



University of the Witwatersrand

October 2013

EDITORIAL

Researchers in the Faculty of Health Sciences continue to excel in bringing “home” the prestigious Vice Chancellor’s Research Award. Congratulations to **Professor Viness Pillay**, School of Therapeutic Sciences for being the 2013 winner of the Award (see Research News). In an (almost) uninterrupted list since 2007, the award has been captured by the following Health Sciences researchers: Professors Helen Rees (2012), Maureen Coetzee (2011), Shabir Madhi (2010), Charles Feldman (2009), and John Pettifor (2007). This is an outstanding achievement and bears witness to continued excellence in research in the Faculty. The HSR0 invites you to the ninth lecture in its **Prestigious Research Lecture Series** on November 26th at 5.30pm in acknowledgement of World Aids Day on December 1. Professor Maria Papathanasopoulos and Doctor Penny Moore will discuss “Antibody based HIV vaccines – are we any closer?” Don’t miss this thought-provoking lecture. Finally, the Faculty has recorded (to the end of September) the publication of 448 accredited articles. Well done to all – your endeavours are hugely appreciated in the light of the service delivery, supervision, teaching and training, and administrative duties with which you additionally contend!

Bev Kramer

LATEST RESEARCH NEWS

And the Vice Chancellor’s Award goes to...

Professor Viness Pillay is this year’s recipient of the prestigious **Vice Chancellor’s Research Award**. The purpose of this Award is to stimulate research and research-related scholarly activities by acknowledging and rewarding an exceptional member of the University who has been engaged not only in research but also in more general scholarly activities. Professor Pillay was acknowledged at the Council Dinner held on 18 October 2013.



Professor Pillay is a Personal Professor in Pharmaceutics. He holds the DST/NRF Research Chair in Pharmaceutical Biomaterials and Polymer-Engineered Drug Delivery Technologies and is the Director of the [Wits Advanced Drug Delivery Platform](#) (WADDP) in the Department of Pharmacy and Pharmacology, School of Therapeutic Sciences, Faculty of Health Sciences. Professor Pillay attributes his research success to a supporting team of researchers and a combination of passion and hard work ([Wits Weekly, Issue 37, 7 October 2013](#)).

Congratulations to Professor Pillay!

Professor Lynn Morris and team awarded the prestigious MRC Flagship Project Award



Professor Lynn Morris of the Virology Laboratory in the Centre for HIV and STI's, National Institute for Communicable Diseases and School of Pathology, Wits, together with an exceptional research team were awarded one of the esteemed **MRC Flagship Project Awards** for their study entitled "Antiviral properties of HIV vaccine-elicited antibodies". The project brings together the following research laboratories: the Antiviral Gene Therapy Research Unit (**Professor Marco Weinberg**), Wits University, the Centre for HIV and STI's Cell Biology Unit at the NICD (**Professor Caroline Tiemessen**) and the Perinatal HIV Research Unit (PHRU) (**Professor Glenda Gray**), Wits University. The research team also includes the following co-investigators: **Dr Penny Moore**, **Dr Nono Mkhize** and **Dr Bronwen Lambson**.

The Flagship awards were closely contested and it is of great importance that one of these awards has come to Wits. Congratulations to Professor Morris and her team for this exceptional achievement!

New President of the International Society of Hypertension

Professor Rhian Touyz completed her BSc (Hons), MBCh, MSc (Med), and PhD at the University of the Witwatersrand. She is currently the Canadian Research Chair in Hypertension at the Kidney Research Centre, Ottawa Hospital Research Institute (OHRI) at the University of Ottawa, Canada. She visited the Faculty in 2010 as part of the Alumni Diaspora Programme run by the Faculty Research Office. Professor Touyz has recently been appointed **President-Elect of the International Society of Hypertension (ISH)**. Her research interests are in molecular, cellular and vascular mechanisms of clinical and experimental hypertension. We wish Professor Touyz the very best as she takes on her new role.



Professor Anna Kramvis is the newly elected member of ASSAf



Congratulations to **Professor Anna Kramvis** for being elected as a **member of the Academy of Science of South Africa (ASSAf)**. Professor Kramvis is the Research Director of the Hepatitis Virus Diversity Research Programme in the Department of Internal Medicine, School of Clinical Medicine. She is also an Honorary Research Associate of the Victorian Infectious Diseases Reference Laboratory in Melbourne, Australia. Her primary research interest is the molecular virology of the hepatitis B virus, with particular focus on uniquely African strains.

