimulating and intensifying technological innovation in order to improve economic growth and the quality of life of all South Africans by developing and exploiting technological innovations. As part of this mandate, TIA is providing “seed funding” to Higher Education Institutions (HEI) to enable innovations with potential, but with insufficient resources to demonstrate concepts and investigate market opportunities. The NMMU has received seed funding for fourteen projects to date, which have showed great progress towards prototype demonstration, process and economic viability, and market potential. 2015 saw the successful showcasing of the following projects to industry and government:

Ostrich health products



Global ostrich farming is historically dominated by South Africa. Despite this, there is a lack of growth in the industry and low profitability due to the cost of raising ostriches, bird flu occurrences and the high mortality rates among chicks,

often greater than 50% due to helminth (worm) infections. Three products, a deworming agent from NMMU, a probiotic from UCT, and a growth enhancer from Beonics Feed Supplements (Pty) Ltd., were tested in a commercial trial setting to determine if they had an effect on reducing ostrich chick mortality.

This initial proof of concept trial showed that all three products successfully reduced the mortality of ostrich chicks. NMMU will continue to develop the deworming agent as a product and conduct further testing.

Contact lenses for African corneas



Existing manufacturers of contact lenses for medical and cosmetic purposes currently use the average cornea profile of Caucasian users as a standard shape. However, the corneas of African people, particularly, are shaped differently to those of Caucasian people. Contact lenses which do not have the correct shape to match that of the user can

cause ulceration of the membranes of the eye and also encourage bacterial infection. Prof Khaled Abou-El-Hosseini, his team of post-graduates and collaborators at the University of KwaZulu-Natal, have been able to optimise the manufacturing process for contact lenses better suited for the African cornea profile, using specialised equipment.

Latex manufacturing optimisation

Rubber Nano Products (Pty) Ltd, a spin-off company of NMMU, has successfully commercialised products to reduce zinc oxide content in normal sulphur-based vulcanization of rubber. This project aimed to test the products in latex applications as they use different conditions to normal rubber. The project lab work has been successfully completed and market tests are underway.

Media player for the blind

The South African Library for the Blind distributes media and media players to their members, and uses the postal service to distribute the media as files contained on a CD. This technique of data sharing is no longer efficient, neither is it the most cost effective technology for data sharing. In addition, there is the high cost of postage, wear and tear to the discs and the time taken to check and re-burn replacement discs.

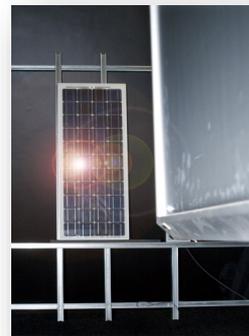
This project aimed to develop a low cost, simple device capable of playing audio books in Daisy format with a menu system. The device has been successfully developed by eNtsa and software programming will commence in 2016.

Off-grid low cost energy storage (Hot Rock™)

The Hot Rock™ system allows energy collected during the day to be stored for later conversion to electricity at a 1 to 5kW scale. The system comprises a parabolic trough, a rock bed and a heat engine. Solar thermal energy is collected using the trough and stored in the rock bed. The heat can then be converted to electricity using a heat engine.

In this project, a second improved prototype has been developed by Prof Russell Phillips and his team. With each improvement, efficiencies are gained which place the prototype closer to a working unit that can be practically tested in the field.

Photovoltaic (PV) module testing laboratory



The PV testing laboratory at NMMU is the only one of its kind able to test the manufacturing compliance and quality of photovoltaic modules destined for utility-scale PV plants. “TIA Seed funding was particularly useful in terms of enabling the laboratory to attain ISO 17025 accreditation. The accreditation process is underway and expected to be completed in early 2016,” said Prof Ernest van Dyk.

Recent projects approved by the Technology Innovation Agency for funding in November 2015. **Tetrastack™, an automated warehousing system** (led by mechanical engineering student Christopher Sephton in collaboration with eNtsa); **Concentrated solar energy system** (led by Dr Frederik Vorster from the Centre for Energy Research); **Space radiation hardness assurance of microelectronics** (led by Dr Farouk Smith); and **Primary school career guidance software** (led by Dr Ewald Crause and Prof Mark Watson).

Celebrating our inventors and innovators

NMMU's Innovation Office held their first "Innovators' Evening" in 2015 to honour and celebrate innovators and inventors at the university. Staff and students who have invented, developed or commercialised innovations were recognised for their contributions and the positive impact they have had on society through their innovations.

