



RHODES EXCHANGE

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PG 2: TOP AWARDS AT NATIONAL ENTOMOLOGY/ZOOLOGY CONFERENCE



PG 2: TAKING SCIENCE TO RECREATIONAL FISHING



PG 3: PSYCHOLOGY HOSTS INTERNATIONAL CONFERENCE



PG 4: GOOGLE SCHOLARSHIP FOR WOMEN IN SCIENCE CHAMPION

TOP NOTCH RESEARCH

Cutting edge research being conducted in the natural and biological sciences has seen some of Rhodes University's top researchers and PhD candidates scoop national awards, notably in the area of zoology and entomology for research that is being implemented in applied systems. In addition, the Department of Ichthyology and Fisheries Science (DIFS) initiated a partnership with a competitive angling body known as the Rock and Surf Super Pro League (RASSPL) that has led to a direct influence on recommended fish handling practices, which in turn influence mortality rates, an important indicator of linefish stocks. Ms Rachel Sibande is the only recipient of the Anita Borg Google Scholarship to come from South Africa and is one of just four recipients from Africa. Finally, the Psychology Department successfully hosted the first African chapter of the International Society of Critical Health Psychology.

RHODES RESEARCH GROUP WINS NSTF AWARD

By Catherine Deiner

Professor Martin Hill and his research team, the Biological Control Research Group (BCRG) won the NSTF-GreenMatter Award for 2014/15. The national awards celebrate outstanding contributions to science, engineering, technology and innovation in South Africa. The BCRG were recognised at the 17th annual National Science and Technology Forum (NSTF) Awards.

This award goes to an individual or an organisation who strives to achieve biodiversity conservation, environmental sustainability and a greener economy.

The BCRG under the leadership of Hill, are at the forefront of biological control of aquatic weeds worldwide. Hill is widely regarded as Africa's foremost authority on the biological control of invasive aquatic weeds. His body of work continues to make influential contributions to the discipline both in South Africa and globally, notably to improving the safety and effectiveness of biocontrol and ensuring water security.

The primary goal of their research is a reduction in the impact of aquatic weeds in freshwater ecosystems, in South Africa and further north into Africa, through the release of host-specific damaging biological control agents.

"Our research group has been able to show the impact that invasive aquatic alien plants have had on biodiversity in South Africa and the benefit that biological control using host-specific biological control agents have made to that. We've shown that post-release of biological control agents, native biodiversity can recover," explains Prof. Hill.

Invasive aquatic weeds severely limit and impact water resources in South Africa, both economically and ecologically. Water hyacinth, the world's worst aquatic weed, reduces aquatic biodiversity, compromising the integrity of freshwater systems. The BCRG has employed biological control through the release of host specific insects which reduce these infestations to manageable levels, ensuring the return of indigenous aquatic biodiversity.



DR JULIE COETZEE AND PROFESSOR MARTIN HILL

According to Hill, "We do good fundamental science, on applied systems, and we implement it. The way that we have been able to implement it is through employing people from the most marginalised of society, that being people working with disabilities and then the benefit has been to South Africa as a whole, because we are improving the quantity and quality of fresh water."

The biological control of aquatic weeds using host-specific, damaging natural enemies is a particularly appealing solution because it is not toxic, pathogenic or dangerous to humans, and also has the advantage of being self-perpetuating once established and does not harm non-target organisms found in the environment.



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TOP AWARDS AT NATIONAL ENTOMOLOGY/ ZOOLOGY CONFERENCE

By Catherine Deiner

Terence Bellingan, a PhD candidate, has scooped the Young Scientist Award for the best presentation at a National Congress of ESSA at the Entomological Society of Southern Africa and the Zoological Society of South Africa (ESSA/ZSSA) 2015 conference. Hosted at Rhodes this year, this conference brings together the two largest societies for professional zoologists and entomologists in the country with 432 delegates; 18 South African universities were represented with a total of 62 delegates from Rhodes.

"The conference showed that the two disciplines are in very good health in the country," said Professor Martin Hill who was elected as president of the Entomological Society of Southern Africa at the ESSA/ZSSA conference.

"The research work I presented was focussed on the impacts that non-native trout have on native vertebrate and invertebrate fauna of the headwaters of the Keiskamma River in the Eastern Cape," said Bellingan. He also won a book for the best photograph in the category of, "The art in nature" for photographs that have been significantly digitally altered.

Louw Claassens, also a PhD candidate, received the award for the Best Student Speed Presentation. Rhodes University Distinguished Professor, Christopher McQuaid, winner of the ZSSA Gold Medal in 2013, gave a keynote address on "Pattern, process, prediction: understanding nature."

Professor Graham Kerley, from NMMU, received this year's ZSSA Gold Medal Award for his contribution to zoological research, while Dr Andre Boschhoff, also NMMU, received the Stevenson-Hamilton Award for popularising zoology.