Discovery Foundation Award

Dr Elizabeth Mayne was awarded one of the Discovery Foundation Awards in the **Academic Fellowship Award Category**. Dr Mayne is a consultant haematologist from the Department of Molecular Medicine and Haematology at the University of the Witwatersrand and the National Health Laboratory Services (NHLS). Although she is a medical doctor by training, her passion lies in research, teaching and training. "I believe that medicine can only be made stronger by a good foundation of basic science and teaching", said Dr Mayne. Congratulations Elizabeth!



Claude Leon Postdoctoral Fellowship for 2014

Two Postdoctoral fellows (**Dr Ian Murray** and **Dr Manette Marais**) from the School of Physiology have recently been awarded the prestigious **Claude Leon Postdoctoral Fellowship for 2014**.

Dr Ian Murray's research focuses on the physiological ecology and thermal biology of lizards in the Namib Desert. He is currently involved in several projects including research centred on Namibia's Husab sand lizard, which was only recently



formally described to science (1989) and is a species of management concern given its small geographic distribution centred on an area of rich uranium deposits, and its potential susceptibility to climate change.

Dr Manette Marais was awarded a PhD in Physiology in 2011 and has been interested in the physiological mechanisms of fever since her Honours year in 2007. She is particularly interested in the differences underlying fever mediation in different phyla and she has, over the past years, investigated different aspects of fever in birds. Congratulations to Ian and Manette!

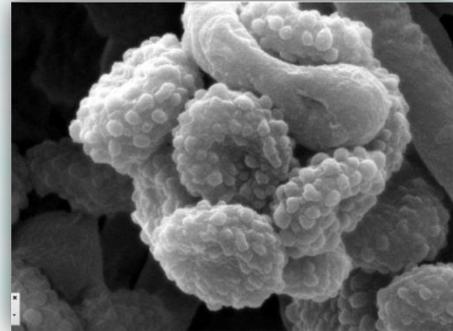


LATEST RESEARCH FINDINGS

A newly-discovered fungus causes a potentially deadly disease among HIV-infected South Africans

Lead authors Dr Chris Kenyon (Department of Medicine at the University of Cape Town) and **Dr Nelesh Govender** (National Institute for Communicable Diseases and **University of the Witwatersrand**) published a study entitled 'A Dimorphic Fungus Causing Disseminated Infection in South Africa' on 10 October 2013 in the prestigious *New England Journal of Medicine*. The researchers described thirteen cases of widespread fungal disease which occurred among HIV-infected patients. The infection was caused by a newly-described (and as-yet unnamed) opportunistic fungus in the genus *Emmonsia*, and was fatal in three patients. The infection was probably acquired after inhalation of fungal spores from the environment. No person-to-person transmission occurs with this infection, and fortunately, it can be treated successfully in most cases. Prior to this publication, disseminated disease caused by an *Emmonsia* fungus, which is very closely related to the newly-described one, had been described in only one case. The new fungus was cultured from blood in most cases and was detected using DNA sequencing methods. It was genetically related to but entirely separate from known, similar fungi. All thirteen patients had advanced HIV disease, and most were thought to have TB.

All had skin changes suggesting a widespread fungal infection. Once the diagnosis had been made, most patients experienced dramatic and rapid responses to antifungal treatment. In most patients, the skin lesions healed almost completely, they gained weight and their lungs recovered.



This *Emmonsia* fungus has probably been around for many years, but was not identified previously, as the disease is similar to certain other fungal infections that come from the environment. The source of the fungus in the environment, the way it gets into the body and the immune response to it, still needs to be researched. Some closely-related fungi can cause infection in healthy people; for example *Histoplasma* may cause an influenza-like illness (cave disease) in healthy persons, and several outbreaks have occurred among South African cave-explorers. In most described cases so far, the new fungus was an opportunist that took advantage of the weakened immune system of an HIV-infected person. Healthy persons may also be at risk for disease but further investigation is needed to clarify this.

Kenyon C, Bonorchis K, Corcoran C, Meintjes G, Locketz M, Lehloeny R, Vismar HF, Naicker P, Prozesky H, van Wyk M, Bamford C, du Plooy M, Imrie G, Dlamini S, Borman AM, Colebunders R, Yansouni CP, Mendelson M and **Govender NP** (2013). A Dimorphic Fungus Causing Disseminated Infection in South Africa. *The New England Journal of Medicine*; 369:1416-24.

