

Be Part of the Picture

### You Can Make a Difference

Rhodes University Fundraising Priorities



### TABLE OF CONTENTS

Foreword	04
Priority Project 1: The Centre for Postgraduate Studies (CPGS)	06
Priority Project 2: The Equity and Institutional Culture Unit	18
Priority Project 3: The Institute for Nanotechnology Innovation (INI)	28
Priority Project 4: The Institute for Water Research	40
Priority Project 5: Isivivane Student Fund	50
Priority Project 6: Pathways to Education	60
Priority Project 7: Rhodes University Sports	76

A product of the Communications and Advancement Division

Email:

development@ru.ac.za

**Tel**: +27 (0)46 603 8570

#### Address:

Rhodes University Alumni House Lucas Avenue Makhanda 6140

#### PO Box:

Communications and Advancement Division PO Box 94 Makhanda 6140

www.ru.ac.za/givingtorhodes





### Luzuko Jacobs

**Director**: Communications and Advancement Division

### **Reifying our** collective social purpose

he magnitude and rapidity with which life is changing are unprecedented and overwhelming. New technologies and the COVID-19 pandemic, are at the heart of this change.

The world economy is undergoing unpredictable transformations.

Projections, sometimes foreboding, about a "lasting impact" of the ongoing changes continue to be sounded from many quarters. Community relations will not be left unscathed.

It is, however, our reaction to adversity and inevitable challenges that matter more. It is in our response that we could influence what is to come.

This book is about Rhodes University's (RU) social commitment and institutional engagement. It presents opportunities for strategic collaborations for corporates, trusts, foundations, government and individuals with cutting edge scholarship to strengthen a progressive social compact and shared social purposes.

Among them is an ambitious project to build a world-class Centre for Postgraduate Studies. One in three students at RU is a postgraduate student. A centre such as this would be a crowning jewel for the only research-intensive University outside of a metropolitan area in South Africa. With the highest proportion of doctoral academic staff per student and a cohort of high-calibre scholar-practitioners overseeing our research, we are not about satisfying 'credentialing' demands. Our scholarship is a model of excellence.

Another social investment project aims to house our decorated, world-renowned Institute for Nanotechnology Innovation. The breath-taking success of this Institute in international research belies the infrastructural challenges it faces. Under Distinguished Professor Tebello Nyokong,

an Honorary Fellow of the Royal Society of Chemistry, the Institute is at the heart of a global network of researchers and product developers. It is a hub for international collaborations involving leading institutes and universities in Africa, America, Europe, and China.

In a locality, province and country facing water shortages threatening development, the case for water research addresses pioneering work taking place in the field of hydrology. Our Institute for Water Research is the standardbearer for the University's commitment to the continent through the African Research University's Alliance. The Institute champions big-picture solutions. This requires scholars to operate across disciplines and with communities to integrate context-specific knowledge to produce solutions that can be implemented at scale.

We also share information about opportunities for partnerships in the transformation space. Our thinking characteristically reaches beyond campus. We believe that an Indigenous Languages Centre could respond to concerns that are relevant not just in the complex African context, but in the Global South broadly.

The vision to elevate the unique scholarly pedigree of RU even higher, cannot happen without wholesome on-campus life experience. Sports and wellness are key. Our University's location "at the centre" of the Eastern Cape holds numerous additional advantages for integrated regional sports development in a province renowned for producing many South Africa's rugby greats. State of the art facilities in a safe, secure and accessible environment hold incalculable benefits for the region.

Our value proposition for an exclusive yet accessible, educational centre of excellence in the south of the continent lies in the vision represented in this book. See the picture and partner with us. 🗑

This book is about Rhodes University's (RU) social commitment and institutional engagement.

GOAL 2

as critical







TEACHING

& LEARNING

#### RESEARCH

**ENGAGEMENT** 



This is a visual representation of the Rhodes University Institutional Plan. It consolidates and expresses our choices and decisions and sets out our institutional goals and strategies that will be pursued for their achievement. It is not cast in stone but will remain flexible and 'livinc RHODES UNIVERSITY document', ever-evolving and adapting as new strategies and approaches are implemented Where leaders learn to advance our mission and vision as new imperatives and opportunities arise.

# 

"We have a close nexus between research and teaching, between teaching and community engagement, and between community engagement and research."

- PROFESSOR SIOUX MCKENNA DIRECTOR OF POSTGRADUATE STUDIES AT RHODES UNIVERSITY

# The Centre for Postgraduate Studies (CPGS)

The Centre for Postgraduate Studies at Rhodes University is creating a community of scholars and thought-leaders who have a sense that they are contributing to something bigger than themselves and can spearhead South Africa's development.



#### **PRIORITY PROJECT 1**

### The Centre for Postgraduate Studies (CPGS)



The Centre's goal is to produce a new generation of postgraduate public intellectuals and researchers who can lead efforts against a mounting tide of anti-intellectualism, which threatens to undermine efforts to forge a national knowledge economy.

#### he survival of the South African research university itself is at stake.

"If universities don't get better at showing why they are a public good and better at translating the national knowledge project into terms that make sense to the taxpayers who are funding it, then we are all in trouble," said Professor Sioux McKenna, Director of the Centre for Postaraduate Studies.

Rhodes University is not only strengthening its position as a research-intensive university by targeting the expansion of its postgraduate cohort, which comprises 31% of the total student population, it is also equipping the next generation of scholars with the understanding and skills to produce engaged research, and the ability to communicate the benefits of such work.

Workshops, activities, conferences and new courses targeting both students and supervisors have been crafted with the specific aim of building on the university's strong culture of ethical reflection which shapes much of the research it produces.

"As a scholar, you need to think about who you are serving," explained McKenna. "This is an important conversation that Rhodes University has had more explicitly than many other institutions."

Accordingly, she emphasised that the University's preeminent position in national knowledge production is about more than satisfying the "credentialing" demands brought about by academic inflation - that is, employers' demands for a master's degree where once they sought only an honours gualification, and for a PhD where once a master's sufficed.

Rhodes University regularly ranks top in the country in terms of per capita production of postgraduates and published research. But, McKenna said, "the importance of the centre's work is not merely in facilitating this pipeline, but in helping students see a broader purpose beyond their need to gain an additional qualification for a better job".

"We have a close nexus between research and teaching, between teaching and community engagement, and between community engagement and research. The activities and interests are intertwined in a culture in which we can feel responsible for contributing to some-

thing bigger than ourselves."

cation skills among the Univer- you need to sity's postgraduates is a core part of the Centre's mission think about who to produce intellectuals who can engage with the prob- you are serving." lems of the broader society.

Fostering high-level communi- "As a scholar,

#### **DID YOU KNOW?**



Rhodes University has amongst the highest per capita research outputs and doctoral students who publish from their research.



More than 31% of Rhodes University students are postgraduate, making the institution one of the most research-intensive in the country.

Rhodes University is the national lead in a number of internationally funded research and development projects.



Rhodes University is the lead institution in the offering of the "Strengthening Postgraduate Supervision" course which has been offered over 60 times at more than twenty South African universities: http://postgradsupervision.com



"...the programme is not just about postgraduates and supervisors acquiring some new skills, it is about thinking about the academic project a public good." "Universities in South Africa have not sufficiently connected to society," said McKenna. "We talk to each other in our fancy journals, but we are loathe to talk to the media, to talk on radio, and to explain what our work means for those outside the university."

Accordingly, a key aim of the Centre is to foster greater interdisciplinary understanding and creativity among postgraduate students and to enable them to communicate the benefits of the knowledge produced by the academy more widely.

"We want postgraduates who are experts in their topic but not dismissive of other forms of knowledge – we don't want that intellectual arrogance. In addition, students should be able to communicate as part of national and international conversations."

The tools used by the Centre for Postgraduate Studies as part of its year-round programme include workshops and activities to forge greater academic literacy and improve research skills.

An important aim is to enable students to, in McKenna's words, "see behind the curtain" of academic knowledge production, demystifying and cracking the code of the different kinds of discourse promoted by the various disciplines.

"We want to ensure that students start to understand how knowledge is made within their field," said McKenna.

As a result, they can critique the frameworks that shape how knowledge is produced more effectively, as well as gain an appreciation of the functionality of certain aspects of the research-production process.

"The programme has elements of liberation in it," said McKenna. "Take students with strong decolonial positions. If they have seen how knowledge is made, they are in a much more powerful position to say, for example: 'Oh, you are just saying that because that has always been the way it has been done.' We need to ask questions about whose knowledge is validated and whose interests are served by academic traditions."

And it is not only the students who benefit. "Many supervisors say, 'Oh, I didn't know we do this,' because they learnt the terms of their discipline as if by osmosis – and so had never made them explicit in their own teaching."

