



Prof Francis William Petersen
Rector and Vice-Chancellor (UFS)

Bio:

Prof Francis William Petersen

Francis Petersen is the Rector and Vice-Chancellor of the University of the Free State in South Africa. He was previously Deputy Vice-Chancellor of the University of Cape Town, Dean: Engineering and the Built Environment at the University of Cape Town, the Executive Head: Strategy at Anglo American Platinum, Executive Vice-President: Research and Development at Mintek, and Head of the Department of Chemical Engineering at the Cape Technikon (*now the Cape Peninsula University of Technology*). He graduated from Stellenbosch University with BEng (Chem), MEng (Metal), and PhD (Eng) degrees, and completed a short course on Financial Skills for Executive Management with IIR Training. He is a recipient of the Ernest Oppenheimer Memorial Trust Award for research excellence, and the Cape Technikon (*now the Cape Peninsula University of Technology*) Researcher of the Year Award; he is a regular reviewer and member of a range of editorial boards for international journals.

He is a non-executive director on the boards of Fruits Unlimited, Bigen Africa, and Stone Three Digital. He was, among others, chairman of the board of the Council for Scientific and Industrial Research (CSIR), a non-executive director on the board of Royal Bafokeng Platinum, a member of the South African Minister of Science and Technology's National Advisory Council on Innovation (NACI), deputy chairman of Mintek, and a member of the board of the South African Diamond and Precious Metals Regulator.

Francis has extensive experience of management at various levels within the university and industry sectors. He believes in teamwork and has played a key role in various initiatives within higher education, industry, and science councils. He is the founder of the first cohort of industry research organisations in the minerals and energy sectors (M & E G9) and has been actively involved in strategic planning with regard to R&D in the science and technology sector, joint venture formation, and scenario development. Francis serves on various national and international technical, editorial, and advisory committees, is actively involved and has consulted widely to the South African engineering and built environment industries. He has published more than 160 papers in international journals and conference proceedings.

OPENING ADDRESS: 'Celebrating African Education'

AFRICA DAY CELEBRATIONS 2022 23 May 2022; UFS SOUTH CAMPUS; 13:00

INTRO

- It is a tremendous honour for me to be here today at the start of our multi-faceted programme to proudly celebrate our shared African heritage over the next few days.
- As fellow Africans, we indeed have much to celebrate in terms of culture, creativity, natural beauty, diversity, character, and wisdom locked up in the people and places that make up our unique continent.

HISTORIC CHALLENGES

- When it comes to **educational development**, there is certainly no other continent that has faced the same trials and challenges as ours.
- Decades of oppression, slavery, colonisation, inequality, war and division have left an indelible mark on Africa; and one of the inevitable, most significant casualties has been the education of her children.
- But in the harsh crucible of history, *character, tenacity*, and a sense of *ubuntu* were forged, translating into an exciting, fertile breeding ground for *new knowledge creation, independent thought, and innovation*.
- Over the years, we have been blessed with visionary leaders who have realised the unique potential locked up in our continent.
- One of them was **Kwame Nkrumah**, the first president of an independent Ghana, and keen promoter of Pan-Africanism. He said: *"It is clear that we must find an **African solution** to our problems, and that this can only be found in **African unity**. Divided we are weak; united, Africa could become one of the **greatest forces for good** in the world."*
- More recently, **Paul Kagame**, President of Rwanda, echoed this sentiment, when he said: *"Africa's story has been written by others; we need to own our problems and solutions and write our **own story**."*
- And over the past few decades, on many fronts and in many spheres – also in education – this is exactly what has been happening.

GROWTH IN ACCESS TO EDUCATION

- Today, Africa has come a long way in shaking off the image of a continent that is consistently trailing the rest of the world for investment, development, direction, and validation.
- We are diversifying our economies to move away from economic dependence on the Global North, and actively searching for African solutions to African problems.
- While Africa has established itself as an attractive investment destination, it is now more sought after for its **people** than for its **physical assets**.
- And its people have been driving exciting and encouraging developments in education.
- Across the continent, education has **expanded dramatically** in recent years. The proportion of children completing primary school across countries has risen from 27% to 67% between 1971

and 2015, while the proportion of learners completing lower secondary school has risen from a mere 5% in 1971 to 40% in 2015.

