

HAPPY BIRTHDAY, UJ



The University of Johannesburg celebrates its 10th anniversary with the vice-chancellor and principal, Professor Ihron Rensburg (left), together with colleagues. In January 2005 UJ was formed when RAU (Rand Afrikaanse Universiteit), the Soweto and East Rand campuses of Vista University in Soweto and Wits Technikon were amalgamated. Today UJ has about 50 000 students on three campuses. Next week the *Saturday Star* will publish an interview with Rensburg in which he talks about the challenges involved with creating this massive Joburg institution.

First step to 'designer babies'?

KASHIEFA AJAM

TWO top fertility experts are in disagreement over Britain's decision to allow a controversial "three-parent" technique that doctors say will prevent some hereditary terminal diseases, but which critics see as a step towards creating "designer babies".

After a tense 90-minute debate this week, Britain's parliament voted 382-128 in favour of the technique. The vote paves the way for a medical world first. The technique involves intervening in the fertilisation process to remove mitochondria, which act as tiny energy-generating batteries inside cells and which, if faulty, can cause inherited conditions such as fatal heart problems, liver failure, brain disorders, blindness and muscular dystrophy.

Dr Lawrence Gobetz, reproductive specialist and managing director at Vitalab in Sandton, which specialises in infertility, said doctors were not "playing God" by eliminating potentially deadly illnesses, but that the technique would essentially help human beings.

"This technique can't be used for parents who want to balance their family with an extra girl or boy or those who want their child to look a specific way. That is not allowed by law.

"But the technique can help parents with genetic diseases so their child may be perfectly healthy."

UK votes for 'three-parent' technique which could eliminate hereditary genetic diseases

Gobetz said the procedure was still in the research phase in South Africa, but it was encouraging that Britain had succeeded in legalising the three-parent technique.

Dr Klaus Wiswedel, at the Cape Fertility Clinic, criticised the coining of the term "designer babies", saying it had nothing to do with medicine. "We have had three-parent children for many years – for example, egg donation, sperm donation and surrogacy. In all these cases there can be three parents."

Wiswedel said the three-parent technique had been banned in the US for ethical and medical reasons because it could produce a "hybrid" human.

"There could be any number of unintended consequences when this technique is used. There is a bigger risk of chromosomal abnormalities."

Wiswedel said doctors had been conducting biopsies on embryos to check for abnormalities for years.

"By doing a biopsy we can check if the embryo is normal. If it is not normal, we can test another embryo. With this method, the result is 100 percent."

But Gobetz said mitochondrial diseases could not be excluded with just a

biopsy. "Why would we pursue this technique in the first place? It is because a biopsy is not enough."

International charities, advocacy groups and scientists had urged the UK to pass laws to allow the treatment, saying it brought a "first glimmer of hope" for some families of having a baby who could live without suffering.

"We have finally reached a milestone in giving women an invaluable choice, the choice to become a mother without fear of passing on a lifetime under the shadow of mitochondrial disease to their child," Robert Meadowcroft, chief executive of the Muscular Dystrophy Campaign, said after the vote.

In an open letter to MPs, 11 international campaign groups, including the US United Mitochondrial Disease Foundation, described mitochondrial disease as "unimaginably cruel".

"It strips our children of the skills they have learnt, inflicts pain that cannot be managed and tires their organs one by one until their little bodies cannot go on any more," they wrote.

What is the "three-parent" technique?

Dr Jaysen Knezovich, laboratory director and medical biological scientist

at Genesis Genetics South Africa, describes it as follows.

Genetic material, DNA, is housed in two regions in a human cell. Nuclear DNA is in the nucleus of a cell, and usually contains two copies of each chromosome, giving a total of 46. These chromosomes carry the vast majority of our genes. Mitochondria lie outside the nucleus, and are responsible for most of the cell's energy production. Damage to mitochondrial DNA, such as genetic mutations, can lead to diseases. Mitochondrial disorders are often associated with neurological disorders.

Your nuclear DNA is inherited from your parents – half the number of chromosomes, 23, from your mother (through the egg), and half, 23, from your father (through the sperm), to give you 46 chromosomes. However, mitochondrial DNA is almost exclusively inherited from the mother.

In vitro fertilisation (IVF) techniques are used to produce the "three-parent baby". The aim is to exclude (remove) genetically damaged mitochondria shortly after fertilisation and to replace it with genetically normal ("healthy") mitochondria from a donor egg, in an attempt to prevent the transmission of a genetic condition associated with the mother's mitochondria.

This early-stage embryo is transferred to the mother's uterus, and this will hopefully give rise to a healthy pregnancy.

Triumph at last in battle for a DNA database

VANESSA LYNCH

BLOOD, hair, saliva and skin cells – these are just some of the biological sources of DNA that crime scene investigators could have collected from the scene where my father was murdered, his body or his clothing.

Tiny amounts of biological evidence, such as a few cells, contain enough DNA to obtain a person's forensic DNA profile. This is one of the reasons why DNA is such a useful form of evidence. It is almost impossible for criminals not to leave some of their cells behind at a crime scene.

Tragically, no biological evidence was collected from my father's crime scene and what was collected was later discarded.

It was not only the police who failed to recognise the value of collecting and preserving DNA evidence. Security guards, paramedics, friends and relatives all contributed to the destruction of the crime scene by contaminating, removing, cleaning and consequently obliterating the valuable clues left by the assailants.

My father's murderers remain at large.

Two weeks after my father's death, still reeling from the loss, I was dealt a blow that was equally devastating: the investigating officer closed the file in my presence and told me they simply had no evidence.