The creation of these new ways of understanding stems in large part from the particular methodology adopted in the courses taught at the Centre, which sets them apart from the ordinary skills training often provided at other universities. The postgraduate participants look at how writing works in their particular disciplines. For example, the referencing of research works differently across the academy, in line with the different kinds of knowledge being forged.

"Many universities teach referencing as if it is merely a skill – as if it's simply a matter of open bracket, close bracket, and following the style. And the message is always: 'If you get caught not referencing, you will get thrown out of the university.' The approach can paralyse students and prevent them from writing for fear of getting caught plagiarising, and it fails to explain that we don't only reference to avoid plagiarism.

"We reference because that is how knowledge is made in the academy – we make knowledge incrementally based on a conversation with previous knowledge that has withstood the test of peer scrutiny. If we don't help students to understand the importance of this relationship to prior texts and that this is fundamental to knowledge production, then they don't develop those practices."

In this regard, the Centre for Postgraduate Studies at Rhodes University represents a different model for higher education among the wave of postgraduate centres that have been established across the country.

The problem is that, although the mushrooming of these centres represents a new phenomenon, they tend to adhere to an outdated model for academic development. Many seek to teach courses offering a generic set of skills, such as time management, which fail to address the actual practices of knowledge production in universities. Such training is often provided by private-sector facilitators or staff who have limited research and supervision experience, rather than experienced, dedicated scholar-practitioners.

One result of that model is a lack of buy-in from faculties, supervisors and students.

However, the Centre for Postgraduate Studies offers a different, more integrated model which leverages its senior academics to induct and engage postgraduate students on both the production and impact of their research. It also runs courses for supervisors at the University and nationally to enable them to teach and offer guidance more effectively, and even offers a PhD course interrogating the social justice role of South African universities.

The approach makes a virtue of necessity. In contrast to many of its grander peers at other research-intensive institutions, the Centre lacks a dedicated building for its work; boasts a full-time staff of only two; and could not afford to recruit consultants and full-time skills trainers even if it so desired. But the austerity has led to the forging of a new kind of methodology: one which deploys the established, highly regarded academics within the University – individuals whose identity is meshed with their research and pedagogic practices – to produce a credible, integrated process of support for postgraduate students and supervisors.

It is an approach that has important implications for national development.

"The programme is not just about postgraduates and supervisors acquiring some new skills, it is about thinking about the academic project as a public good," said McKenna.

The approach makes a virtue of necessity. In contrast to many of its grander peers at other research-intensive institutions, the Centre lacks a dedicated building for its work; boasts a full-time staff of only two; and could not afford to recruit consultants and full-time skills trainers even if it so desired.

"The reality is that if, as universities, we see each other as businesses competing with each other, we are doomed as a country. We don't have the capacity for those games. "If we fail to see ourselves as working together, then we are in trouble."

Accordingly, the Centre has rolled out a four-month course for academics, postgraduates and postdoctorates looking at issues



Strengthening Postgraduate Supervision

of postgraduate supervision on a nationwide basis see (www.postgradsupervision.com).

The course was founded at Rhodes University in collaboration with several other South African and European institutions with funding from the South African Department of Higher Education and Training (DHET) and the Dutch government. Having been offered more than 70 times at 23 public universities across the country and to academics from universities in Kenya, Turkey, Belgium and The Netherlands, it has secured the University a reputation as a leader in this field.

In part, the course stems from a need to address the shortfall in postgraduate education capacity within the tertiary sector at the national level. While postgraduate numbers have doubled in recent years, academic staff numbers have only risen by 50%. With student numbers outpacing supervisory capacity, universities are feeling the burden of providing the required research-rich environment.

A particular concern is to produce genuinely democratic pedagogic models that address the sense of isolation that can be felt by so many postgraduate students working on their theses, particularly in the humanities and social sciences.

Writing circles run by and for postgraduates meet once a week, bringing together eight to ten students in each group in tutorial rooms at the University's new library. Eighteen of these groups were established in 2019.

The postgraduates read their work aloud and give feedback to each other. The programme offers safe spaces; there are no power differences among the participants, and there are no supervisors in the room.

Since the students in each group come from a range of disciplines, they learn about different areas of knowledge and have to communicate with others who are not necessarily familiar with either the content or terms of their research which, paradoxically, fosters clarity about and a deeper understanding of their own work. "It's a simple concept, but the results are magic," said McKenna.

The Centre also runs "pomodoros" every week to help students get down to the task of writing. The postgraduates gather in the library, switch off all their social and other electronic media, and embark on timed, 25-minute writing sessions, with the prospect of a free cup of coffee as a reward if they stay the course.

The programme further offers regular writing retreats to foster a community of practice in academic literacy among scholars from the different university departments.

The Centre for Postgraduate Studies' philosophy of democratic engagement also drives an annual postgraduate conference at which students promote their research, thus learning to present their work in a short space of time and in a way that makes sense to a broad audience. In this regard, face-to-face and online courses to support postgraduates in publishing their work are also offered.

In addition, the University has established a postgraduate liaison committee, which works closely with the Centre to shape and promote the programme for these students.

McKenna described the Centre's ethos: "It is important that postgraduate students have a sense that there is an entire system in the university that cares about their knowledge project and thus them as a person." The Centre's programme for postgraduates also produces significant pastoral and literacy development impacts.

The work has led to the identification of the need for a range of short courses, which are offered not just as an adjunct to facilitate the students' research activities but which provide skills that may be of benefit in entering the workplace or in helping students to play a more engaged role in society as a whole.

The Centre offers short courses developed and provided in collaboration with other departments in:

- Qualitative research design, including how to collect and analyse data using NVivo software;
- Experimental research design;
- Working with quantitative data, including through the use of R software;
- Critical discourse analysis;
- Understanding the history and frameworks of humanities and natural science disciplines; and
- Spoken isiXhosa.



ABOVE: Professor Sioux McKenna

#### THE OFFERING INCLUDES SHORT COURSES DEVELOPED AND PROVIDED IN COLLABORATION WITH OTHER DEPARTMENTS IN:



Qualitative research design, including how to collect and analyse data using NVivo software.



Experimental research design.



Working with quantitative data, including through the use of R software.



Critical discourse analysis.



Understanding the history and frameworks of humanities and natural science disciplines.



Spoken isiXhosa.





school - such is the popularity and demand for these kinds

Accordingly, the Centre for Postgraduate Studies is working with the University of Venda in South Africa, three Kenyan universities, and four European universities on an EU-funded

school, which would coincide with the annual National Arts is based. The idea is that public intellectuals and thought leaders in their field who teach at Rhodes University, such as the continent's leading nanotechnologist, Distinguished Professor Tebello Nyokong, would give lectures and run workshops, attracting postgraduate students, academics and interested members of the public from across the country.

top academic environment," said McKenna.

Meanwhile, on the strictly academic front, the Centre is seeking to promote greater engagement in the work of the academy by launching a new PhD-level course on the role project on which the country embarked after the introduction of democracy in 1994.

The course, which is offered with the Centre for Higher Education Research, Teaching and Learning (CHERTL) at the University, is as radical in its methodology as it is in its content. McKenna notes that South Africa generally follows a conservative one-on-one model for producing doctoral graduates that has mostly been abandoned as unworkable by

Unlike the dominant, "master-apprentice" Oxbridge model that has been the traditional model for humanities and social science doctorates across the country, the new gualification establishes teams of supervisors and doctoral scholars and

The national restrictions on awarding credits for coursework at PhD level have not deterred McKenna who hopes that a forthcoming national review of the doctorate will begin a process of shifting doctoral education in South Africa to more

doctoral programme, the aim is to produce knowledge that is

produced by different departments, the elusive goal of genuine interdisciplinarity, so prized by progressive academics globally, may be attained.

Rhodes University is now considering launching a winter | The PhD programme has already proved immensely popular available in its first year.

> "We will continue to offer the new qualification while trying to convince the system that it has enormous benefits," she said.

mission to foster research and researchers as "a public good", but also the University's motto as the place **"where leaders** learn".

