

**Professor Oliver Turnbull**, Head of the School of Psychology at Bangor University, Wales, and a Mellon Distinguished Visiting Scholar in the School of Human and Community Development, at the University of the Witwatersrand, will be presenting a paper entitled 'The representation of the body in the brain. Eight things you didn't know, including (useful) tips on the neuroscience of erogenous zones.'

*We have known for roughly a century that there is a 'map' of the body in the brain, running in an orderly fashion from top to toe, and sometimes described as a 'little person' or homunculus. The anatomical distribution of this system, first fully identified by Wilder Penfield in the 1920's, lies in a strip of so-called primary somato-sensory (or 'body sensation') cortex. For some laypersons (and some undergraduate textbooks) this brain area is regarded as forming the basis of our 'body image' - the feeling we have of the extent and boundaries of our truly personal space.*

*This talk offers a review of some modern findings relating to the representation of the body. It includes discussion of the popular conception of Penfield's discovery, suggesting a number of simplifications that are now known to be inaccurate. These findings suggest, for example, that our body image is rather malleable following modest amounts of practice, that our body can be 'extended' to take ownership of tools, and that much of the body (including many of the most important areas) is not represented in primary somato-sensory at all.*

*The talk also involves discussion of the neuroscience of how body awareness can be transformed by damage to this representational system - so that (for example) we can 'own' body parts that we do not have (in phantom limb), or deny ownership of that which we do still have (in neglect, or body dysmorphia). Finally, (in the hope of increasing the number of attendees), the talk discusses how the organisation of primary somato-sensory cortex may explain the unpredictable and at times paradoxical distribution of the body's erogenous zones.*

**Date: 27 January 2010**

**Venue: Emthonjeni Centre Auditorium, Wits University, East Campus**

**Time: 13:15-14:45**

R.S.V.P: [kate.cockcroft@wits.ac.za](mailto:kate.cockcroft@wits.ac.za)

**Professor Guillaume Thierry**, a cognitive neuroscientist from the School of Psychology at Bangor University, Wales, will be presenting a paper entitled **'A window into the workings of the human mind: the example of bilingualism.'**

*The human brain is arguably the greatest biological wonder of all times. Everyone knows that the brain is the seat of the mind and that it implements our perception of the world. Understanding how it functions can be seen as the holy grail of modern biology. The brain, however, carries out a wide range of operations, some more complex than others. One of the most complex forms of these is language, an abstract and compact form of coded communication, without which humanity as we know it would not exist. The discipline that attempts to understand core relationships between the brain and language processing is the cognitive neuroscience of language. It explores how lesions in specific brain regions of patients and patterns of brain activity over time relate to language comprehension, manipulation, and production. One could argue that understanding this is challenging enough, but some go further and study how one human brain handles two or more languages. This particular research track is fertile because it combines the study of human language with that of another highly evolved and complex mental operation system in the brain: Attention. Being able to understand or produce one language while keeping the other language under full cognitive control, being able to switch back and forth from one language to another, requires high levels of executive control, probably involving mental inhibition and selection in their finest forms. Modern techniques of investigation such as magnetic resonance imaging or electrophysiology offer invaluable insight into the workings of the bilingual mind at various representation levels: sounds and spelling of language, order and grammatical properties of words, meaning of words and sentences. We can now start dismantling and modelling the intricate processes at the core of language and human thought.*

**Date: 20 January 2010**

**Venue: Geology Lecture Theatre, Wits University, East Campus**

**Time: 13:15-14:45**

R.S.V.P: [kate.cockcroft@wits.ac.za](mailto:kate.cockcroft@wits.ac.za)