

## CoE-MaSS weekly seminar series

THE DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND  
STATISTICAL SCIENCES (CoE-MaSS) WOULD LIKE TO PRESENT  
A SEMINAR BY

### Mr Phumlani Khoza

*(School of Computer Science and Applied Mathematics, University  
of the Witwatersrand, Johannesburg, South Africa)*

*“Computational Neuroscience Research Capacity  
Development in (South) Africa”*

Friday, 17 February 2017  
10h30-11h30



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**Broadcast live from:**  
Videoconferencing Facility, 1st Floor  
Mathematical Sciences Building, Wits West Campus

**How to connect to this seminar remotely:**

You can connect remotely via Vidyo to this research seminar by clicking on this link:  
<http://wits-vc.tenet.ac.za/flex.html?roomdirect.html&key=y0SSOwFsvsidbzg4qFdWXvvQtyl>  
and downloading the Vidyo software before the seminar.

You must please join in the virtual venue (called “*CoE Seminar Room (Wits)*” on Vidyo)  
strictly between **10h00-10h15**. No latecomers will be added.

**Important videoconferencing netiquette:**

Once the seminar commences, please mute your own microphone so that there is no feedback from your side into the virtual room. During the Q&A slot you can then unmute your microphone if you have a question to ask the speaker.

**Title:**

Computational Neuroscience Research Capacity Development in (South) Africa

**Presenter:**

Mr Phumlani Khoza, School of Computer Science and Applied Mathematics, University of the Witwatersrand, Johannesburg, South Africa, [Phumlani.Khoza@wits.ac.za](mailto:Phumlani.Khoza@wits.ac.za)

**Abstract:**

Computational neuroscience pertains to uncovering the function of the brain from an information processing perspective. The philosophical underpinning of this perspective is that the brain receives state information from the environment, and at the very least, has to produce motor commands for muscle tissue in order to achieve some objective. This can be viewed as a computational task with control objectives.

An understanding of computational neuroscience is crucial to understanding brain-related ailments such as Parkinson's disease, and to the development of appropriate medical treatments, or effective technological interventions with minimal usage side-effects.

In this seminar we'll introduce some of the basic concepts from the field, and discuss some of the dominant research directions and their corresponding results. We'll also motivate the need for developing computational neuroscience research capacity in the African context, and discuss the opportunities that can be harnessed to facilitate the process, particularly in the South African context.

**Short Biography:**

Phumlani (Nhlanganiso) Khoza is currently an Associate Lecturer, and a PhD candidate, in the School of Computer Science & Applied Mathematics at the University of the Witwatersrand. His overarching research interest pertains to developing tools to probe complex systems. His main focus concerns applying principles of computational neuroscience, and machine learning, to developing technologies in neuro-prosthetics, and unstructured data analytics domains, respectively.