She cited a recent study which tracked the outcomes for 73 range of higher education institutions across the country. It found that, in their daily lives, Rhodes University graduates broader community.

commitment to a meaning that is bigger than yourself, then

a form of educational activism that seeks to hold academics researchers that they produce, with particular reference to

engaged research and researchers in answer to society's

of the science and scholarship produced by the academy

university"; a responsibility that the Centre for Postgraduate Studies makes every effort to meet.

their skills and employability profile. The Centre therefore



ABOVE: Distinguished Professor Tebello Nyokong Photo Credit: Adrian Steirn Courtesy of 21 ICONS

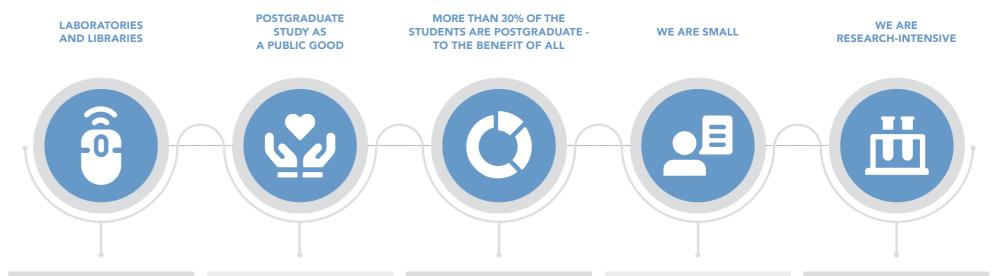
### Success Stories



Every year Rhodes University academics and postgraduates publish their cutting edge research in accredited journals. We are a small university but we punch above our weight and our per capita output is consistently in the top five in South Africa (and was first in 2019). This demonstrates that our postgraduate students are supervised by among the best researchers in the country. We have the highest per capita rate of SARChI chairs and we have a large number of internationally acclaimed researchers. This allows the University to offer postgraduate students the opportunity to work with people who are at the very forefront of their fields.

While we focus on knowledge dissemination, we do not focus on publication metrics. Academics do not get commission for publishing their research as they do at many other universities. This is part of the reason why Rhodes University has an exceptionally low rate of predatory publications, that is publications of low quality in bogus journals. The point of publication is dissemination - and we actively ensure that our doctoral scholars contribute to the frontiers of their field. We do not make publication a graduation requirement, as so many universities do, because we recognise that there are many ways to share knowledge. Nonetheless, Rhodes University PhD scholars have amongst the highest rates of publication from their doctoral work. While we offer students access to world-class supervisors, we also provide so much more to ensure that the postgraduate years are transformative as our students become the knowledge makers this world needs. We offer a range of accredited short courses through the Centre for Postgraduate Studies ensuring that our postgraduates get to develop their skills in a range of areas related to their research and beyond. The CPGS also offers weekly workshops, coffee-shop writing groups and writing retreats and more. The CPGS also offers the annual postgraduate conference through which our students can share their work with others while building their CV.

Rhodes University is deeply committed to its geographical location and works to ensure a positive relationship between the institution with its many resources and the community of which it is part. This is one of the reasons why we have the most developed community engagement centre which provides students with multiple opportunities to learn from others as they study and to consider how their own research might attend to local concerns.



The University has a wealth of physical resources to ensure a positive postgraduate experience. The postgraduate commons, for example, enables students to work in comfort and to enjoy speedy Wi-Fi as they do

Rhodes University takes seriously its responsibility as a public good. This means that it should be to the benefit of society that we have an institution that produces knowledge and nurtures knowledge creators. Not all knowledge is good for the public - some of it can even be a public bad whereby the knowledge leads to increased environmental degradation and social injustice. It is the goal of the university to ensure that our students are well aware of their responsibility as highly educated critical citizens of the world. Our postgraduate students go out and make a difference.

This means that the entire university benefits from having a research-rich environment. At undergraduate level, our students engage with postgraduates as tutors and role-models who demonstrate that knowledge is not simply transmitted, it is created.

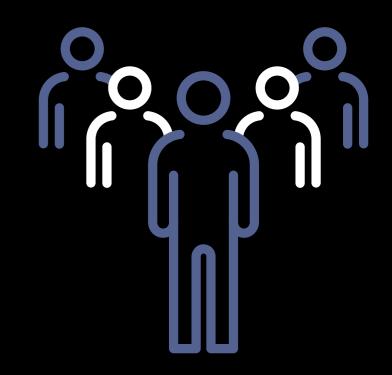
The university is small. This means that postgraduate students get to know researchers working in a range of fields and have multiple opportunities to engage in conversations about knowledge making. The small size of the university means that we can get to know each other and can work to ensure that students get all the support they may need. We are consistently in the top five in publication and postgraduate output. This means that the institution is imbued with the focus on making knowledge contributions. This also means that every postgraduate student gets to engage with supervisors and students from across the campus and to be exposed to public lectures, recitals and exhibitions that are world-class.



The main goal for transformation at Rhodes University is deceptively simple: to continue to graduate academically strong and adequately prepared students from all backgrounds on a per capita basis than any other public university in South Africa.

### The Equity and Institutional Culture Unit

The achievement of this goal, which is underpinned by principles of social justice, redress and responsiveness to local, regional and international needs, entails transforming the institution into a welcoming environment for students and staff from all backgrounds.



## The Equity and Institutional Culture Unit

There has been an increase in the percentage of Black students and staff at Rhodes University. Alongside this has been an increase also in the percentage of students and staff from non-middle class backgrounds, and an increase in students and staff with disabilities. The proportion of first time entering students on the National Student Financial Aid Scheme (NSFAS) increased by 47% between 2018 and 2020.

ransformation for the University includes situating the Institution programmatically in its location. This means that the formal and informal curriculum should be relevant for students and staff and for the local, regional and international communities.

Despite dramatic global, local and institutional changes in the last few decades, the basic aspiration of the Institution has not changed. Rhodes University has not lost its century-old aspiration to be the best university in Africa. The Institution now further aspires to be a centre of excellence on the continent and a positive part of an evolving, transforming 21<sup>st</sup> century South Africa.

Rhodes University has not lost its century-old aspiration to be the best university in Africa.

#### **DID YOU KNOW?**



The Transformation Plan proposed changes include the promotion of isiXhosa as a second language of teaching and institutional communication.



It further seeks to support individual students by providing counselling to safeguard their mental health; protecting students from sexual and other forms of violence and harassment, and opening the University's spaces and services to students with a disability.



The plan seeks to establish the University as an educational haven for all students, including those from disadvantaged backgrounds who, given the country's apartheid history, are, in the main, black.



The University holds a series of events every year under a themed Gender Week, which includes talks and discussions, guest speakers and activities to promote healing.



Each year, the Equity and Institutional Culture Unit holds a Disability Week to spread awareness to staff and students about the challenges associated with disability and to foster a culture of acceptance and of mainstreaming disability.





#### **Transformation Plan**

Rhodes University's Institutional Transformation Plan includes objectives that address financial and physical accessibility of the Institution, its culture, including visual culture, the formal curriculum, and the safety and mental health of students and staff.

It also envisages significant changes in the pedagogic culture and practice, including the promotion of isiXhosa as a second language of teaching and institutional communication and the transformation of the academic cohort. It further seeks to support individual students by providing counselling to safeguard their mental health, protecting students from sexual and other forms of violence and harassment, and opening the University's spaces and services to students with a disability.

The plan also articulates objectives that speak to the need to change the visual culture of the Institution to one that will not only locate it in its geographical and historical setting, but one that will be actively used for teaching and learning purposes. Included in the plan are also objectives that relate to awareness-raising work. This work involves educating students and staff on issues of disability, gender and genderbased violence, mental health, race and sexualities.

#### Challenges

Transformation challenges outlined in the Plan include assumptions about institutional culture that entail exclusionary and discriminatory practices of members in the Institution. These include justification and normalisation of exclusion, unfair discrimination and harassment.

Resources are, however, a critical challenge. These include counselling facilities, shortfalls in education and support capacity in the context of rising student numbers. The Centre for Higher Education, Research and Teaching (CHERTL), which provides academic support to staff and students, is also understaffed. The proposal to establish a South African Indigenous Languages Centre at the University represents an important initiative that could make a major and positive difference to students, academics and the country. The Centre would strengthen efforts to promote teaching and research in languages other than English – in particular isiXhosa, which is the first language of many of the students and the majority of employees at Rhodes University.

The establishment of the Centre would also support broader work to transform the curriculum to address and respond to concernsthatare particular to South Africa and the Global South and efforts to increase diversity among the academic staff.

#### The Issue of Diversity

Challenges in attracting and retaining academic staff – particularly quality Black researchers and lecturers – at the University have created an imbalance on the academic frontline. The proportion of Black academics leaving Rhodes University is greater than that of White academics.

Departments that are more transformed – that is, those which have diversity in terms of race, age and gender – are broadly more attractive for students. This produces a win-win situation. The students follow the transformed departments in which they tend to thrive. Those departments improve, win awards and gain cachet. Meanwhile, several departments remain untransformed, indicating the systemic nature of the challenge faced by the University.

However, with regards to balancing gender diversity, especially in higher support positions, some inroads are being made. Recently, the University welcomed its first Black female Deputy Vice-Chancellor, Dr 'Mabokang Monnapula-Mapesela, and Registrar Professor Adéle Moodly.