Prof Andrew Leitch welcomed the guests and said he was pleased to acknowledge their contribution to NMMU's vision and mission, particularly the value that their innovations add to developing a sustainable future. Dr Kerry Faul, Head of the National Intellectual Property Management Office (NIPMO) was the guest speaker and said NIPMO's aim was to "ensure that research outputs result in products, processes and services that improve the quality of life of all South Africans, thereby enabling our academic institutions to make an impact in their surrounding societies". NIPMO was established in 2010, to assist universities to manage and commercialise their research.

"It is great to be able to recognise their hard work and excellence in innovation, through which they make such an important impact," said Jaci Barnett, Director of the Innovation Office. Innovators were presented with Certificates of Recognition from the Innovation Office as well as NIPMO (inventors on patents) certificates.



Attending the Innovators' Evening at Madibaz Stadium Clubhouse in September were (from left to right): awardee **Margot Collett**, **Mary-Ann Chetty**, **Prof Andrew Leitch**, **Dr Kerry Faul**, awardee **Dr Percy Hlangothi**, **Jaci Barnett** and (front) awardee **Heinrich Williams**.

NMMU acknowledges Innovators at Research, Teaching and Engagement Awards function

NMMU acknowledged the outstanding achievements of the university's top researchers and educators at the prestigious Research, Teaching and Engagement Excellence Awards function hosted by the Vice-Chancellor, Prof Derrick Swartz, in September 2015. The annual awards - a highlight on the university calendar - celebrates the achievements of top academics in research, teaching, the creative and performing arts, innovation and engagement.

Dalray Gradidge of the Student Counselling, Career and Development Centre received the Emerging Innovation Excellence Award for her contribution to the successful commercialisation of SCCDC products. eNtsa's Etienne Phillips received the Innovation Excellence Project Award for the development of an algorithm that has improved the power output of the Twerly® Street Light turbine by 50%.



Receiving the Emerging Innovation Excellence Award is **Dalray Gradidge** (right) with DVC: Teaching & Learning **Prof Denise Zinn**.

"Engineering is research, development and ingenuity. In the right amounts, these three components can result in anything from supercomputers to staple removers."



Receiving the Innovation Excellence Project Award is **Etienne Phillips** (left) with DVC: Research & Engagement **Prof Andrew Leitch**.

"I am passionate about the development of a truly indigenous South African brand of psychology that redresses deficits, and that demonstrated excellence in its research-based cross-cultural practices."

The Innovation Office gets involved in a number of innovative initiatives during each year. We are constantly searching for ways to ensure innovation remains in the limelight at NMMU.

AIMday® enables key connections

NMMU and the Regional Innovation Forum (RIF) hosted AIMday® (*Advanced Manufacturing*) in March, providing an opportunity to connect researchers with industry to solve problems and also build relationships. Industries were invited to raise questions to be answered by researchers in their specific field and structured discussions were scheduled to take place on the day. Among the attendees were Prof Lars Jonsson and Anette Pearsson-Stache, both AIMday® representatives from Sweden's Uppsala University: Innovations.

“The first AIMday® to be hosted on the African continent was welcomed by the innovation community. We received very positive feedback from industry representatives and researchers, who all emphasised the importance of such an event in driving industry-academic collaboration in our region,” said Wendy McCallum of RIF, and organiser of AIMday®.



Attending AIMday® at NMMU were (from left to right): **Lars Jonsson** (Uppsala University Innovation), **Anette Pearsson-Stache** (Uppsala University Innovation) and **Wendy McCallum** (RIF).

“ **The connections made at AIMday® continue to yield forward-thinking in the field of advanced manufacturing. We will endeavour to continue to host similar programmes to connect people passionate about innovation in our region.** ”
 - Wendy McCallum

tSparx ignites creative minds

NMMU's Innovation Office, together with Rhodes University, presented a technology entrepreneurship course in the Eastern Cape funded by TIA.

Held in Port Elizabeth from April 13 to 17, the course was attended by 38 postgraduate students from Rhodes, NMMU and Walter Sisulu University, who were introduced to different aspects of the business model canvas. Lectures were presented by a balance of external experts and NMMU staff.

A number of entrepreneurs, including NMMU inventor Robert Bosch, gave talks on their entrepreneurial journey.

Giant Flag project is moving forward

The Giant Flag is a project that aims to build a giant South African Flag in the Camdeboo area. Each colour of the flag will be represented by a different component, including plants (Fire Barrel, Spekboom, Golden Barrel cactus and Mini Agave), roads and a solar field that will also harvest rainwater to make the 66 hectare flag water independent.

NMMU is proud to be a partner of the Giant Flag Project which will create opportunities for higher education access, research, small business development and sustainable job creation in the Camdeboo District of the Eastern Cape.