I look back at that day and often wonder how I found hope when all I felt was despair. Perhaps the hope at that stage was as small as a single cell. But that was enough.

I learnt then as I know now that DNA evidence is the "gold standard" – the forensic tool of choice throughout the world. Used in conjunction with a DNA database, it uses as a criminal intelligence tool are compounded. This was being achieved in countries that had laws that allowed them to expand their DNA databases.

But in 2004, a DNA database and its potential for crime resolution had yet to be realised in South Africa. A lack of legislation and understanding prevented our police and the government from building on its phenomenal powers to create accountability – people were, still are, getting away with murder.

I left my career as a commercial attorney and started the DNA Project – an NGO dedicated to achieving justice through DNA evidence and to lobbying government for changes to the law.

This conviction has, 11 years later, been translated into the DNA Act, officially called the Criminal Law (Forensic Procedures) Amendment Act 37 of 2013, which came into force on January 31.

The act allows for DNA samples to be collected from all people who are arrested as well as from those convicted of Schedule 8 offences, before they are released from

OPINION



VANESSA LYNCH

prison. The DNA profiles obtained in this way and from samples collected at crime scenes where there is no match, and determine whether a serial offender is involved.

The database will also link crimes where there are no suspects, exclude suspects where there is no match, and determine whether a serial offender is involved.

Even if a perpetrator is not identified through the DNA database, it can be established whether crimes are linked by comparing the DNA profiles found at different crime scenes.

Cold cases may be solved by linking convicted offenders or arrestees to other crimes – or prisoners may be exonerated.

Another important aspect of the DNA Act is that it will allow authorised, trained police officers to collect DNA samples from arrestees and convicted offenders through a simple cheek swab. Training begun last month and 5 000 detectives are expected to have been trained by the end of March, with thousands more to be trained over the next few years.

Key to the successful implementation of the DNA Act will be the establishment of the National Forensic Oversight and Ethics Board, which will provide ethical oversight over the national DNA database and handle complaints relating to the taking, retention and use of DNA samples and forensic DNA profiles.

The board comprises 10 members, half of them from outside the government. Its core functions will include monitoring the implementation of the DNA Act and proposing improvements regarding the database.

Having fought tirelessly for 11 years for the promulgation of the new law, and for greater awareness of the importance of preserving and protecting crime scenes, many people ask whether I have a sense of achievement and am ready to move on.

Hell, no! The real work begins now because unless the act is im-

A FORENSIC DNA profile is a unique list of numbers obtained from a person's DNA that acts as a personal identifier. It contains no information about physical characteristics, mental disposition or medical history except their sex.

plemented successfully, it will be no more than a paper tiger.

Having heard yesterday that I have been appointed a member and deputy chairwoman of the National Forensic Oversight and Ethics Board for five years, my conviction about making a difference is even stronger.

There is no one with as much hope as I have that this will be achieved over the next five years.

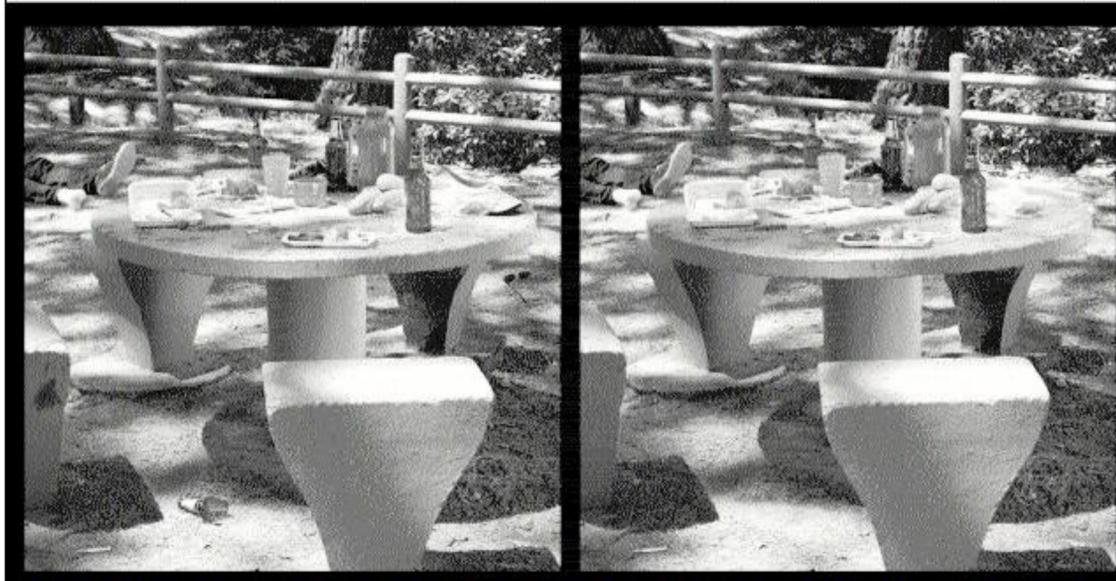
Meanwhile, here's what you can do to help: never disturb a crime scene.

DNA convicts! When a crime scene is not disturbed, forensic evidence has the power to determine exactly what happened and who committed the crime. Disturb the crime scene, and you may for ever lose the opportunity to find the culprit.

Vanessa Lynch is the founder of the DNA Project.

Spot the missing evidence

FIND 6 PIECES OF MISSING DNA EVIDENCE IN THE PICTURE ON THE RIGHT. To find the solutions go to <http://dnaproject.co.za/spot-the-difference>



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