Furthermore, the Student Representative Council (SRC) has comprised largely of diverse women leadership cohort over the past few years.



ABOVE: Dr 'Mabokang Monnapula-Mapesela



ABOVE: Professor Adéle Moodly



This work involves educating students and staff on issues of disability, gender and gender-based violence, mental health, race and sexualities.

#### Violence and Harassment

To produce an enabling environment for education, the University continues to prioritise the protection of students from sexual and other forms of violence and harassment. A position for a Harassment and Discrimination Manager was created.

Efforts to prevent incidents of sexual violence by continuously building awareness and to effectively bring offenders to justice have been stepped up in the wake of high-profile "anti-rape" protests conducted by students in April 2016. These protests indicated a widespread consciousness among students of the importance of addressing issues of gender-based violence. Rhodes University has a strong reputation for inclusion in terms of gender and sexuality, and as a result, students are much more vocal when it comes to these issues.

A comprehensive programme to address gender-based violence is being forged in collaboration with students. As part of this, a preventative initiative is being rolled out with separate dialogues for male and female students. In the exploratory phase, several contextualised questions are being put to students at meetings in their residential halls to provide a baseline on attitudes towards sexual and gender-based violence.

Although awareness cannot guarantee behavioural change, the University believes that attitudes should be altered in the long run concerning the issue.

The University also holds a series of events every year under a themed 'Gender Week', which includes talks and discussions, guest speakers and activities to promote healing. Part of this includes The Silent Protest Programme, organised by the Equity and Institutional Culture Office and GenACT, which takes place annually. Each year, students are surveyed for their interest in or objections to, the programme to build dynamism in both structure and implementation.

In 2019, Dr Monnapula-Mapesela and Student Affairs at Rhodes University, attended an Association of Commonwealth Universities (ACU) roundtable which included, among others, The Duchess of Sussex. At the event, discussions highlighted not only the need for universities to promote equality and inclusive access to education but also their power to challenge the status quo in wider society.

Through their innovative projects, the ACU-member universities work to advance gender equality and promote the values of respect, understanding and tolerance on campus and in their communities.

**Disciplinary Measures** 

In tandem with the awareness-building campaigns, the University has also established internal and external processes for bringing sexual offenders to justice. Informed by the students' disciplinary code' there is an internal' Rhodes-University-customised prosecutorial process, which deploys the expertise of a panel of external advocates. At the same time, the University encourages students as appropriate to use external legal processes, which involve the South African Police Service (SAPS) and the National Prosecuting Authority (NPA). Students are offered a choice, and the two processes are not mutually exclusive. In some situations, both processes may be conducted at the same time.

From 2020, it has become standard for students to read the policy and sign a declaration that they have read and understood the policy, as part of the registration process.

#### Increasing Accessibility

Rhodes University seeks to transform the built environment on campus to make it more accessible and welcoming.

Most of the buildings in the University were built before disability was thought of as mainstream. Some important buildings are, as a result, inaccessible for people living with disabilities.

Given the financial constraints of upgrading the colonial-era infrastructure, the University, in consultation with students, has adopted a pragmatic approach. When renovations are undertaken, they must take into account issues of disability – for example, by installing lifts and more accessible restrooms.

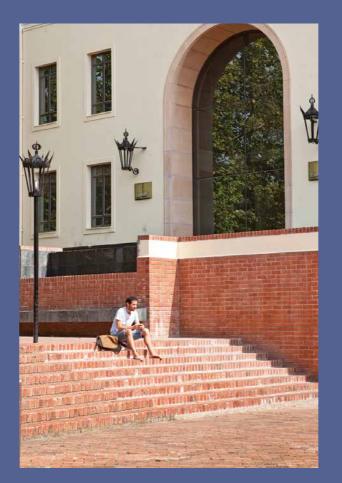
However, such actions may be insufficient; and the unaffordability of implementing a new disability framework for universities released by the Department of Higher Education and Training (DHET) creates a number of difficulties for the University.

The move to mainstreaming disability in higher education will involve interrogating the housing policies to include and account for the needs of people living with disabilities. Each year, the University holds a Disability Week to spread awareness to staff and students about the challenges associated with disability and to foster a culture of acceptance and of mainstreaming disability.

In recent years, these themed weeks have seen disability activists sharing their stories with students. The University has also run activities during these theme weeks, such as painting the stairs to make steps more visible to the visually impaired. In 2018, the University received technology to assist students with "hidden disabilities", such as visual and auditory impairment.

Photo Credit: Sphiwumusa Radebe

THING







#### **Visual Culture**

In seeking to create a space that is more welcoming for students from diverse backgrounds, the University's transformation practitioners have been charged with recontextualising the institution's artefacts, many of which date back to the colonial era, as well as acquiring new artworks.

Instead of destroying the evidence of the University's history, such as statues, the strategy has been to create new conversations around their significance and the relationship of the past to the present in the University's institutional identity. As outlined in the Institutional Transformation Plan, the goal is to establish a post for a suitably qualified person to oversee this work.

The University had already made inroads by having a diverse group of students conduct a thorough audit on the signs, symbols, publications, artefacts, and artwork around campus, in both public and private buildings.

Broadly, all the University's transformation efforts are directed at forging a new identity for the University in line with the increasing diversity among its student cohort and the developmental priorities of South Africa's society and economy.

In this regard, outreach work with local schools both promotes and expresses the University's identity as a socially engaged institution.

#### Youth Project

As part of its youth project, there is ongoing engagement with local schools in raising awareness around issues of domestic violence and gender-based violence. Initiatives include a self-leadership programme for school pupils which includes an annual competition named after the leader of the Black Consciousness Movement, Stephen Bantu Biko, who was born and lived in the Eastern Cape.

Working with the provincial Learner Support Agents (LSA) programme under the Department of Basic Education and the Steve Biko Centre and Foundation in King William's Town, the University now aims to expand the programme and build the confidence of pupils from township schools through greater engagement, including by hosting more class visits to the University campus.

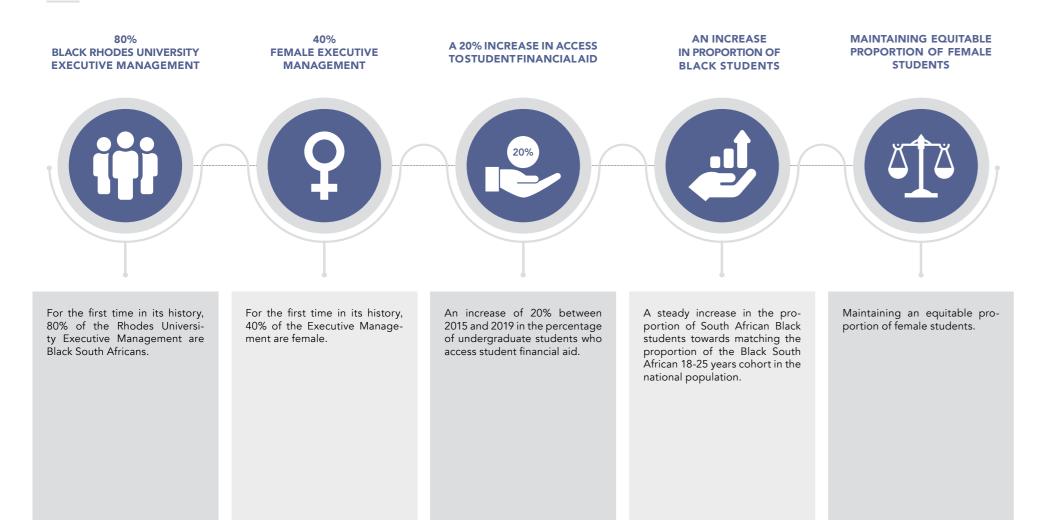
The partners in the initiative are also planning to establish a Steve Biko scholarship to enable the winner of the competition to study at Rhodes University.