- This growth has continued over the past seven years – despite global setbacks in school attendance caused by the COVID-19 pandemic.
- Similarly, the **massification of higher education** has been a trend across the continent in recent years, with more and more African countries now subsidising students from needy households, resulting in opportunities for tertiary education no longer being restricted to high-income families.

CONTRIBUTION TO GLOBAL KNOWLEDGE

- In terms of Africa's contribution to global knowledge, the world is slowly but surely acknowledging the abundant evidence of scientific innovation contributed by African scholars – not only at present, but since the earliest times.
- Examples of these historic innovations are the **unique numeration systems** developed thousands of years ago in Nigeria and the DRC; ancient Tanzanian **furnaces used in engineering and tool making** that far exceeded those of the Romans; and ancient African discoveries concerning **stars and planets** that formed the building blocks of modern-day astronomy.
- Across our continent, African history, achievements, and discoveries have been absorbed into school curriculums, replacing a Eurocentric focus in education, and fulfilling the vision of Africans *owning their own story*.
- Most higher education institutions – the UFS included – have over the past decade or two also been engaged in a comprehensive, systematic process of decolonising our curricula – incorporating the knowledge created on our own continent in various study fields.

INDIGENOUS KNOWLEDGE SYSTEMS

- The recognition of indigenous knowledge has been gaining ground world-wide.
- Here at the UFS, Indigenous Knowledge Systems is one of our key focus areas. In my presentation planned for Wednesday on our Bloemfontein Campus, I will be expanding on some of these exciting initiatives.
- Ensuring **access** to education, but also improving the **quality** of research, has become a central objective of science, technology, and innovation policies in many African countries.

EDUCATION OBSTACLES IN AFRICA

- But despite the encouraging milestones that education has reached in Africa, it is clear that much remains to be done.
- At around 35%, the illiteracy rate in sub-Saharan Africa remains the highest in the world.
- In South Africa alone, around 40% of all students drop out of school before completing Grade 12 – with girls making up the majority of this group.
- The old African proverb comes to mind: *If you educate a man, you educate an individual; if you educate a woman, you educate a nation.*

- It is clear that as custodians of higher education in Africa, and as part of the larger education sector, we have our work cut out for us.

CHALLENGE PRESENTED BY YOUNG AFRICAN POPULATION

- A recent report by UNICEF and the African Union commission, titled *Transforming Education in Africa*, says the following:
 - “Children are central to Africa’s future. By the middle of this century, Africa will be home to a billion children and adolescents under 18 years of age. This will make up almost 40 per cent of all children and adolescents, worldwide. With the increasing importance of this young population, African countries need to ensure that this demographic growth will not be a burden, but a benefit; they have a chance to expand the opportunities available to young people, and build on the vital human capital that they represent.”
- What a challenge this presents to education on our continent. A challenge I believe we are ready to take on.

OPPORTUNITIES PRESENTED BY A DIGITAL FUTURE

- Why do I say this? Because I believe the unique point in time that we find ourselves in presents an opportunity to completely reimagine the entire education landscape.
- Part of the reason for this is the pace and scale of technological advancements that have had a significant impact on all fields of operation in the higher education sector over the past decade or so.
- It has enabled exponential increases in the transfer of data through increasingly globalised communication systems and connecting growing numbers of people through these networks.
- Collective intelligence and mass participation in previously specialised fields are extending the boundaries of scholarship, while dynamic knowledge creation and social computing tools and processes are becoming more widespread and accepted.
- The implications for research are immense, as it opens up the opportunity to create, share, and access a great diversity of resources.
- Now more than ever, the size and location of learning institutions are becoming less important. What matters, is the contribution they can make to global knowledge, and the level of innovation they apply to harness digital research opportunities to the benefit of students, academics, and countries.
- The challenge is on for all sectors of society to join forces to **bridge the digital divide** that is still excluding so many African communities from grabbing hold of these opportunities.

CONCLUSION

- In conclusion: Allow me to leave you with a final piece of African wisdom:
- An African proverb that says: ‘*If you wish to move mountains tomorrow, you must start by lifting stones today.*’

- The University of the Free State is ready for this challenge. And we invite all of you in your different fields of expertise to join us in finding innovative solutions that will take our country – and our continent – forward.
- Thank you.

