GENERAL NEWS

South Africa: Scientists increasingly probe the health benefits of rooibos (allAfrica.com, Apr 2012)

The health benefits of rooibos have long been part of South African folklore, even as the indigenous brew was scorned by the upper classes throughout much of the 20th Century as being a 'poor man's tea'. But increased research into the properties of rooibos - which is part of the fynbos family and endemic to the Cedarberg region of the Western Cape - over the past ten years has found evidence that it is rich in anti-oxidants...Read more

South Africa: Wits plants medicinal garden (Johannesburg City News, May 2012)

It is hoped that the garden will expose students to phytol-medicine and teach them about a wider range of healing strategies from different traditions. Plants in the garden include St John's wort, Aloe ferox, Cape Honeysuckle, Snake Flower and Blue Lily...Read more

Tanzania: Hope for HIV/Aids victims on the horizon (allAfrica.com, May 2012)

There is a glimmer of hope for people living with HIV/AIDS to have their immune system activated faster by taking advantage of the nutritional benefits of the African potato. The African wild potato is a bitter plant used for a wide variety of conditions including diabetes mellitus, haemorrhage, prostate problems and boosting immune function...Read more

FORTHCOMING BOOKS

Natural products from plants

From medicinal, industrial, and culinary uses to cutting-edge laboratory techniques in modern research and plant conservation strategies, Natural Products from Plants, Second Edition reveals a vastly expanded understanding of the natural products that plants produce.

Non-Timber forest products

This comprehensive book addresses the issues that arise when the primeval practice of gathering wild plants, fungi, leaves, and bark occurs in a post-industrial world. Non-Timber forest products include: medicinal herbs, fungi, edible fruits and nuts, and other natural products from the forest.
ACGT founder presented with lifetime biotech contribution award

April 2012

Co-founder, former Director of the African Centre for Gene Technologies (ACGT) and currently part time consultant to the organisation, Dr Jane Morris, was honoured with the Lifetime Contribution Award at the 2012 Biotechnology Fundi Awards on 16 February.

Held at The Innovation Hub in Pretoria, the Awards aim to incentivise, support, promote and develop individuals and companies who make a significant impact on the biotech sector in Gauteng. The Lifetime Contribution Award recognises a biotech sector role model who has made a significant and impactful contribution in the development and promotion of biotechnology that spans a lengthy period of time.

Over the last two decades of her career, Dr Morris has been involved in numerous aspects of the biotechnology sector. After spending a number of years managing biotechnology research in an industrial environment at AECI Ltd Research and Development, she moved on to the public sector at the CSIR where she took on a strategic technology management role. In addition, she has played an active role in biotechnology and bio-safety issues and participated in various national and international programmes concerned with GMO (genetically modified organism) safety. Since establishing the ACGT in 2001, Dr Morris has also been part of a number of South African government delegations promoting international collaborations in biotechnology and held advisory and other roles on various science and technology forums.

When asked what her personal career philosophy has been, she says, “In everything I do I just want to make more of an impact than simply sitting on the lab bench. I always wanted to see and try to influence the bigger picture; to not just be part of the status quo, but to move it forward”. She adds that she was first attracted to the concept of advancing the science and application of biotechnology on a larger scale when, after joining AECI, she was introduced to its industrial applications. “I saw the potential for the commercialisation of biotechnology in a range of different fields. That was when a whole lot of things began to open up”, she explains.

Part of her role at the time was to look at the feasibility of the different industrial projects that were being developed. “These ranged from GM plants to feed additives for farm animals. In order to look at the potential for those, you really had to start thinking a lot more widely”, she says. It was this experience that provided her springboard into the numerous areas in which she is now a recognised figure within the sector – including policy development, collaborative networking and review/evaluation.

On receiving of the Lifetime Contribution Award, Dr Morris gave a short speech of thanks, wherein she touched on what she views as some of the long-standing challenges in South Africa’s biotech sector. “A big talking point in the National R&D strategy is the innovation chasm, and often it seems that as soon as a new intervention is introduced, a new gap opens up. We really have to put a lot more work into getting the full value chain right - from research to getting products onto the market”, she says.

According to Dr Morris, one of the keys to achieving this is for all role players to not only work hard, but to work together. She believes she can make a lasting contribution to this through the legacy that she wants to leave behind with her work at the ACGT. “Having started the ACGT, basically from scratch, and then to see it attracting more and more institutions that want to work together - it gives me the feeling that I could walk away knowing that this is something that will survive”.

Adopted from the ACGT website
PhD candidate and SABINA student, Adushan Pillay was awarded the first prize for his presentation at the 12th Frank Warren Organic Chemistry Conference, hosted in Bloemfontein from the 15-18 April 2012. This conference is known to be the leading organic chemistry conference held in South Africa and provides a platform for attendants to meet with international guests and showcase their work, as well as build relations for potential future collaborations.

