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UCT providing healing through science in an unprecedented transformational process

An interdisciplinary team of academics from the University of Cape Town (UCT) and two international institutions has conducted a series of scientific studies on the remains of nine people from Sutherland to uncover a range of findings in an unprecedented moment through which science is used for restorative justice.

The study followed a request from the Abraham and Stuurman families in Sutherland, where the sacred remains had been buried before they were donated to the university in the 1920s. In February 2017, an archival audit by the UCT Curator of Human Remains revealed that the remains of these nine people from Sutherland had been unethically acquired, and the university immediately put a moratorium on these.

• Read the VC Desk: Restoring ancestors to their home.

Following an extensive public participation process and engagements with the community and other stakeholders, the families were identified late in 2018 and UCT began a restitution process for the sacred remains. The process – led by the Deputy Vice-Chancellor: Transformation, Professor Loretta Feris and the Office for Inclusivity and Change – is ongoing.

• See the timeline.

Part of the process included a comprehensive scientific study which could influence national policy on restitution and be precedent-setting internationally. A team of scientists from across various disciplines worked together to establish the identity of the individuals; reconstruct their faces as they would have appeared at their time-of-death; provide insights into where they lived, their diet and the conditions in which they lived; determine their sex, height and estimate age; establish any medical conditions they had and the cause-of-deaths; and determine their genetic relationship. The team also conducted a survey of the Kruisrivier farm cemetery where they had originally been buried at, did an in-depth analysis of the disturbed graves, and examined the history of the farm and of the area.

The team comprised five academics from UCT; two from Face Lab at Liverpool John Moores University, UK; and two from Max Planck Institute for the Science of Human History, Germany.

UCT Vice-Chancellor Professor Mamokgethi Phakeng described the restitution process as a transformational moment that enabled the institution to provide redress and social justice through science. The process demonstrated academic excellence as well as socially-responsive and community-driven research.

Professor Phakeng said: "While it is impossible to undo the injustices endured by these men, women and children, we hope that this process of restitution will go some way to restore the dignity that was stolen from them and to give their descendants the opportunity to remember and honour their ancestors. This process will potentially impact on future South African legislation around similar processes."

• Full version of Professor Phakeng to be available on the <u>UCT YouTube</u> channel.

A summary of each of the areas in the unprecedented interdisciplinary study is as follows:

Biological reports: some of the key finding by Dr Victoria Gibbon from the Department of Human Biology, UCT, include that adults had relatively short stature, and squatting facets were found in three individuals, evidence of a culturally important sitting position of San people. Two individuals showed signs of untimely death with cranial trauma: Klaas Stuurman and the 'pre-colonial individual'. Nearly all the adults showed signs of poor dental health. Dental infection was widespread and was a leading cause of death before modern dentistry. Adults showed signs of osteoarthritis, resulting from heavy physical labour and extremely active lives.

• <u>Read the full article.</u>

Chemical (Isotope) analysis: A study of the chemical (isotopic) composition of the remains by Professor Judith Sealy (Department of Archaeology, UCT) provided information on the diets and environments where these people lived: a mainly winter rainfall environment, but a very dry one. The composition of Klaas Stuurman's tooth shows that as a child he lived elsewhere (not in Sutherland). This correlates with historical records that as a child, he was part of an independent hunter-gatherer group living between Sutherland and Carnarvon when he was brought to Sutherland to work on the farm.

• Read the full article.

DNA analysis: The genetic sex of all nine individuals was obtained with high degree of accuracy by Dr Stephan Schiffels and PhD student Joscha Gertzinger (Department of Archaeogenetics, Max Planck Institute for the Science of Human History, Germany). There was no genetic relationship between the children and the children were not closely related genetically to any of the nine individuals. More detailed analyses were done on three individuals (Saartje, Klaas, and Jannetje) with the best results showing highest affinity to the Khomani San. Klaas Stuurman and Saartje are second-degree relatives (for example, double cousins or half-siblings). Jannetje is a third-degree relative of both Klaas and Saartje (perhaps a first cousin).

<u>Read the full article.</u>

Computed Tomography (CT) scans: Computed tomography provides a means to image the body in three-dimensions (3D). The scanned images enabled a study of the interiors of

the skulls. The outcome of the imaging process was a high-resolution CT scan of each person's cranium. This was converted to a detailed 3D model of each individual which formed the basis of the facial reconstruction. This study was conducted by Dr Tinashe Mutsvangwa (Department of Human Biology, UCT).

• Read the full article.

Facial reconstruction: Facial reconstruction refers to the remodelling of facial muscles and soft tissue, and estimation of facial features, to recreate an accurate craniofacial shape based on the anatomy of a skull. It was only possible to produce eight reconstructions as the skull of one individual (Totje) is missing. The final depictions from the study by PhD student Kathryn Smith and Professor Caroline Wilkinson (Face Lab, UK) presented these individuals as they probably appeared at the time of death. Decisions were informed by the biological analyses and historical and contemporary visual research. This component of the study was supported by National Geographic Society.

• Read the full article.

Archaeological study: Professor Simon Hall from the Department of Archaeology, UCT, did an analysis of the labour cemetery at Kruisrivier. Some of the key findings include that out of a total of 38-39 graves, six or seven were disturbed. These are the graves from which the remains were removed. The remnants of the disturbed graves indicate that most were Christian style burials, with only one clearly identified as Khoesan.

• Read the full article.

Historical study: The historical research conducted by Professor Nigel Penn of the Department of Historical Studies, UCT reveals that the farm "Kruisrivier" in the Roggeveld was in the heart of a bitterly contested frontier zone between the Khoesan and the colonists. Khoesan resistance to colonial encroachment in the region began in the 1740s and continued until deep into the 19th century. Colonial commandos were responsible for committing many massacres in the region and placing subjugated Khoesan as labourers on surrounding farms. The skeletons exhumed from "Kruisrivier" were those of farm labourers whose long history of exploitation lies in the obscurity of 19th century Cape rural history – which needs further research – but the violence which they suffered originated in relationships established in the 18th century.

- Read the full article.
- <u>Visit the feature page on the UCT website for more details, images and videos.</u>

NB: Facial images produced by Face Lab at Liverpool John Moores University, supported by National Geographic Society.

Please credit in all images that show the photos.

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