OPENING – CELEBRATORY DIALOGUE: AFRICA DAY CELEBRATIONS 2022
25 May 2022; UFS BLOEMFONTEIN CAMPUS; 18:00

INTRO

- Ladies and Gentlemen, Honoured Guests, Fellow Africans.
- I am reminded today of that great speech made by former President Thabo Mbeki – then the Deputy President of our country under President Nelson Mandela – at the occasion of the passing of the new Constitution of South Africa before Parliament in May 1996.
- His opening lines were:

“I am an African. I owe my being to the hills and the valleys, the mountains and the glades, the rivers, the deserts, the trees, the flowers, the seas and the ever-changing seasons that define the face of our native land.”

- It is a speech that certainly stirs something in the heart of anyone who calls this unique continent home.
- And here where we are today, more than a quarter of a century later, my hope is that the speeches and perspectives of the speakers we are about to listen to, will similarly stir something within us – inspire us, cause us to reflect, but more importantly, spur us on into action that will take our continent forward.
- Before we start, allow me to give you some context on this specific corner of Africa we find ourselves in today.
- For many of us, it is our academic home and a place very close to our hearts: the University of the Free State.
- In just a few words, I want to share with you where we as an institution come from, where we are now, and where we are headed – all within the overarching context of our place and role in African education and African unity.

WHERE WE COME FROM

- This building in which we are sitting today was one of the first structures on the campus of the Grey University College, which was officially opened in 1904 – with six students in the Humanities.
- Since then, the *“ever-changing seasons that define the face of our native land”* that Thabo Mbeki alluded to in his speech, have played itself out in our country, our world, and also at the University of the Free State – as it later became known.

WHO WE ARE?

- Today we are a thriving, established institution with seven academic faculties, spread out over three diverse campuses – two in Bloemfontein and one at Qwaqwa in the Eastern Free State – with around 42 000 students, and a growing international profile.
- *We are a research-led, student-centred, and regionally engaged university that contributes to development and social justice through the production of globally competitive graduates and knowledge.*

WHAT WE STAND FOR

- Student success and student well-being is at the core of our vision. The various initiatives we have developed to provide holistic support to our students have earned us international recognition and have enabled us to produce some of the highest success rates in the country.
- Our curricula are in an advanced stage of transformation. Our aim is a *decolonised curriculum* that is locally relevant and globally competitive. We want to continue including voices, developments, and scholarship that have been excluded in the past – with a specific focus on the African continent.
- We are a *highly internationalised* institution that attracts more and more students from Africa and the rest of the world, enriching our programmes by embracing diversity.
- We interact with the diverse community within which we exist through our core function of *engaged scholarship*. This forms our anchor in maintaining the relevance of the academic syllabus and linking real local needs to the knowledge project.
- We have engaged actively with our colonial and apartheid legacies and recognise our *common humanity* and the *universal nature* of the intellectual endeavour.
- We strive for *social justice* in all our policies and processes, and our diverse people feel a sense of common purpose, with our symbols and spaces, systems and daily practices all reflecting commitment to openness and engagement.

WHERE WE ARE GOING

- We approach the future with confidence – drawing strength from the lessons of yesterday and determined to grab hold of the opportunities of tomorrow.
- We are committed to increased internationalisation, decolonisation, and digitalisation, and to acknowledging and expanding the indigenous knowledge of our region and our continent.
- We support the initiatives of the African Union to harmonise African education systems and subscribe to the United Nations Sustainable Development Goals.

CONCLUSION

- In conclusion – (and with apologies to Thabo Mbeki):
We are an *African* institution – with a global vision.
- Our roots are planted in African soil. But our seeds are spread throughout the world.
- We owe our being to
a commitment to excellence;
a passion for leading learning and teaching, and for impact-inducing research;
alumni who are regarded worldwide;
stakeholders who broaden our vision; and
the people we serve in our region, our continent, and our globe
– inspiring excellence and transforming lives with quality, impact, and care.
- And our sincere wish is to learn from those who share our vision, to take hands with them and to continue playing a valuable part in advancing African education and African unity.
- Thank you.