Performance and safety of the second-generation female condom (FC2) versus the VA worn-of-women, and the Cupid female condoms

Dr Mags Beksinska, Professor Jenni Smit and Mr Ross Greener from the Division of the **Maternal Adolescent and Child Health (MatCH)**, in the Department of Obstetrics and Gynaecology published the results of their recently completed clinical trial on female condoms in the *Lancet Global Health* in July 2013.

New designs of female condoms have been developed to reduce costs and improve acceptability. However, donors such as United Nations agencies and international organisations purchasing female condoms as part of their international aid programmes normally require female condoms to be pre-qualified by the World Health Organisation and the United Nations Population Fund (WHO/UNFPA). To secure regulatory approvals, clinical studies are needed to verify performance of these condoms.

The clinical trial performed by the MatCH team was a randomised controlled, crossover trial carried out in China and South Africa. The trial aimed to assess the functional performance (breakage, slippage, invagination and misdirection) and safety of three new condom types; the Woman's Condom, the VA worn-of-women (VA w.o.w.) Condom Feminine and the Cupid female condom against the widely available WHO/UNFPA prequalified FC2 female condom from the Female Health Company.

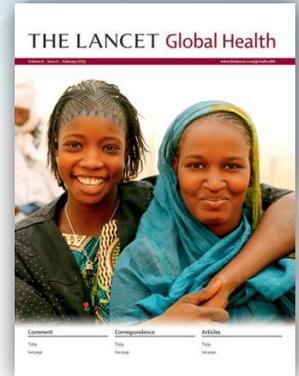
Women were asked to use five of each type of female condom and were interviewed after use of each type. In total 572 women completed all their follow-up visits. These women used at least one female condom of each of the four

female condom types in the study. Non-inferiority was demonstrated for all condom failure modes for the three female condom products in the trial (within the margin of 3% difference in mean failure), meaning that the three assessed female condom products are non-inferior to the FC2 regarding performance and safety.

The trial provided important function data for these devices and has been used to compile evidence for prequalification by WHO/UNFPA. As a result of this trial, the Cupid condom has already been approved by WHO/UNFPA and is available for public sector procurement. Manufacturers of the other female condom products are using the clinical trial data in their ongoing applications to regulatory authorities. This female condom functionality study was funded by the Universal Access to Female Condoms (UAFC) Joint Programme.

Beksinska ME, Piaggio G, **Smit JA**, Wu J, Zhang Y, Pienaar J, **Greener R**, Zhou Y, Joanis C (2013). Performance and safety of the second-generation female condom (FC2) versus the Woman's, the VA worn-of-women, and the Cupid female condoms: a randomised controlled non-inferiority crossover trial". [The Lancet Global Health, Volume 1, Issue 3, Pages e146 - e152, September 2013](#)

In addition to the article, an [editorial](#) and [comment](#) in the same edition of the Lancet Global Health referred to the trial.



FACULTY RESEARCH NEWS AND EVENTS

WADDP group does it again!

In the first week of October students and staff from the **Wits Advanced Drug Delivery Platform (WADDP)** attended the Academy of Pharmaceutical Sciences Conference which was held in Cape Town. The WADDP group won the **Best Research Publication Award for Pharmaceuticals** for the paper entitled "Surface-Engineered nanoliposomes by chelating ligands for modulating the neurotoxicity associated with β -amyloid aggregates of Alzheimer's disease".

Mufamadi MS, Choonara YE, Kumar P, Modi G, Naidoo D, Ndesendo VMK, du Toit LC, Iyuke SE and Pillay V (2012). Surface-Engineered Nanoliposomes by Chelating Ligands for Modulating the Neurotoxicity Associated with β -Amyloid Aggregates of Alzheimer's disease. *Pharmaceutical Research*, 29:3075–3089.

Wits Faculty of Health Sciences Postdoctoral Symposium 2013

The Faculty of Health Sciences (FHS) held the **FHS Postdoctoral Symposium** at the end of September at the new Roche Scientific Campus in Randburg. The symposium is held biennially in order to celebrate the cutting-edge research undertaken by the Faculty's Postdoctoral Fellows. The initiator and host of the event is Professor Beverley Kramer, Assistant Dean for Research and Postgraduate Support in the Faculty. The day consisted of a series of oral presentations as well as poster presentations. The posters were presented in an innovative manner on individual screens supplied by Roche. The presentations by all the Fellows were of exceptional quality. Participation by the hosts of the Fellows and other senior staff of the Faculty, contributed to the vibrancy of the discussion. Two excellent plenary lectures delivered by Professor Debbie Glencross, a senior researcher in the Department of Molecular Medicine and Haematology at Wits and Mr Clive Simpkins, a private media consultant and coach, added lustre to the day. The day was hugely enjoyed by all and closed with an excellent cocktail party.