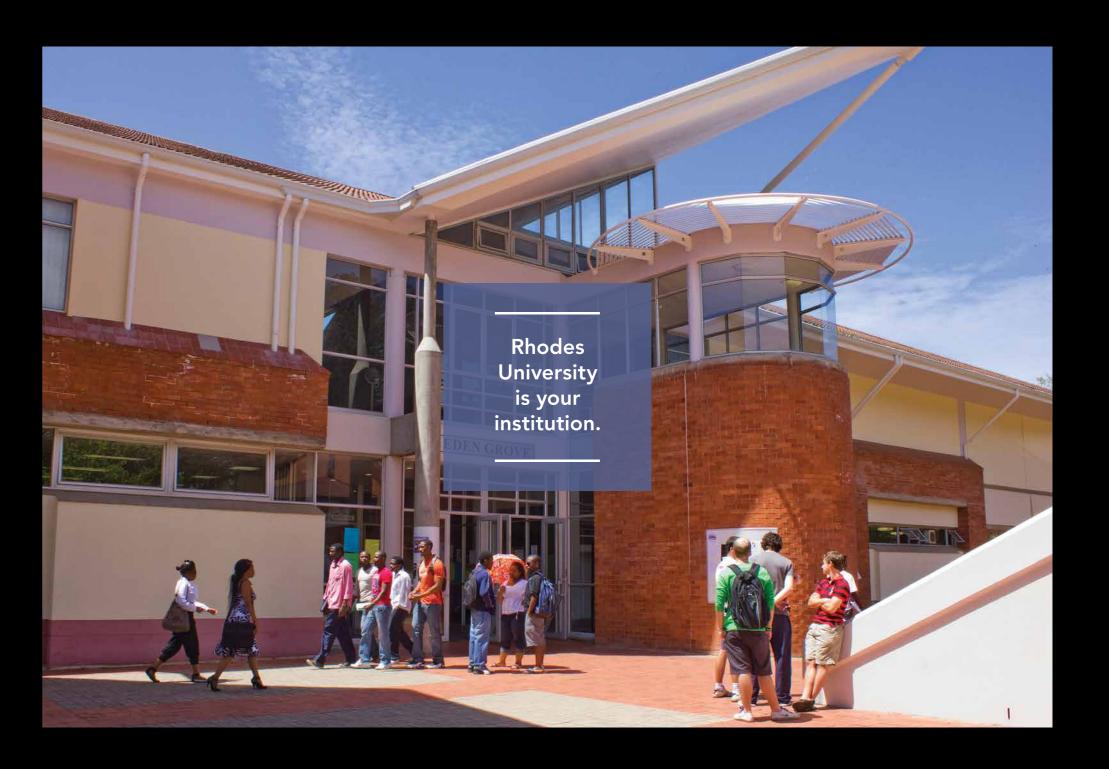
The reality is that there are currently very few students from township schools coming to University. This programme should encourage more to come to see Rhodes University as *their* University. The message that the University consistently puts out there is that: "This is your institution."  $\forall$ 

We must realise that prophetic cry of black students: Black man you are on your own!

- STEVE BIKO

### Success Stories

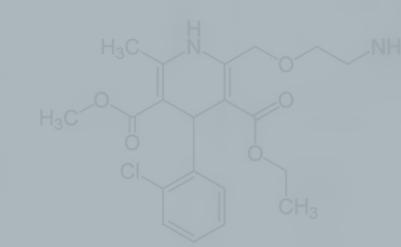




## $\frac{x\,dx}{X^n} = -\frac{bx+2c}{(n-1)\Delta X^{n-1}} - \frac{b(2n-3)}{(n-1)\Delta} \int \frac{dx}{X^{n-1}} \\ \frac{x^2dx}{x^2dx} = \frac{x}{n-1} - \frac{b}{(n-1)X} + \frac{b^2 - 2ac}{n-1} \int \frac{dx}{x^n} .$

For lack of space, the record numbers of postgraduate doctoral students produced at the Institute are squeezed into corridors and throughways in the ageing, modernist block – chairs pressed up against walls at overflowing desks, as they work on their theses.

### $\frac{x^{2n-1}dx}{\chi^n} = \frac{1}{a} \int \frac{x^{2n-3}dx}{\chi^{n-1}} - \frac{c}{a} \int \frac{x^{2n-3}dx}{\chi^n} - \frac{b}{a} \int \frac{x^{2n-2}dx}{\chi^n};$ $\frac{dx}{xX} = \frac{1}{2c} \ln \left| \frac{x^2}{X} \right| - \frac{b}{2c} \int \frac{dx}{X};$ $\frac{dx}{xY^n} = \frac{1}{2c(n-1)Y^{n-1}} - \frac{b}{2c} \int \frac{dx}{Y^n} + \frac{1}{c} \int \frac{dx}{xY^{n-1}};$



# $f(x) = rac{A_0}{2} + \sum_{n=1}^{\infty} A_n \cos\left(rac{2n\pi x}{ u} - lpha_n ight)$

# $f(x) = \frac{A_0}{2} + \sum_{n=1}^{\infty}$

# The Institute for Nanotechnology Innovation (INI)

Behind the grand, polished wood and granite of the Chemistry and Pharmaceutical Science building's entrance hall, down a dim corridor painted an indeterminate, institutional shade, a scuffed rectangle of plastic has been taped across the top board of switches and fuses that controls the power of tens of millions of Rands worth of high-end, precision analysis and measuring equipment.



## The Institute for Nanotechnology Innovation (INI)

A typed sign stuck next to the board warns that, under no circumstances, should the power produced by the auxiliary generator servicing the block be switched off.

#### isiting electricians are instructed to contact the administrative office of the Institute for Nanotechnology Innovation (INI) if they have a problem.

Above the board, the sheet of plastic prevents water leaking down the wall from fusing the connection to the highly sensitive spectrometers, electron and sub-atomic microscopes, diffractometers and analysers, which are housed in a series of cramped rooms scattered throughout the five-storey block.

These are machines that need to be kept turned on. The damage and repair costs caused by a power cut would be immense.

Elsewhere in the building, the cramped quarters and crumbling infrastructure are taking a human toll. For lack of space, the record numbers of postgraduate doctoral students produced at the Institute are squeezed into corridors and throughways in the ageing, modernist block – chairs pressed up against walls at overflowing desks, as they work on their theses.

The conditions threaten the future success of the Institute for Nanotechnology Innovation at Rhodes University, which has established itself at the forefront of international research in the field.

In particular, the Institute's plans for sustainable growth have been placed in jeopardy.

These include expanding INI's strategic partnerships with industry and the government; and establishing a self-funding model by developing and patenting applications from its production of highly specialised materials at the atomic and molecular levels.

The aim is that the ideas and materials generated by the Institute will be used to make actual products, bringing the manufacturing cycle under one roof at the University.

Such beneficiation would ena- In particular, ble the Institute to consolidate the Institute's its technical work manipulating matter at the atomic and **plans for** demonstrated significant value; for example, in producing **arowth have** photodynamic treatments for cancer and more effective been placed ways of using light to destroy in jeopardy. pollutants in the water supply.

#### **DID YOU KNOW?**

The Institute for Nanotechnology (INI) at Rhodes University is at the forefront of international research and is considered as an international leader in the field.



A network of domestic. African and other international researchers uses the Institute for Nanotechnology (INI) equipment on an almost continuous basis.



The nanomaterials that are manufactured by the Institute's students service a global network of pure- and appliedscience researchers and collaborators - and generate much excitement at international conferences, fostering great collaborations.



The Institute's work entails synthesising nanoscopic materials such as single-walled carbon nanotubes, quantum dots and magnetic fluids.