CELEBRATORY DIALOGUE: AFRICA DAY CELEBRATIONS 2022 25 May 2022; UFS BLOEMFONTEIN CAMPUS; 18:00

How can the UFS as a research-led university become a catalyst for harmonising African higher education, achieving African unity, and securing a global African influence?

INTRO

- Honoured Guests, Esteemed Speakers, Ladies and Gentlemen.
- My topic this evening:
How can the UFS as a research-led university become a catalyst for harmonising African higher education, achieving African unity, and securing a global African influence?

PREVIEW

- During my opening speech at the launch of our Africa Week celebrations earlier this week, I concluded with this African proverb: *If you wish to move mountains tomorrow, you must start by lifting stones today.*
- I also mentioned that we are currently at a unique juncture in time, where we have the opportunity to reimagine the entire education landscape – for our country, our continent, and our world.
- This begs the question: When it comes to higher education, what are those stones that we need to lift *today* in order to move mountains for an altered, improved, more accessible education landscape *tomorrow*?
- I believe four of the most prominent, urgent ‘stones’ that need lifting are:
 - **Internationalisation, Collaboration, Digitalisation, and Excellence.**
- By focusing our efforts on expanding and elevating these aspects, I believe we as institutions of higher learning will position ourselves in the best way possible to make a real difference in the communities we serve and that we will be able to contribute meaningfully to African and global knowledge creation.
- In the next few minutes, allow me to share with you how the University of the Free State plans to, and is already working towards achieving these objectives – and in this process, is playing an important role in harmonising African education, achieving African unity, and securing a global African influence.

STONE #1 : INCREASING INTERNATIONALISATION IN HIGHER EDUCATION

- Internationalisation has globally become accepted as one of the critical processes to advance the core business of universities.
- It can be defined as *“the intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society”*.
- Internationalisation connects us to global knowledge and is a critical driver for research and innovation.
- At the UFS, internationalisation forms a vital part of our strategy, as it underscores our commitment to producing research and developing curricula that are locally relevant, globally competitive, and connect to multiple knowledge paradigms.
- In our quest to deliver research that has industry and social impact and real-world application, we recognise the value and encourage the widening of researchers’ international networks, with a special focus on the African continent.
- Our university has a proud history of international engagements across various study fields. And over the past five years, we have seen a 66% growth in the number of co-authored international collaborations.

- Our aim is to build on and further expand our international relations and engagements, with a stronger focus on the Southern African Development Community, the rest of Africa, and the entire Global South.

UFS INTERNATIONAL STAFF AND STUDENTS

- We are striving to preserve and grow staff and student diversity, and to attract the most brilliant minds from across the globe to join our university community.
- We do this, because we consider our diverse university community as a core resource for incubating intercultural and international competencies.
- At the moment we are home to around 1 080 international students – most of them from different countries in Africa.
- Our international staff and students are very important to us, and we go to great lengths to provide them with the same quality of service and treatment in all our university processes.
- Here, our *UFS Office for International Affairs* plays a critical role in continuously streamlining and updating our policies and in ensuring that they find practical application.
- Apart from several initiatives to make our international students feel at home, we also have an *Internationalisation at Home* strategy, whereby we aim to give all our students an international experience – through engagement with international students, cultural celebrations, and other curricular and co-curricular activities. In this way, we broaden our students' horizons and prepare them for a global work environment made up of diverse individuals.
- With our comprehensive internationalisation strategies, we enhance international visibility, impact, and connectedness of research and innovation.
- And in the process, we develop graduates who are **global citizens**, whose vision extends beyond their immediate environment to include their continent and the rest of the world.

STONE #2: COLLABORATION ACROSS INSTITUTIONS AND SECTORS

- Another key focus area – and top priority for our institution – is collaboration with a wide range of stakeholders from government, the private sector, business, and industry.
- If there is one thing the COVID-19 pandemic has taught us, it is that no man – and no institution – is an island; and that we need to learn from one another's successes and failures in order to collectively move forward.
- At the UFS, the premium we place on collaboration finds expression in our Academic Advisory Boards, where input from industry leaders in different study fields allows us to stay relevant and well-positioned to make an impact in an ever-changing world of work.