Adushan is currently conducting his research at the University of Witwatersrand in Johannesburg, South Africa. The presentation he delivered was part of his PhD synthetic work, entitled: *Synthesis of Anti-Tumour Naphthoquinones*. He presented his most recent and successful work: *The first reported total synthesis of the fungal naphthoquinone compound, anhydrofusarubin*. According to Adushan these specific naphthoquinone compounds have medicinally useful properties and by synthesizing them they have access to larger amounts of material for biological testing and they have a synthetic route to these compounds, which can be altered to explore the activity of their structural analogues.

“It was a prestigious honour to win this award because: (i) there were numerous worthy presentations, (ii) the judges’ panel consisted of three international and two local organic chemists and (iii) winning this award demonstrated that the quality of synthetic work undertaken in the WITS chemistry department is of a very high standard. It also emphasizes that my supervisors are excellent mentors”.

Adushan is currently dedicating his time to writing-up his PhD thesis and writing publications based on his work. We wish him every success in his current and future endeavours.

**Announcements**

1. **Changed the VRE domain from ‘chisimba’ to ‘naturalproducts’**
   
   Please note that the new VRE url is: [http://naturalproducts.bi.up.ac.za/vre/](http://naturalproducts.bi.up.ac.za/vre/)

2. **Workshop invite: seven imperatives to succeed in research: 29 May 2012**

   The Southern African Research and Innovation Management Association (SARIMA) is hosting a workshop on: *Seven Imperatives to Succeed in Research*. This workshop will be held in the Free State, South Africa on 29 May 2012. POL-SABINA is willing to pay the registration fee for SABINA students and staff interested in attending the workshop. To download the invitation and registration form go to the [Natural Products VRE](http://naturalproducts.bi.up.ac.za/vre/).

3. **Postdoctoral positions in tree genomics and bioinformatics at the University of Pretoria**

   Candidates are sought for two postdoctoral positions in genomics and/or bioinformatics (starting July/August 2012). **Application deadline is 31 May 2012**... [Read more](#)

4. **POL-SABINA call for “Motivation for support towards the development of a business / implementation plan for a project in the SABINA network”**

   POL-SABINA is pleased to announce an award for support towards the development of a full implementation / business plan. Scientists and students from SABINA partner institutions are invited to submit motivations for support outlining how the award money would contribute towards the development of a full business / implementation plan for value addition to a natural product research project that they are involved in. **Deadline is 25 June 2012**... [Read more](#)
Differential Effects of Tea Extracts on Growth and Cytokine Production by Normal and Leukemic Human Leukocytes  

Tea is one of the world’s most highly consumed beverages, second only to water. It is affordable and abundant and thus has great potential for improving health of those in both developed and developing areas. Green, oolong, and black teas differ in the extent of fermentation and types of bioactive polyphenols produced. Green tea and its major polyphenol decrease growth of some cancer cells and effect production of immune system cytokines. This study compares the effects of different types of tea extracts on viability and cytokine production by normal and leukemic human T lymphocytes. Generation of the toxic reactive oxygen species H2O2 by extracts was also examined.

Synthetic Genetic Polymers Capable of Heredity and Evolution  
Vitor B. Pinheiro et al. Science 336, 341 (2012); DOI: 10.1126/science.1217622

Genetic information storage and processing rely on just two polymers, DNA and RNA, yet whether their role reflects evolutionary history or fundamental functional constraints is currently unknown. With the use of polymerase evolution and design, we show that genetic information can be stored in and recovered from six alternative genetic polymers based on simple nucleic acid architectures not found in nature [xeno-nucleic acids (XNAs)]. We also select XNA aptamers, which bind their targets with high affinity and specificity, demonstrating that beyond heredity, specific XNAs have the capacity for Darwinian evolution and folding into defined structures. Thus, heredity and evolution, two hallmarks of life, are not limited to DNA and RNA but are likely to be emergent properties of polymers capable of information storage.

Anti-ulcer activity of Ipomoea batatas tubers (sweet potato)  

Peptic ulcers occur in that part of the gastrointestinal tract which is exposed to gastric acid and pepsin, i.e., the stomach and duodenum. Gastric and duodenal ulcers are common pathologies that may be induced by a variety of factors such as stress, smoking and noxious agents including non-steroidal anti-inflammatory drugs. Ipomoea batatas tubers (sweet potato) contain ample amounts of antioxidants. It has been proven already by many scientific studies that antioxidants have ulcer healing properties. In reference to this, we tried assessing the ulcer healing effect of Ipomoea batatas tubers.

6-Substituted imidazo[1,2-a]pyridines: Synthesis and biological activity against colon cancer cell lines HT-29 and Caco-2  

A range of 6-substituted imidazo[1,2-a]pyridines were synthesized using a multicomponent coupling reaction. Most of these compounds were found to exhibit excellent activity against the colon cancer cell lines HT-29 and Caco-2, whilst not showing significant toxicity against white blood cells. Our studies have shown that the proteolytic phase of apoptosis was initiated 2 h after treatment with these imidazo-[1,2-a]pyridines. The data suggests that the imidazo[1,2-a]pyridine-induced cell death in HT-29 and Caco-2 cells is mediated via pathway(s) that include the release of cytochrome c from the mitochondria to the cytosol and the activation of caspase 3 and caspase 8.