NMMU, through its researchers, the Innovation Office and Propella Incubator, continues to support the project as it develops. A series of short adverts comprising interviews with the various partners were [aired on DSTV](#) in the last quarter of 2015 and will continue airing in 2016. The construction of the four mega-watt solar field will commence in 2016.



Visiting the Propella Business Incubator earlier this year were (from left to right): **Prof Ernest van Dyk** (PVInsight), **Mary-Ann Chetty** (Innovation Office), **Samantha Jankovich** (Giant Flag Trustee), **Wendy McCallum** (RIF), **Guy Liebenberg** (Giant Flag Founder and Trustee), **Jimmy Joubert** (Giant Flag Trustee) and **Enrique Collado** (Consultant).

The Innovation Office is involved in awareness raising, building capacity and developing links regionally, nationally and internationally each year. We believe this is part of our mandate and NMMU gets as much back from these activities as it puts in – in terms of friendships, connections and access to global networks.

Celebrating World IP Day at NMMU



To celebrate World Intellectual Property (IP) Day on April 26, NMMU hosted a series of events supported by the National Intellectual Property Management Office (NIPMO) throughout April to raise IP awareness in the University community.

Two presentations for students, on Intellectual Property and Copyright, took place and researchers had the opportunity to engage in one-on-one discussion sessions with IP attorneys from Spoor & Fisher.

An IP and music event celebrating the 2015 World IP Day theme, “Music”, was held in the Kraal to raise IP awareness and promote the department. Inventors chatted to the students about how to protect IP. A traditional Marimba band performed while the discussions took place.

The lucky winner of NMMU’s IP competition was **Phumela Jekane** (right), who went home with a 2GB iPod Shuffle. The prize was presented to her by **Mary-Ann Chetty** (left).

Namibia’s new IP legislation

NAMIBIA is in the process of introducing new legislation for the protection and exploitation of intellectual property arising from publicly-funded research and development.

As part of the Southern Africa Innovation Support (SAIS) mentorship programme and the SARIMA’s outreach to southern African states, Senior Innovation Manager, Mary-Ann Chetty visited Namibia to provide mentorship and strategic recommendations to universities and funding bodies.

She met with the University of Namibia, Namibia Polytechnic and the National Commission for Research Science and Technology (NCRST, a government funding body which funds basic research and commercialisation).

Ensuring universities are IP Wise™



Presenting at the NMMU IP Wise™ workshop were (from left to right) **Jaci Barnett**, **Mary-Ann Chetty**, **Runaaz Dawood** from NIPMO, and **Naazlene Patel**.

The Innovation Office, in conjunction with the National Intellectual Property Management Office (NIPMO) and the Southern African Research and Innovation Management Association (SARIMA), held Intellectual Property (IP) Wise Workshops at Walter Sisulu University, NMMU and Cape Peninsula University of Technology in 2015.

“

IP Wise™ enables researchers to understand Intellectual Property and innovation in a South African context. This allows them to align their research with an innovation strategy.

- **Mary-Ann Chetty**

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Mary-Ann at STEM conference

Senior Innovation Manager Mary-Ann Chetty was invited to be a panellist at a session on “innovation and entrepreneurship” at the Women in Science, Technology, Engineering and Mathematics (STEM) conference held in Johannesburg in October.

She spoke about the value of professional exchanges for women in STEM and how her experience on the E-Step+ programme and the Mandela Washington Fellowship had enhanced her professional development and profile.

“Women in STEM need to take up opportunities for professional development through exchange programmes to get an education of a different kind. My experiences have changed my outlook and approach to work and expanded my network,” said Mary-Ann.

International Travels in technology transfer

Innovation Office Director Jaci Barnett was invited to present at a number of high-profile international conferences and workshops in 2015, building capacity and promoting the technology transfer profession.

Tokyo: January 2015

Jaci was a guest of the Policy Alternatives Research Unit at the University of Tokyo – and was invited to speak at the Global Intellectual Property Strategy Forum hosted by the Japanese Intellectual Property Office (INPIT) where she spoke on "industry-academia collaboration and technology transfer in South Africa".

She also spoke at the University of Tokyo on "‘unconscious’ misconduct and technology transfer". The trip ended with a Council meeting of the global Alliance of Technology Transfer Professionals, with Jaci representing SARIMA.

United Kingdom: March 2015

Travelling as guests of the Recycling and Economic Development Initiative of South Africa (REDISA), with whom NMMU has research links, Jaci accompanied Deputy Vice-Chancellor Prof Andrew Leitch and Chemistry's Dr Percy Hlangothi to the United Kingdom. The aim of the trip was to visit RAPRA, a tyre testing centre in Shrewsbury, to determine the key challenges in setting up such a centre.