HARMONISATION OF AFRICAN HIGHER EDUCATION PROGRAMMES

- Our collaboration initiatives include valuable cooperation with institutions of higher learning across our continent.
- The vestiges of the colonial footprint in Africa are still evident in many of our education systems, and over the years we have been able to learn much from different institutions' decolonisation efforts and processes.
- Although African countries have widely varying higher education systems, the *African Union* has made encouraging headway in the *harmonisation of African higher education programmes* – efforts that the UFS acknowledges and supports.
- Harmonisation will lead to an increasingly networked and interrelated group of curriculum and examination systems, improving education against agreed benchmarks of excellence.
- The harmonisation of educational programmes will enable students to move more easily between institutions, as their degrees and qualifications will be recognised and accounted for by different African universities.
- This in turn encourages cross-pollination of ideas, allowing institutions to draw from the different perspectives and experiences encapsulated in their diverse students and lecturers. As we ultimately work together towards finding African solutions to African problems.

MULTIDISCIPLINARY APPROACHES

- The current challenges that confront our world are invariably complex in nature and require a multidisciplinary and transdisciplinary approach to finding solutions.
- The UFS has established an **Interdisciplinary Centre for Digital Futures** with the aim of initiating projects with a multidisciplinary character, combining social, natural, and digital sciences to find solutions to relevant societal needs.
- By approaching challenges from different angles and combining research skills and experience from different fields, we get closer to finding creative and innovative solutions.
- Which brings me to the next stone that needs to be lifted:

STONE #3: RAPIDLY EXPANDING DIGITALISATION

- Digitalisation at higher education institutions has become inevitable and crucial, not only because of the greater flexibility, convenience, and learning options it creates, but because digital processes are a core element in preparing students for a dynamic world of work in which technology takes centre stage.
- We are living in a time of unprecedented and rapid advances in technology that are not only changing the way various industries operate but are also bringing with it immense opportunity for growth and development.
- To ensure that we make the most of these opportunities, the UFS has developed a comprehensive **Digitalisation Implementation Plan** to find the best way of using information and communication technology as a tool for enhancing learning, research, collaboration, and decision-making.
- For today's students operating in a very different world and culture, information and communication technology (or ICT) often offers new educational opportunities at a lower cost and with more flexibility, irrespective of their physical location.
- ICT also enables virtual internationalisation, which can increase access and choice, as well as help to mitigate brain drain – a critical concern for many African countries.

DIGITALISATION IN TEACHING AND LEARNING

- The COVID-19 pandemic has revealed the vast potential of remote teaching and learning; but it also exposed the glaring digital divides that exist among communities from different socio-economic backgrounds.
- A recent report by UNICEF and the African Union Commission showed that at the peak of the COVID-19-related school closures in Africa, more than 90% of learners experienced disruption of learning.
- Despite governments' best efforts across the continent to involve children in remote learning policies and programmes and to provide safe continuity of learning, one out of two students – from pre-primary to upper secondary education – could not be reached.
- There are discrepancies in access to the internet, but also in access to mobile phones, in access to and ability to use mobile internet services, in ability to create technology, as well as in basic digital literacy.
- Currently, 34% of households have internet access in Africa, and around 89% of learners do not have access to a computer at home.
- It paints a bleak picture in terms of digital connectivity. But Albert Einstein said: *"In the midst of every crisis, lies great opportunity."*

UFS LEARNING CURVE DURING PANDEMIC

- For the UFS, the pandemic and resulting emergency shift to remote teaching and learning was an equally challenging time.
- But it was a trial that enabled us to develop skills and experience and implement new innovations, which ultimately left us better equipped and empowered to deal with the challenges of digital teaching and learning.
- Through innovative campaigns such as *No Student Left Behind*, run by our Centre for Teaching and Learning, we have successfully used advanced data analytics to track students' participation in our online offering, and to introduce tailor-made interventions where needed.

- Our two main priorities were the safety of staff and students and to complete the academic programme. In the first semester after the national lockdown was announced, 99,95% of our students successfully participated in online learning, while the remaining 0,05% received support to continue their studies successfully.
- Our institutional success rate increased by 5% in 2020, and even further in 2021.
- The level of tenacity, creative thinking, and cooperation displayed by our students and staff was extremely encouraging and enabled a rapid learning curve that now puts us in the position to share experience and expertise with other institutions – also in the rest of our continent.