Photograph: Some of the Faculty's Postdoctoral Fellows who attended the Symposium.

Faculty Lecture

Professor Janusz Paweska, who was recently promoted to a Reader/Associate Professor in the School of Pathology, (September 2013 Research Newsletter) delivered a lecture entitled "Natural History of Filoviruses: Current knowledge and future research" on the 3rd of October in the Faculty. His fascinating lecture described the development of a state of the art maximum biosafety facility (BSL-4) at the National Institute for Communicable Diseases (NICD) and discussed the enigma surrounding the natural transmission cycles of the Marburg and Ebola viruses. He emphasized that bats are the leading contenders as reservoir hosts. Professor Paweska also shared some of his team's experiences during outbreak response missions into Africa, including the 2005 Marburg disease outbreak in Angola, the 2006 Rift Valley fever outbreak in Kenya and the 2009 Ebola outbreak in the Democratic Republic of Congo.



Photograph: Left to right- Professors Beverley Kramer, Janusz Paweska and Elena Libhaber

Wits Physiotherapy Department celebrates its 75th Anniversary

The Physiotherapy Department in the School of Therapeutic Sciences celebrated their **75th Anniversary** on the 3rd of October 2013. The event was also used to launch a special edition of the *South African Journal of Physiotherapy* which featured research publications emanating from the Department. The celebratory event commenced with an overview and history of Wits Physiotherapy alumni followed by an introduction of the current Wits physiotherapy staff.



“The Department of Physiotherapy’s achievements over the past 75 years are numerous and its contribution to the profession, teaching, research and to health sciences is far-reaching,” said Professor Judy Bruce, Head of School of Therapeutic Sciences.

The keynote address for the evening was delivered by the first Head of School of Therapeutic Sciences, Professor Cealie Eales. One of the highlights of the event included a candid presentation by **Irene Fischer** who shared her personal perspective on the beneficial role of physiotherapy as a patient with a permanent disability following a traumatic head injury about four years ago. The event also provided both postgraduate and undergraduate students the opportunity to present their research.

70th Birthday Celebration of the Department of Occupational Therapy

As part of their **70th birthday celebration**, the Department of Occupational Therapy (OT) hosted an OT symposium. The symposium was held within the School of Therapeutic Sciences Research Day which took place in September 2013. It showcased research conducted by staff and alumni from the Department of Occupational Therapy.

The various research projects presented not only illustrated the innovative research being conducted in the field of occupational therapy, but also the diverse and dynamic nature of the occupational therapy profession. These included a presentation by Adjunct Professor Patricia de Witt, Head of the Department of Occupational Therapy entitled “Perceptions of clinical education on the Wits teaching platform” and many others.

Photograph: Front row- Associate Professor Lisa Wegner, Adjunct Professor Patricia de Witt, Mrs Paula Barnard-Ashton, Dr Daleen Casteleijn. **Back row-** Associate Professor Theresa Lorenzo, Dr Michele Verdonck.



First cohort of Carnegie Fellows to receive PhD degrees

The Carnegie Fellowship programme has been a huge success and all four of the Carnegie Fellows from the first cohort will graduate in December. Scientific clinical research is vital for contributing to the improvement of the health of the people of South Africa and these Fellowships have enabled young clinicians with an interest in research to obtain their PhDs.

Dr Susan Williams will be awarded her Doctor of Philosophy degree for her thesis entitled “The genetics of primary open angle glaucoma in black South Africans”; **Dr Martin Brand** for his thesis entitled “Potential novel approaches to risk identification in advanced peripheral artery disease”; **Dr Nimmisha Govind** for her research on “Genetics of rheumatoid arthritis in black South Africans” ; and **Dr Nirvarthi Maharaj** for her study “Myocardial deformation in African hypertensive patients with heart failure - An analysis using Speckle Tracking Echocardiography”.

Congratulations to our Fellows and their supervisors for the outstanding work they have done! We wish them the very best with their promising research careers.



WITSIE AT THE CUTTING EDGE: Researcher Profile

Dr Neil Martinson

**Deputy Executive
Director**

**Perinatal HIV Research
Unit (PHRU)**



[Read one of Neil's papers:](#)

Martinson NA, Barnes GL, Moulton LH, Msandiwa R, Hausler H, Ram M, McIntyre JA, Gray GE, Chaisson RE. New regimens to prevent tuberculosis in adults with HIV infection. *New England Journal Med.* 2011 Jul 7; 365(1):11-20.

