

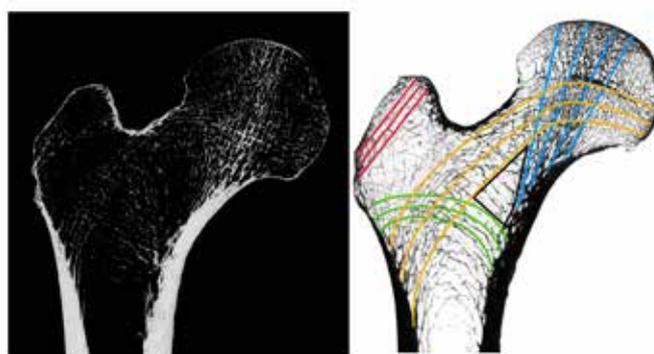
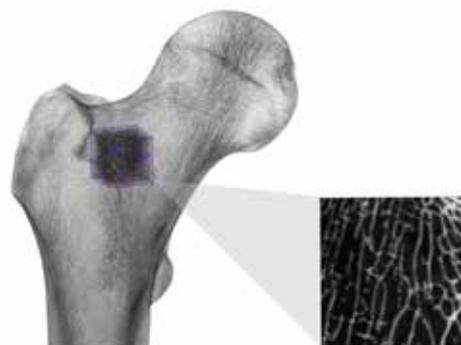
# ‘Bakeng se Afrika’

## Forensics ‘For Africa’

**MicroCT will play a central role in a new project to develop a digital repository of skeletal images for research and teaching purposes.**

The three-year project, titled *Bakeng se Afrika* (For Africa), will be coordinated by the University of Pretoria's Forensic Anthropology Research Centre (FARC), but two other South African universities – Stellenbosch University and Sefako Makgatho Health Sciences University – as well as three European universities and the National Energy Corporation of South Africa (Necsa) will also be involved. The project has been made possible by a €1 million (R15.9 million) grant from the Erasmus+ Programme of the European Union.

A microCT facility was installed at Necsa in 2011, and has been used by researchers and postgraduate students to acquire a large quantity of three-dimensional data on human bones, especially skulls. This data is useful to other researchers – both nationally and internationally – from the anatomical science, bio-engineering and dentistry fields. Together with outputs from other methods, such as Lodox Statscans and CBCT scans, it will be made available in a digital archive. Strict ethical guidelines will apply, however, with research projects requiring ethical approval from institutional committees before access is granted to the repository.



Marine Cazenave, SMU funded by EU Erasmus+



Brandon Anderson, Flickr

### What is Forensic Anthropology?

Forensic anthropology is the examination of human skeletal remains to assist law enforcement in identifying the deceased. A biological profile that includes sex, approximate age, height and ancestry can be created, based upon physical characteristics that have been determined from the study of human skeletal differences. The time since death can be estimated, while evidence of bone injuries, medical procedures and diseases can assist in identification, and sometimes even indicate the likely cause of death.

### MicroCT meets ...

#### Forensic Files

MicroCT may also be used by forensic scientists in analysing evidence that might assist in prosecution. For example, toolmarks on bone can provide information about a victim's murder or subsequent dismemberment, with differences between blunt-force trauma and straight-edged or serrated blades clearly apparent.

Research studies have used microCT to analyse both gunshot residue in wounds and ballistic impacts on bone to estimate firing distance, as well as blood spatter on textiles. And detailed microCT imaging of the metamorphic development of blowfly larvae may ultimately help to refine estimates of post-mortem interval.

The limited availability of microCT – together with a lack of replicated scientific studies to determine the validity of such research findings – means that it is still an emerging technology in forensic science, but it promises to be a powerful tool in future investigations.