COLLABORATING TO IMPROVE PUBLIC SCHOOLS

- The UFS has a long and very successful history of involvement in the schools that provide us with students, with different initiatives ranging from specialised Maths and Science workshops for teachers and families, to interactive lessons in key subjects that are broadcast to more than 80 schools across the country, reaching around 71 000 learners every week.
- These interventions have contributed to the Free State's excellent Matric results over the past couple of years.
- Using these existing relationships and structures as a springboard to help address obstacles to remote teaching and learning at school level, could be a logical next phase of involvement for us.
- But this is not something we can do alone. It is vital that institutions of higher learning join forces with government and the private sector to not only develop teaching and learning systems, but also to secure the infrastructure, data, and digital devices necessary to support it.
- Digital technology opens up educational opportunities for under-resourced African communities, which was previously considered impossible. But it will take wide and intensive collaboration and focused digitalisation efforts to turn opportunity into reality.

STONE #4: ELEVATING RESEARCH EXCELLENCE

- The final stone that needs lifting is '*Maintaining and Expanding Excellence in Higher Education Tuition and Research.*'
- The world is waking up to the high-quality new knowledge creation and expanding of indigenous knowledge systems by African scholars – not only in recent times – but throughout the ages.
- I agree with thought leaders who advocate that we as African institutions should not always blindly conform to European and Western criteria of what constitutes '*research excellence*'.
- The reality of Africa's socio-economic challenges and precious little resources available for research and development, creates a unique environment that necessitates a distinctive approach to research.
- While Africa accounts for around 15% of the world's population, the money available for research and development accounts for just over 1% of global expenditures.
- In light of this, many African academics have called for a *more African-centred paradigm*, providing a space for African people to decipher their own experience, philosophies, and constructions on their own terms, instead of being directed through a Eurocentric lens.
- Which leaves African institutions with the challenge of maintaining a balance between building a globally competitive university and being nationally responsive to the unique challenges facing our continent's people.

UFS RESEARCH STRATEGY AND CENTRES OF EXCELLENCE

- At the UFS, our research strategy responds to our institutional goal of increasing our contribution to local, regional, and global knowledge, and aims to address fundamental and strategically important questions. We want to make an economic, social, and cultural impact at regional, national, and international levels.
- Indigenous Knowledge Systems is a specialist field in our Centre for Gender and Africa Studies and is actively pursued as a major branch of its academic and research endeavours.
- One of our flagship research efforts is the **pharmacological assessment of the healing qualities of cannabis**, which is believed to be one of humankind's first cultivated crops, used in Southern Africa since about 1400 AD for spiritual and medicinal purposes.

- Systematic medicinal research done by our Department of Pharmacology investigates its use as a treatment for cancer, pain management, diabetes, and hypertension.
- As a testament to the world's acknowledgement of the value of traditional African medicines, our Director of Pharmacology, **Prof Motlalepula Matsabisa**, was recently appointed Chairperson of the World Health Organisation's **Regional Expert Advisory Committee on Traditional Medicines** for COVID-19.
- Our **Afromontane Research Unit** is another example of an Africa-based initiative that has become a world leader in its study field in a short space of time – in this case, empowering vulnerable mountain communities with uplifting environmental, social, and economic knowledge.
- While our **International Studies Group**, comprising scholars with an active interest in African and global history, has established itself as an incubator for African research talent, with its members consistently awarded sought-after international scholarships.
- Through these and many other centres of excellence at the UFS, I truly believe we are making an impact on a regional, continental, and global front.

CONCLUSION

- In conclusion:
Apart from its wealth of indigenous knowledge, abundant natural resources, and immeasurable human potential, Africa has produced many visionary leaders who advocate *African solutions for African problems*.
- Without exception, they saw *education* as a vital tool for achieving this.
- One of them is our beloved former president, Nelson Mandela, who famously said: *“Education is the most powerful weapon you can use to change the world.”*
- As a highly internationalised, digitalising institution with a wide sphere of collaboration, we are living proof that excellence produced in a corner of Africa can certainly reverberate throughout and impact our entire world.
- Thank you.