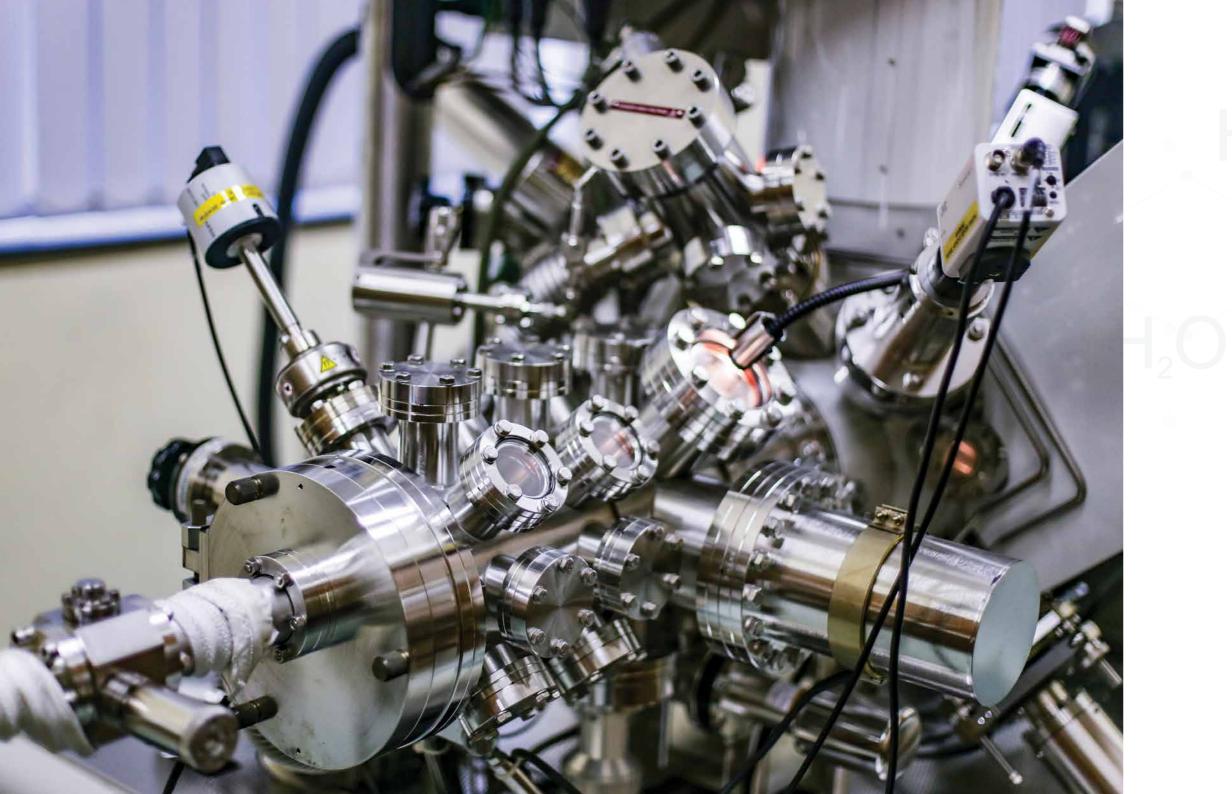


The products and sensors produced by the INI are used to detect diseases at an early stage and to track a range of air- and water-borne environmental pollutants. They are also used in cancer treatments.

The conditions threaten the future success of the Institute for Nanotechnology Innovation at Rhodes University, which has established itself at the forefront of international research in the field.

T. ....

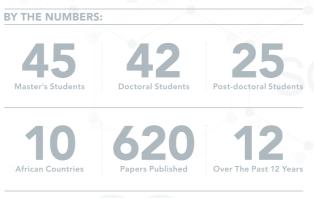
ABOVE: The ageing chemistry building where the Institute for Nanotechnology Innovation (INI) is situated.



It would also enable INI to strengthen its position as the preeminent Institute for the study of the relatively new science of the extremely small (nanotechnology) in Africa, situated at the heart of a global network of researchers and productdevelopers worldwide.

A position that has been achieved by dint of hard work and a single-minded commitment to education and research excellence, as is shown by the numbers: 45 master's, 42 doctoral, and 25 post-doctoral students. The cohort come from ten African countries. In addition, more than 620 academic papers have been published by scholars at INI in accredited international journals over the past 12 years.

However, while the Institute, which was established as a lead institution in a national, triple-helix industry, government and university initiative in 2007, stands on the brink of bridging



what has been described as the "innovation chasm" between research and development, the burden of its past success threatens to overwhelm it.

The cost of maintaining and running the equipment at the Institute, which includes a R25-million Time-of-Flight Secondary Ion Mass Spectrometer (TOF-SIMS), is high. Supplies and parts to keep the machines operational – such as liquid nitrogen, lamps, lasers, pumps, replacement motherboards, etc. – need to be held in stock. Specialist skills are required to care for and upgrade the equipment and train staff and students in its use.

Although the Institute has been funded by the Department of Science and Technology (DST) through Mintek, a state-owned provider of minerals processing and metallurgical engineering products and services, and the National Research Foundation (NRF), as well as Rhodes University, much of the funding for the purchase and maintenance of its high-end equipment has been derived from relatively unstable sources, such as grants received by individual academics.



While the failure of national governments to fund the repair of such equipment is a problem globally, the potential impacts of a resulting shortfall reverberate well beyond the campus at Rhodes University in this instance. A network of domestic, African and other international researchers uses the equipment on an almost continuous basis.

The nanomaterials that are manufactured by the Institute's students, whose research keeps the machines running day and night, service a global network of pure- and applied-science researchers and collaborators – and generate much excitement at international conferences, fostering great collaborations.

In addition to training master's and doctoral students from across the African continent, the Institute works closely with researchers from leading institutes and universities across Europe, North America, South America, Australasia and Asia. For example, it collaborates with leading Chinese researchers at Nanjing University to study the photodynamic effects of new molecule dyes in treating cancer cells.

However, as the Institute seeks to build on its achievements as an international leader in knowledge creation and human capital development, particularly in creating capacity among the African research community, it faces shrinking state support and succession planning challenges to its continued growth and development.

In response, the aim is to strengthen the Institute's position as a hub for the production of internationally recognised and relevant research by:

- Establishing a commercial arm that can create products of value and fund the Institution's applied and pure research; and
- Implementing a plan to manage the Institute's growth effectively and sustainably.

On the applied research front, about half of future efforts will be directed at designing, developing and patenting new products that meet medical, pharmaceutical and industrial needs. Commercial agreements in this area will be signed on behalf of the Institute for Nanotechnology Innovation by Rhodes University. It is envisaged that the Institute will also adopt a more commercially autonomous stance, producing and licensing molecules to be acquired under contract for a fee by large drug firms, which will then conduct the clinical trials, manufacture and sell the new pharmaceuticals with the assent and cooperation of medical research councils.

At the same time, the instrumental aspect of the Institute's applied work will be offset by its continued dedication to pure research, which provides the ideas from which all innovation draws its sustenance. Indeed, the beneficiation from the applied science will enable such studies and foster the future development of the Institute's educational function.

To manage growth, it is foreseen that the shift from research to development will help to fund a fourpronged plan which entails:



**1**: Nurturing a cadre of African researchers in nanotechnology through scholarships and international exchanges.



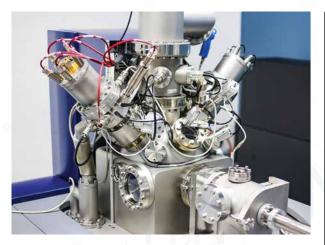
2: Operating, maintaining and replenishing the stock of leading-edge scientific equipment required to manufacture in-demand molecules and fulfil the Institute's scientific mission.

0

 Providing long-term accommodation of an appropriate standard to safeguard the equipment and offer a productive educational environment.



4: Succession and leadership planning, and the implementation of a longerterm governance structure to oversee the transformation of the Institute into a national research institute that can bridge the innovation chasm between research and development.



In large part, the credibility of the Institute's plans to consolidate and expand its educational, research and commercial offerings is driven by the importance of nanotechnology as a relatively new discipline at the leading edge of pure and applied science – and INI's track record as an international leader in this field.

Nanotechnology is a suite of techniques used to manipulate matter on the scale of atoms and molecules which can produce scientific and technological solutions to a range of social and health problems globally, including in Africa. Only in recent decades has it been possible to intentionally modify matter at the nanoscale and INI's work in this field, particularly in its production of stable, new molecular structures for applications in the areas of health, industry and defence, has been hailed globally.

The Institute's work entails synthesising nanoscopic materials such as single-walled carbon nanotubes, quantum dots and magnetic fluids for use in medical applications; and spinning particles into ultra-thin layers to coat electrochemical sensors. The products and sensors produced by INI are used to detect diseases at an early stage and to track a range of air- and water-borne environmental pollutants. They are also used in cancer treatments.

Innovative materials produced by the Institute have also been used to manufacture thin film for pilot goggles that protects flyers' eyes from attack by laser light; enzyme-like catalysts that help to convert low-value compounds produced in bulk by the petroleum and plastics industries into fine chemicals of high value; and to aid the development of local, commerciallyproduced agricultural and solar-power solutions.

The Institute's work entails synthesising nanoscopic materials such as single-walled carbon nanotubes, quantum dots and magnetic fluids for use in medical applications; and spinning particles into ultra-thin layers to coat electrochemical sensors.

With the active support of the University and other funders, the Institute housed in the Chemical and Pharmaceutical Sciences Building at Rhodes University moved to collect much of the equipment required to implement a national project and shouldered a leadership role in helping to coordinate the scheme.

Renamed the Rhodes University or DST Institute for Nanotechnology Innovation, in acknowledgement of the funding and institutional support provided by these two bodies, INI offered postgraduate courses in nanotechnology and initially focused on designing sensors for the early detection of human diseases; the development of sensors for analysis of pollutants and neurotransmitters; and the photodynamic therapy of cancer.

It has subsequently conducted pure and applied research in the development of non-linear optical material; the manufacture of new molecules to produce electrodes better able to detect and break down pollutants in water; the production of enzyme-like catalysts for converting the byproducts of the petroleum and plastics industries into useful chemicals; and the development of new kinds of electrochemical sensors using a variety of leading-edge, nano-structural techniques.

