

AN INCUBATOR OF IDEAS

UP has the highest number of patents¹, proving that our research makes a meaningful contribution to South Africa, Africa and the world.

177

New inventions disclosed²

149

International patents filed²

Source:

1. 2020 submission to the Department of Higher Education and Training

2. For the years 2013-2022

WE MAKE TODAY MATTER

We ensure the knowledge and solutions we discover are both relevant today, and robust enough to have a lasting, positive impact on our world.

It is a reminder that, within every day, lies the potential to change the world.

DOING RESEARCH THAT MATTERS

UP is ranked first in Africa for Environmental Impact (#139 globally) and third in Africa for Social Impact (#161 globally)¹. A small sample of recent research confirms the impact our research has on society.

- Undertaking cancer research using human hormones as a possible cure for cancer
- Producing nanobodies to speed up the testing and treating of COVID-19 patients, using antibodies from the Camelidae family
- Creating customised and personalised 3D modelled cochlear implants for patients with profound hearing loss
- Using gene editing of plants as a new form of pest control
- Patenting the use graphene as a wool to revolutionise various industries, leading to a cleaner future
- Researching new kinds of leadership needed to ensure sustainable futures
- Redesigning aeroplanes to be cleaner, faster and cheaper using albatross flying techniques
- Creating modern foods from Africa's indigenous crops
- Revealing southern Africa as the birthplace of modern Homo sapiens.

Source:

1. 2022 QS Sustainability Rankings

FUTURE-FOCUSED

We are developing future innovators through a number of projects and partnerships.

African Global University project – projecting African knowledge perspectives to the world

Alliance for African Partnership – collaborating for sustainable futures for all

TuksNovation – a high-tech business incubator available to all UP students

The Digital Capability Laboratory – employing digital collaborative learning to develop future-fit programmes

United Nations Children's Emergency Fund – supporting learners to make a successful transition to higher education through digital learning.

UNIVERSITY OF PRETORIA

WHERE IDEAS TAKE FLIGHT

2023

Innovation knows no boundaries.

It stretches beyond disciplines and geographical borders. It unlocks the safety gate of traditional thinking. It's a state where new futures are being designed.

If innovation is the logical outcome of the search for answers, the University of Pretoria produces a world of answers, answers that help create sustainable futures for South Africa, Africa and the world.



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Make today matter

www.up.ac.za

HELLO, AI

We're helping to design new futures with the research we do today.

3 Mobile robots on staff:

Stevie

A telemedicine mobile robot that helps treat intensive care unit patients

Libby

A library client-service robot

smWoef

A robot dog that collects data in hard-to-reach and at-risk locations

5

Research chairs focus on 4IR technologies and data integration to proactively solve current and future problems



GLOBAL LEADER IN IMPACTFUL RESEARCH

As a member of the Worldwide Universities Network – a network of 24 leading research universities on six continents – UP is recognised as a valued research partner. Here's why:

- Rated in the top 1% in 14 of 22 ESI knowledge fields
- Collaborates with over 3 000 institutions across the globe and has around 230 international institution-wide partnerships across 70 countries and six continents
- About 44% of the research we conduct is done with international collaborators
- Mineral and Mining Engineering is ranked #33 in the world¹

Source: 1. 2022 QS World University Rankings by Subject

Working hand in hand with AI

Makerspace

First university in SA to have a "makerspace", a creative laboratory where students can create prototypes and test ideas using 3D printing and IoT technologies

RapidAI

Steve Biko Academic Hospital (SBAH) is the first hospital in Africa to implement an artificial intelligence tool to assess the brain tissue in stroke patients

RIPper

FABI has developed a bioinformatic software tool that allows scientists to unravel important evolutionary implications for deadly fungi that threaten biodiversity and agriculture

Some of the world-first technologies created at UP

dbTrack – measures sound exposure in a person's ear canal, with smartphone feedback

Masakhane – a machine learning tool that translates regional languages in Africa not represented in technology

Craniofacial reconstruction

– a computer program to recreate facial features and speed up identification of victims, reconstruct faces after surgery and help feedlot producers with precision feeding



THE SPACE TO IMAGINE

We have state-of-the-art facilities and we drive digital leadership.

80+ Research Institutes and Centres

51 Research chairs hosted across seven faculties

8 Transdisciplinary research and innovation hubs generate new knowledge, helping to solve some of the world's toughest challenges

FABI

World-renowned for developing novel food and fibre crops

Engineering 4.0

Research and training hub for smart transport systems and smart cities

Innovation Africa@UP

Where smart and precision agriculture ensures food security

Future Africa

Transforming the world through African research excellence

Centre for Human Rights

Advancing human rights through education, research and advocacy

Centre for the Future of Work

Preparing people and organisations for the future.

UP Institute for Malaria Control

Longest standing transdisciplinary research initiative at UP

Javett-UP Art Centre

Introducing the Arts of Africa to the world, and enhancing transdisciplinary learning through the arts



PIONEERS ON THE AFRICAN CONTINENT

As a leading African university, UP plays host to a number of innovative platforms to ensure Africa achieves sustainable and inclusive development.

- World's leading laboratory in DNA typing of rhinoceros
- First WHO Collaborating Centre in Africa (for the prevention of deafness and hearing loss)
- Africa's lead laboratory in malaria control
- Africa's first independent transport reference and testing facility
- Africa's first Virtual Reality Centre for mine design
- First university in Africa to sign an agreement with Cornell University, to collaborate on research focusing on sustainability
- Only university in Africa to belong to the University Social Responsibility Network, which has 16 members from across the world
- Hosts the leading Centre for Viral Zoonoses in Africa
- First portable emissions measurement system in Africa to help set realistic carbon emission targets
- Hosts one of two Centres for the Study of the United States in Africa
- Hosts the only Centre for Asian Studies in Africa.