Who are you and what is your academic/scientific training and background?

I obtained my MBBCh from the University of the Witwatersrand (Wits) in 1988 and did my internship at the Chris Hani Baragwanath Academic Hospital. After a stint at Bethesda Hospital in northern KwaZulu Natal and some time travelling through Europe which was funded by locums in the UK, I returned to South Africa to senior house officer positions in orthopaedics and paediatrics. I then worked in Soweto Community Health Centres for two years while doing vocational training in general practice under the mentorship of the Department of Family Medicine. I worked for the Pretoria City Council and subsequently for the Johannesburg Metro Council. I managed health services on the Eastern side of Johannesburg, overseeing the transition from immunisation and family planning clinics to comprehensive primary health care facilities. I played an integral part in infectious disease outbreak response missions. In 2001 I received funding to attend Johns Hopkins University where I obtained a Masters in Public Health. On return to South Africa, I started working at the Perinatal HIV Research Unit (PHRU) in the School of Clinical Medicine at Chris Hani Baragwanath Academic Hospital.

At the PHRU I have built a career on TB and HIV research, with over 70 peer reviewed publications and numerous research and implementation grants. I now oversee five high volume male circumcision sites in three provinces which together have performed a total of 43 000 circumcisions, preventing over 1000 new HIV infections. I also manage a self-sustaining fee-for-service clinic in downtown Johannesburg called ZuziMpilo (www.zuzimpilo.co.za). Finally, I have managed a large three-university TB research training programme which has provided specialised research training for a number of the University of the Witwatersrand's students and staff. I also supervise approximately five current Masters level students and one PhD candidate.

Explain the nature of the research that you are currently undertaking?

I collaborate with Dr Ebrahim Variava at the Klerksdorp Tshepong Hospital Complex where we have designed and managed several large studies assessing the impact of TB and HIV on individuals and populations. I am particularly interested in causes of death and how they relate to TB. With Dr Omar from Anatomical Pathology at the University of the Witwatersrand, I have conducted three autopsy studies, the last one looking at TB in people who died at home without a clear cause of death. With collaborators at Johns Hopkins University, I also oversee research studies at the PHRU assessing the impact of TB on pregnancy, and clinical trials on novel TB treatments and treatments to prevent TB. Together with Professor Bavesh Kana from the DST/NRF Centre of Excellence in the School of Pathology, we are looking at measures of bacillary response to TB treatment in HIV-infected patients diagnosed using the Gene Xpert MTB/Rif. I am also involved in work with Professor Caroline Tiemessen from the National Institute for Communicable Diseases (NICD), where we have established a cohort of unusual, HIV-infected individuals who are able to contain and even suppress their HIV infection spontaneously - without antiretroviral therapy. We are characterising their immune status. We are also planning to identify another group of unusual HIV-infected patients inherently able to resist TB

infection and TB disease. Our hope is that by comparing these unusual phenotypes with more common presentations of both HIV and TB, we will obtain clues for the development of novel vaccines or treatments.

What do you think is the most pertinent/relevant/significant contribution you have made to research/science/your field?

Two manuscripts reporting viral resistance in pregnant women who received single-dose nevirapine to prevent mother-to-child transmission of HIV - which I co-authored - have been cited well over 100 times. Our unpublished data showing extremely high rates of undiagnosed TB in adults who die at home is of real concern for TB control and I hope that it will lead to further research. My primary claim to research fame is that I am the first author on a *New England Journal of Medicine* article describing results of a clinical trial of preventive treatment for TB in HIV-infected adults.