In pursuit of these research interests, the Institute has invested tens of millions of Rands in a range of leading-edge equipment, including an X-ray photoelectron spectrometer; a Raman spectrometer; a dynamic light-scattering, X-ray diffractometer; atomic force and scanning electrochemical microscopes; and a micromeritics surface area and porosity analyser. This complex equipment is highly sensitive to environmental changes and physical movement and should be housed in a specialist facility.

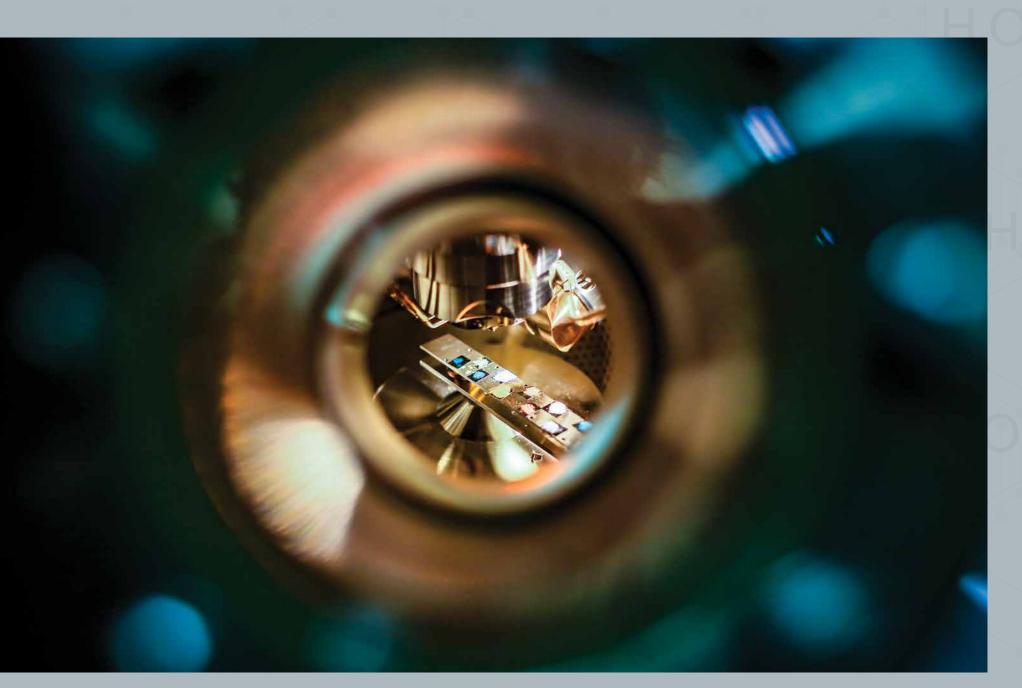
The Institute has collaborated with academics and research institutions in many countries worldwide, including Belgium; Brazil; Britain; Canada; Chile; China; France; Germany; Japan; Kuwait; New Zealand; Romania; Russia; Switzerland; Turkey; and the United States (US), as well with key scholars in South Africa.



### WHAT IS NANOTECHNOLOGY?

Nanotechnology is a suite of techniques used to manipulate matter on the scale of atoms and molecules which can produce scientific and technological solutions to a range of social and health problems globally, including in Africa. Only in recent decades has it been possible to intentionally modify matter at the nanoscale and INI's work in this field, particularly in its production of stable, new molecular structures for applications in the areas of health, industry and defence, has been hailed globally.

The products and sensors produced by INI are used to detect diseases at an early stage and to track a range of air- and water-borne environmental pollutants.



ABOVE: X-Ray Photoelectron Spectroscopy Machine.





The Institute is also committed to promoting national development and supporting transformation both within academia and through its community engagement. This commitment is founded on a keen sense of the importance of producing genuine equality of opportunity to address the legacy of historical wrongs and disadvantage both within South Africa and more broadly across Africa. The Institute's programme of scholarship and other academic support bears testimony to this drive.

This spirit also informs the Institute's community engagement work. INI hosts regular visits from schools in the surrounding Eastern Cape; supports SciFest Africa, which is held annually in Grahamstown where Rhodes University is sited; and works closely with the Khanya Maths and Science Club, which is run by the University.

For its part, Rhodes University houses the Institute, providing office, laboratory, postgraduate and coursework space that can cater to increased student numbers and additional equipment.

It also offers the research staff and students at the Institute the full range of benefits that membership of the University entails, including outstanding library facilities at a new multimillion Rand facility, which subscribes to the leading online journal and publisher databases. Staff and students also have access to computing facilities; excellent internet and dedicated software; printing and graphic services; strong human resources (HR) and finance support; an experienced research office; in-house purchasing and contractmanagement services; asset-management and insurance support; and the backing of the University's advancement office in the field of effective planning and fundraising.

### SOME BENEFITS OFFERED BY THE CENTRE FOR NANOTECHNOLOGY:



Staff and students have access to computing facilities.



Excellent internet and dedicated software.





Strong human resources (HR) and finance support.

Printing and graphic services.

An experienced research office.



In-house purchasing and contractmanagement services.

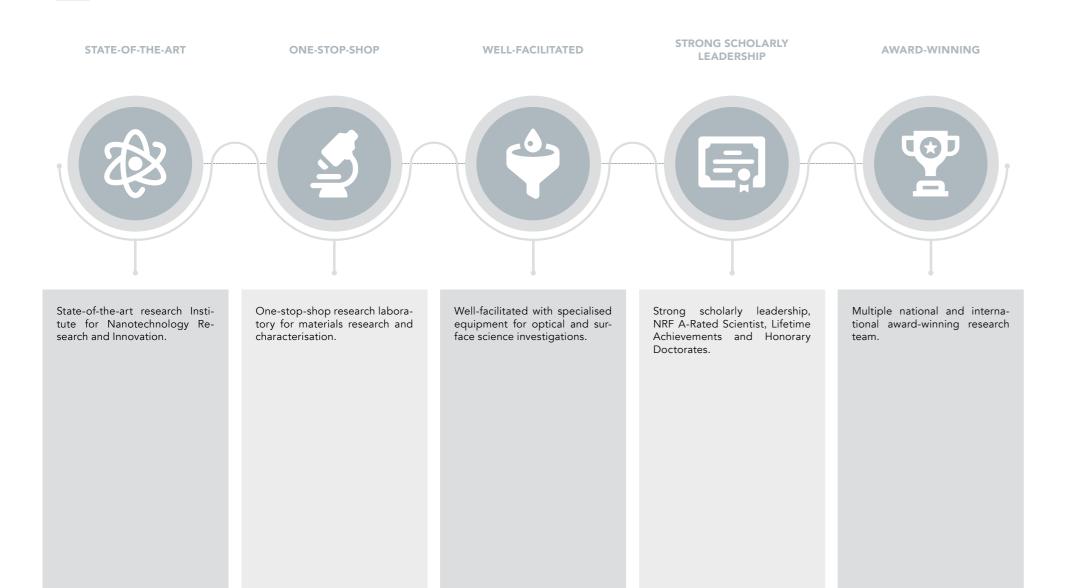


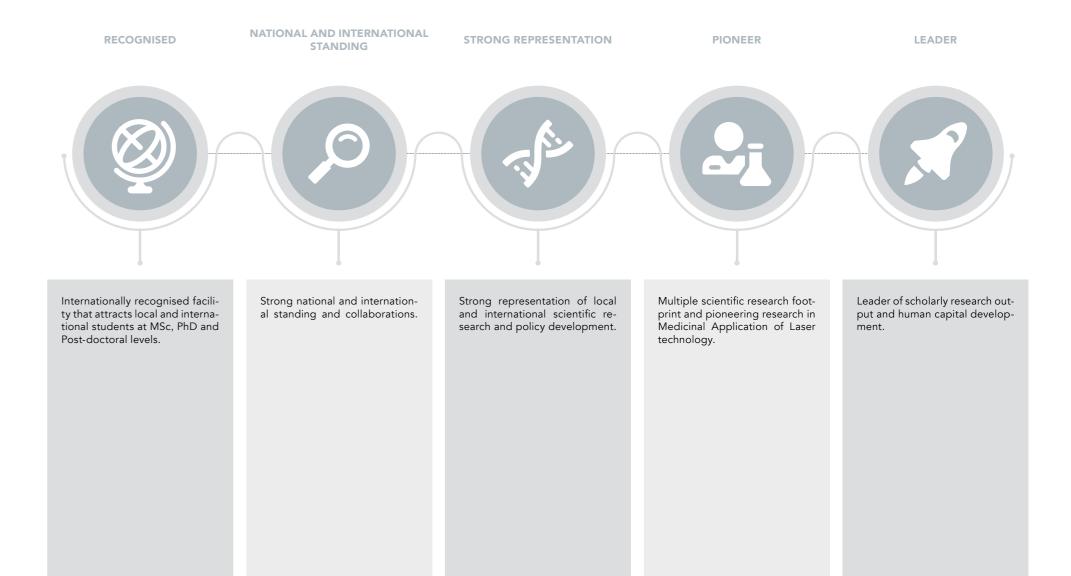
Asset-management and insurance support.