Other keynote addresses were given by Professor Dave Richardson of the DST-NRF Centre of Excellence for Invasion Biology, Professor Tim Blackburn



TERENCE BELLINGAN, A PHD CANDIDATE WHOSE RESEARCH IS FOCUSED ON THE IMPACTS THAT NON-NATIVE TROUT HAVE ON NATIVE VERTEBRATE AND INVERTEBRATE FAUNA OF THE HEADWATERS OF THE KEISKAMMA RIVER IN THE EASTERN CAPE.

from University College, London, Dr Rolf Becker of SACNASP and Professor David Macdonald of Oxford University.



PART OF THE RESEARCH TEAM AT THE RASSPL NATIONAL COMPETITION PRIZE GIVING

TAKING SCIENCE TO RECREATIONAL FISHING

By Warren Potts and Matthew Parkinson

There are between 500 000 and 900 000 marine recreational fishers in South Africa. These significantly outnumber the commercial (3450), small-scale (\pm 5000), and subsistence fishers (\pm 15 000) that target linefish. With such huge participation, the substantially greater harvest of the recreational fishery restricts the development of the other sectors and the improvement of livelihoods in coastal communities.

The Department of Ichthyology and Fisheries Science (DIFS) initiated a "community engagement" partnership with a competitive angling body known as the Rock and Surf Super Pro League (RASSPL). This league operates on a catch and release basis only and the long-term aim of the partnership is to use rigorously collected data to inform improvements in the fish handling practices and ultimately minimise the mortality of fish captured during the league competitions. The Department has also developed a scoring system for the RASSPL fishing events which also allows accurate recording of recreational catch data from around the country, an important indicator of linefish stocks.

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A team of 14 staff and students embarked on an experiment to examine the effects of catch-and-release on the health and survival of fish in one of these competitions. The team, led by Dr Warren Potts, spent three days in the Border area at the annual RASSPL national fishing competition. The researchers observed the fishermen's behaviour, recording the timing for hooking, fighting, landing, measuring, photographing, and releasing fish, paying particular attention to how long the fish were exposed to air. Once fishermen had recorded their catch, researchers received the fish into a tub of water to determine the state of stress of the fish.

On the third day of the competition, fish were collected from the fishermen and placed into one of three, 3 kl ponds with a flow through water system to determine their survival rate. Forty fish were held overnight and all fish survived except for five fish of two different species of sea catfish – 4 of 10 white sea catfish and 1 of 3 black sea catfish died. These may be good indicator species that can be used to monitor survival of fish after being handled.

The preliminary findings of the research were presented to the anglers by Dr Warren Potts at the event prize giving and the team who demonstrated the best handling practices (Western Province) was awarded a conservation trophy. All of the proposed rule changes and recommendations were accepted by the RASSPL committee and these "new" rules have been issued for the 2015/2016 RASSPL fishing season. Besides improving the fish handling practices, the results of this project have also contributed to a student's honours project and the information collected is expected to be published in the peer reviewed literature.

Next year's RASSPL national competition will be held in Struisbaai (Western Cape) and the team will examine the impact of the recent rule changes on the survival of the fish. It is hoped that this experiment will be the subject for an MSc study in 2016.

Besides the long-term RASSPL project, the DIFS is rapidly developing its recreational fisheries research portfolio. Recently initiated recreational fisheries projects include a global review project

of recreational fisheries governance funded by the FAO, a two year project that aims to assess the economic impact of South Africa's recreational fisheries in partnership with the University of the North West, University of Cape Town, SAIAB and the Oceanographic Research Institute and a project that aims to use social norms to improve recreational fisheries compliance in collaboration with Prof Shankar Aswani from the Anthropology Department. The Department has also established a partnership with WWF in their citizen science project "fish for life" and will be conducting one component of the project "Fishtory", which aims to create an online platform to digitise historical angling photographs and generate historical data from fishermen's diaries throughout the country. Another project funded by the Department of Trade and Industry will examine the impacts of climate change on several of South Africa's recreational linefish species.

PSYCHOLOGY HOSTS INTERNATIONAL CONFERENCE

Rhodes University hosted the International Society of Critical Health Psychology conference in July, bringing it to the African continent for the first time.

"The Chair was instrumental in getting the conference," said Professor Catriona Macleod, who holds the SARChI Chair in Critical Studies in Sexualities & Reproduction (CSSR).

"The Rhodes Psychology Department and the CSSR programme are known for their critical work in psychology and health psychology," said Macleod. "We have drawn a good number of delegates who have not been to the conference before, thereby increasing the pool of potential members of the Society. We introduced a number of new features to the conference programme, such as a side bar of health related documentaries, community visits where delegates can view health related projects in action.