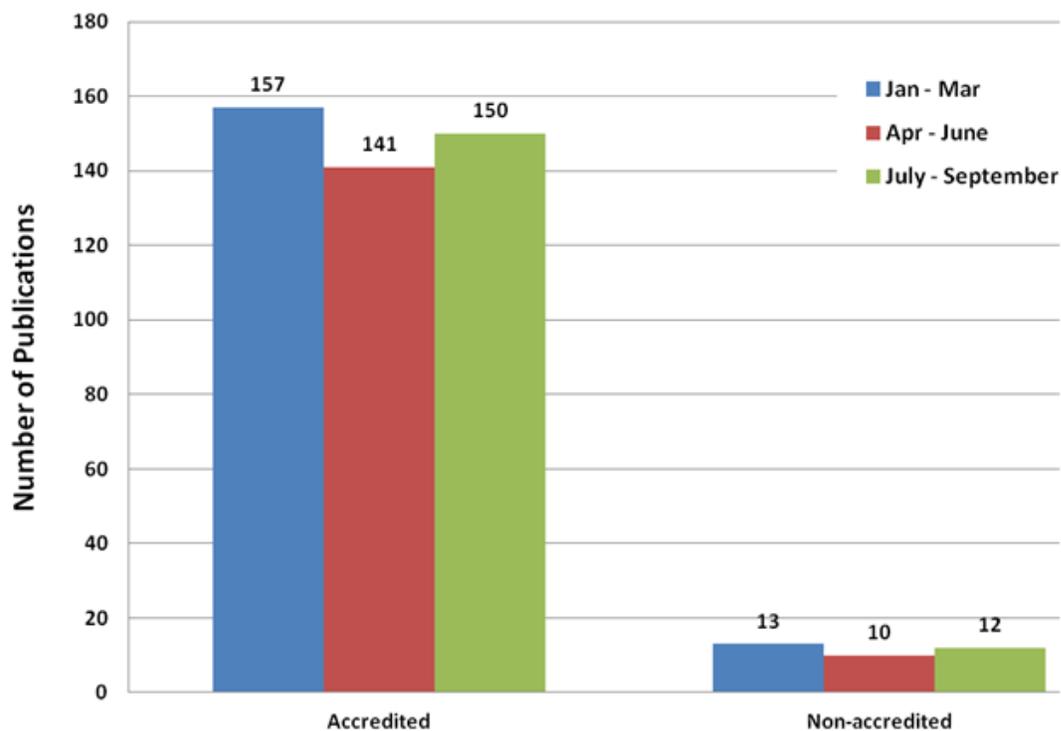
Did you have a particular mentor or supervisor who inspired you in research?

My stint at Hopkins was an enormous inspiration - seeing the possibilities both of what others had done as well as getting an understanding of study design and methods was hugely stimulating. Thereafter, Drs Chaisson, Gray and McIntyre showed me how it was, and how it could be done.

Tell us about what you do when you're not busy at work and carrying out cutting-edge research

Much of my time at work when I am not doing research is spent anticipating, responding to, and managing problems in my programmes and projects. However, I love spending time with my family, and at least weekly cycling, swimming and slow jogging interspersed with binging on nordic crime novels keeps me sane.

FACULTY PUBLICATIONS: January – September 2013



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**KEEP
CALM
IT'S
PUB QUIZ
NIGHT**

**Faculty of Health Sciences
Postgraduate Social**

Monday 18th November
17:00 - 20:00
Wits Medical School Foyer
(4th Floor)

Prizes up for grabs!!

- ? Best dressed
- ? Best team name
- ? Quiz winners

Book a table for 6 or come individually!

Snacks and drinks will be provided.

RSVP by 6 November to:
jeanine.phigeland@wits.ac.za



PRESTIGIOUS RESEARCH LECTURE 9

**"Antibody based HIV Vaccines -
are we any closer?"**

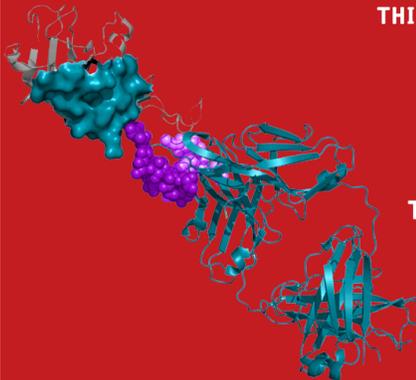


THIS PUBLIC LECTURE WILL BE PRESENTED BY:

**Professor Maria Papathanasopoulos
and
Doctor Penny Moore**

Tuesday, 26 November 2013 | 17:00 for 17:30
Public Health Auditorium, York Road,
Parktown

RSVP: Nomfundo Sibiyi
nomfundo.sibiyi@wits.ac.za | 011-717-2503



CPD EVENT

For more information and directions visit:
<http://www.wits.ac.za/health/hsro/pr19>



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Do you have any significant research news you would like us to include, or comments you would like to make? Please contact Nomfundo.Sibiyi@wits.ac.za (news items to reach us by 15 November 2013)

*The newsletter is edited by Professor Bev Kramer, Professor Andrea Fuller, Suretha Erasmus and Nomfundo Sibiyi
Thank you to all who contributed to this month's issue.*