The NMMU team also visited the National Composites Centre at the University of Bristol. The visit was precipitated by NMMU's involvement in the Composites Research Programme, funded by the Department of Science and Technology, and currently managed by eNtsa.

Zimbabwe: May 2015

Jaci assisted with an outreach on the Patent Cooperation Treaty (PCT) in Zimbabwe during May 2015, following a request by the World Intellectual Property Organisation (WIPO). She gave lectures at the University of Zimbabwe (UZ) in Harare and at the Bindura University of Science Education (BUSE) in Bindura, speaking about the realities of patenting and research commercialisation in a developing country.



Jaci Barnett (left) with Nyalleng Pii (centre) of WIPO and Glenda Mutasa of the Zimbabwe IP Office.

Sweden: September 2015

As a guest of the Swedish Network for Innovation & Technology Transfer Support, Jaci was invited to present at their Annual Meeting in Stockholm (themed "innovation by collaboration") and spoke on "models for innovation and knowledge transfer in a developing country". The session was co-hosted by Jesper Vasell of Chalmers University in Gothenburg, who spoke about the major challenge being the lack of an "innovation ecosystem" to accept new technologies.

Jaci also visited the University of Gothenburg to strengthen links in the marine field, as well as Uppsala University, with whom NMMU already has a long and productive relationship, built on innovation. The visit has already borne fruit, with Prof Lena Gipperth, Director of the Centre for Sea and Society, visiting NMMU in October, as well as a research collaboration being discussed between NMMU, UG and Eduardo Mondlane University in Mozambique.

SARIMA Conference

The Association of Commonwealth Universities and the Southern African Research and Innovation Management Association (SARIMA) held their 2015 Conference from May 11 to 14 at Johannesburg's Indaba Hotel.

Attending from the Innovation Office were Jaci Barnett, Mary-Ann Chetty, Fredrick Matongo and Naazlene Patel.

Jaci presented on "Structuring Technology Transfer Offices", "Managing conflicts of interest" and "Professionalisation of R&I Management" while Mary-Ann presented on "Building a commercialisable research pipeline as the first step towards technology transfer" and "New pathways: Industry-academia engagement" at the conference.

Jaci has been elected as President-Elect of SARIMA (2015-2017, President from 2017-2019). Mary-Ann has been co-opted to SARIMA's Innovation & Technology Transfer portfolio to roll out IP Wise™ nationally.

Mary-Ann presents at 2015 WIPO Summer School

Mary-Ann Chetty was invited to present at the 2015 World Intellectual Property Organisation (WIPO) Summer School on Intellectual Property and Technology Transfer in Durban during November where she presented on the challenges and contemporary issues related to Technology Transfer. The Summer School was also attended the Innovation Office's newly appointed contracts lawyer, Melanie Leitch.



Director receives inaugural SARIMA award

Innovation Office Director Jaci Barnett received the inaugural award for “Distinguished Contribution to the Innovation Management Profession” at the Southern African Research and Innovation Management Association (SARIMA) conference gala dinner held in Johannesburg in May.

Presented to her by Minister of Science and Technology Honourable Naledi Pandor, the award was made in recognition of excellence in Innovation Management and Jaci’s contribution to the development of the technology transfer profession, locally and internationally.

*Receiving her award from South African Minister of Science and Technology, Honourable **Naledi Pandor** (left) is **Jaci Barnett***



The Innovation Office Team



The Innovation team:

Elzaan le Roux
(PR & Marketing Administrator),

Jaci Barnett
(Director),

Nontando Saki
(Financial Administrator),

Naazlene Patel
(Innovation Officer),

Mary-Ann Chetty
(Senior Innovation Manager),

Melanie Leitch
(Contracts Lawyer) and

Elsa van Wyk
(Secretary).

Staff Farewells



Wilma Maritz left the Innovation Office in May 2015 and moved to Cape Town, where she has accepted a position at DigiOutsource. She joined the Innovation Office in 2013 to complete her in-service training for her Diploma in Public Relations Management and completed her B.Tech degree in 2014.



Fredrick Matongo left the Innovation Office in November 2015 to accept an appointment as the Technology Transfer Manager at the University of Fort Hare’s brand new Technology Transfer Office. He joined the Innovation Office in 2013 as a Chuma candidate and was appointed as the Projects Officer in November 2014.

Staff Appointments



Melanie Leitch joined the Innovation Office team in the position of Contracts Lawyer in May.



Elzaan le Roux was appointed as the Innovation Office’s Public Relations Intern at the end of May to complete her in-service training for her Diploma in Public Relations Management.