The theme of this, the 9th Biennial Conference, 'Health, Health Care and Social Justice' provided an opportunity to further debate on the conditions that shape people's experiences of health and illness and the sort of care they receive.

Over 130 delegates from Canada, the USA, the UK, Australia, New Zealand, Europe and Zimbabwe joined many South African delegates. "We've been wanting to come to Africa, because we know it's an important place for the kind of work that we are interested in, and we are thrilled that Rhodes University stepped up and offered to host it," said Chair of the ISCHP, Professor Christine Stephens, from Massey University.

"I think in particular people have enjoyed being forced out of their very Western world view, even in places where there is cultural diversity, to come here and see South Africa and the very multicultural nature of it," added Vice-Chair, Dr Gareth Treharne, from the University of Otago.

"There was a common theme and a focus on inequalities and understanding how we can use broader critical approaches to care for people with disabilities, people who are in precarious situations, and people who are experiencing violence," explains Stephens.

In addition to the three keynote speakers and papers from within the academic discipline of critical health psychology, some papers were delivered

by professionals who work in the health NGOs or in the health department to emphasise the multidisciplinary nature of critical health studies.

Keynote speakers were: Michelle Fine, a Distinguished Professor of Social Psychology, Women's Studies and Urban Education at the Graduate Center, CUNY; Leslie Swartz, a Distinguished Professor of Psychology at Stellenbosch University; and Garth Stevens, a Professor and clinical psychologist in the Department of Psychology, School of Human and Community Development at the University of the Witwatersrand.

In addition, Professor Melvyn Freeman, Chief Director for Non-communicable Diseases at the South African National Department of Health spoke on legal capacity and the rights of persons with disabilities.

A highlight of the conference was the screening of "Miners Shot Down" with the filmmaker Rehad Desai in attendance.

Delegates also enjoyed site visits to community partners such as Ubunye Foundation, Upstart Youth Development Project, Keiskamma Trust and Fort England Psychiatric Hospital.

Visit <http://ischp2015.co.za/> for more information.



PANELLISTS AT THE INTERNATIONAL SOCIETY OF CRITICAL HEALTH PSYCHOLOGY CONFERENCE

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GOOGLE SCHOLARSHIP FOR WOMEN IN SCIENCE CHAMPION

Ms Rachel Sibande is the only recipient of the Anita Borg Google Scholarship to come from South Africa and is one of just four recipients from Africa. Sibande first visited Rhodes when she attended the Highway Africa Conference in 2014. There she became inspired by Prof Hannah Thinyane's work on citizen engagement platforms to monitor water service delivery and promote accountability.

"I was invited to Highway Africa to present on the experience and results of the elections project that we undertook in Malawi where, through a basic web to sms platform, citizens were able to send information of incidences as they occurred during the elections," said Sibande. "I realised Prof Thinyane and I had similar interests centred around use of technology for citizen engagement." There was little more encouragement Sibande needed to register for her PhD: "I chose Rhodes because it has one of the best pass rates in the country. I also realised there was very close and dedicated supervision at Rhodes and felt that my supervisor was a perfect match to my interests.

Sibande obtained her Masters degree with distinction in Information Theory, Coding and Cryptography from Mzuzu University, in Malawi. Her current research is on the use of mobile

technology for citizens to engage with their elected leaders, government and the civil society to foster participatory community development.

The Anita Borg scholarship is aimed at encouraging young women to study computer science and Sibande is no stranger to the role of mentoring women: "Thebi Thadzi, a social worker in Malawi, and I conduct motivational talks in school and introduce the girls to fellow young professional women from other fields such as medicine, aviation and law."

She recently sourced \$500 from a Malawian couple living in the USA, for a mobile development competition for female computer programmers in Malawi as part of the activities in a technology hub she set up in 2013 – <http://femaledevelopers.mhubmw.com>. "Through this initiative, I hope we can create a platform for collaboration amongst female computer science enthusiasts with their male counterparts," she said. "I am also in the process of registering a non-profit called 'GirlsCODE' through which we will reach out to schools and introduce basic computer science skills in programming on simple platforms for children such as 'Scratch'; a programming platform for children developed by MIT."

A week long visit to the UK in June gave Sibande the opportunity to meet the people making Google

products; the software engineers, site reliability engineers and product managers. It was also an opportunity to interact with and learn from fellow scholarship awardees.

In 2013 Sibande established Malawi's first technology hub called mHub. "This is an incubator for technology startups in Malawi," she said. "We identify, nurture and mentor young technology enthusiasts with technical and business skills. After the PhD I intend expanding the hub and making it commercially viable. Firstly, by establishing a software development unit to champion locally developed technology solutions and secondly, by establishing an ICT4D research and consultancy unit within the hub to be a leading think tank in Malawi.

A 29 year old married mother of three children, Sibande is reaching for the stars. She is also an alumnus of President Obama's Young African Leaders Initiative (YALI).

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