The backing of the University's advancement office in the field of effective planning and fundraising.



### Success Stories







### The Institute for Water Research

Research to Change the World: A revolution in academic thinking and practice that could change the lives of millions of Africans is taking place at the Institute for Water Research (IWR) at Rhodes University.



### The Institute for Water Research

IWR is pioneering a new approach that seeks to engage stakeholders at all levels – from village subsistence farmers to top officials and policymakers – to produce more effective ways of managing water resources.

ractical academic research is being conducted to meet actual needs on the ground, including among the most impoverished communities on the continent, as part of efforts to achieve the Sustainable Development Goals (SDG) established by the United Nations (UN) in 2015.

The goals propose that poverty cannot be eradicated without good water; and that the benefits from water resources development cannot be improved without fair practices.



The Institute's work, which has led to it being appointed as the Water Centre of Excellence (CoE) hub by the African Research Universities Alliance (ARUA) to advance continental water-management efforts, is deploying a "transdisciplinary" approach.

Poverty cannot be eradicated without good water.

#### THE MEANING OF TRANSDISCIPLINARY:

"Transdisciplinarity" is a new word coined to describe an evolving way of bringing together the broadest possible range of knowledge from academic disciplines, practical experience and local understanding. For the IWR it means working collaboratively on 21<sup>st</sup> Century water crises.

Transdisciplinarity changes how universities see themselves and their role in society. It is regarded as the best way of addressing the great challenge of creating sustainable water management systems that meet everyone's everyday needs.

This challenge has many faces – political, social, economic and environmental. For example, the IWR promotes the view that democratic access to water should be a matter of social justice, and acknowledges that rights to the resource have been historically skewed.

#### **OBJECTIVES**:



Research into the ways natural water systems function, linked to responsible and fair human use of water.



Build a new generation of African water resource academics and professionals.



Undertake contract projects aimed at solving specific water-related problems.

E

Teach at all levels, across faculties, within Rhodes University, and in community education.



Communicate collaboratively, growing water knowledge interactively and through writing.



Serve in research and management committees and in policy forums outside Rhodes University.



Practice Adaptive Systemic Approaches to water resources management in South Africa and beyond.

As the Institute's research has shown, landscape degradation, water shortages and pollution constitute increasingly intractable problems as the impacts of climate change and continuing rapid development mount.

Dry cracked earth is pictured on the dry dam bed, 22 October 2019, at the Fika-Patso dam near Qwaqwa, in the Free State. The area is experiencing the worst drought in modern history. As seen in The Sunday Times: https://www.dailymaverick.co.za/article/2019-12-04-drought-stricken-sa-has-above-average-water-consumption (Photo Credit: Alaister Russell Photography)





As the Institute's research has shown, landscape degradation, water shortages and pollution constitute increasingly intractable problems as the impacts of climate change and continuing rapid development mount.

Large-scale, complex challenges such as that of effective water-resources management are called "wicked" problems in the literature. Piecemeal efforts cannot solve them. In-

stead, they require multiple, concurrent interventions that cohere to produce holistic, systemic change.

Accordingly, IWR favours the production of big-picture solutions that require scholars to step out of their traditional silos and operate across disciplines. For example, as part of the joint efforts, social scientists collaborate with ecologists; hydrologists work with political scientists, and educationalists facilitate transformative social learning.

Academics need to abandon their ivory towers and seek insights from practice.

Leveraging transdisciplinarity to address real-world, water-resource management challenges, the Institute has adopted what it describes as an "adaptive systemic approach".

The aim is to exploit academic expertise across disciplines and integrate this with context-specific knowledge and understanding on the ground and at the level of governance to produce solutions that can be implemented at scale from the local to the continental levels.

The approach adopted by IWR depends on the twin pillars of engaging with real-world stakeholders beyond the campus gates and creating a new vision of collaborative academic excellence within the University itself.

#### **Public Engagement**

The relationship-building aspect of the Institute's work entails fostering close ties with a full range of stakeholders, from municipal officials to national policymakers, and from individual householders to large-scale commercial interests.

Academics need to abandon their ivory towers and seek insights from practice.

In 2019, IWR convened a city-hall meeting attended by more than 150 local officials, residents, farmers, business people and technical experts to foster collaboration on how to overcome the water crisis facing the University's drought-stricken hometown, Makhanda.

Instead of just talking about engaged research in a lecture, the Institute sought to undertake an engaged research activity with the whole town about water-resource management, which is one of the local area's most pressing issues.

The "Makhanda: Water Works for Everyone" engagement was explicitly conducted to change the local community's perception of the water crisis by interactively sharing with them with accurate information about the systems of water supply and treatment, and how these are governed.

The event was held in the belief that shared knowledge shifts behaviour from blame to constructive engagement.

Growing and sharing knowledge to produce more effective democratic engagement, is one of the ethical principles underpinning IWR's work, and has informed its position in the Tsitsa River catchment area in the Eastern Cape.

In a rare example of inter-university and cross-sectoral collaboration, the Institute has collaborated with the Department of Environment, Forestry and Fisheries (DEFF) and academics from Rhodes University and other universities to empower local Tsitsa catchment residents. A key aim has been to build governance capability so village residents actively contribute to decisions about land and water that affect them, such as the plan to build two new dams on the river.

Drawing on the social learning experience, the project implemented "learning words" workshops, equipping villagers across the area with the isiXhosa and English vocabulary to describe their experiences of, for instance, livestock management and growing plants to stabilise soil erosion.

Deploying effective communication tools, the local community became increasingly able to secure natural resource management that would support their livelihoods.

In the process of empowering the villagers, IWR has been forging a governance model for local engagement in natural-resource management that may be rolled out more widely, creating impacts across South Africa, Africa and globally.

#### A Pioneer in Africa

The Institute's relationship-building work is supported by its leading-edge technical capacity and expertise in hydrology, environmental water quality, ecology and governance.

IWR is a continental pioneer in the field of hydrology, which is the study of water volumes and flows, including the links between rainfall, river flow, and groundwater. Institute hydrologists have developed a sophisticated model that can be used to monitor capacity and track the impacts of water usage in a wide range of geophysical environments, from the complex, fractured-rock aquifers that supply water to much of the Western Cape, to the great river systems of the continent, including the Congo, Zambezi and Okavango river basins in Southern Africa.

As a result, IWR is playing a leading role in designing an earlywarning, drought-forecasting system for South Africa.

At the same time, the Institute has been a standard-bearer for Rhodes University's commitment to the continent through the African Research Universities Alliance (ARUA), which the University co-founded in 2015.

As the Water Centre of Excellence, appointed by ARUA, IWR is leading a project titled "Unlocking resilient benefits from African water resources" in partnership with the alliance and the United Kingdom Research and Innovation (UKRI) initiative.

The partnership was developed through a Global Challenges Research Fund (GCRF), which aims to strengthen pan African-United Kingdom collaborations across all disciplines. As a team leader, the Institute is charged with fostering collaboration and helping to mobilise excellence among water researchers from South Africa, Ethiopia, Rwanda, Senegal, Tanzania, Uganda, Nigeria and the United Kingdom.

The pan-African academic cohort will seek to address waterrelated aspects of the SDGs through stakeholder-engaged research to catalyse change.

As part of the project, IWR is seeking to roll out its water resources assessment model across the continent. The work is considered crucial to address the massive uncertainty around capacity in Africa, where large areas are hugely vulnerable to water shortages.

Deploying a hydrological-data model developed and implemented by the Institute in South Africa, the aim is to assess the capacity of every catchment area. This should provide a baseline for other countries across the continent, against which future water capacity may be measured.

The modelling platform also provides for uncertainty analysis.

Since Africa is such a data-scarce environment, any water resource assessment that takes place has a considerable measure of uncertainty. IWR's platform takes into account several avenues of uncertainty, such as rainfall, catchment area characteristics, water use, and proposes a range of possibilities for effective water-resource management.

A further benefit of the platform's implementation is that it will foster greater African capacity for hydrology, in particular since the continent-wide water-resources mapping will need to be updated every 15 or 20 years.

As well as sharing its domestically-produced expertise to produce Africa-wide benefits, the Institute is continuing to pioneer water resources science in its other South African projects. For example, IWR is seeking to transform the management of the highly polluted Vaal River, producing new approaches to using living organisms to detect pollution.

In another project, Institute staff are seeking to measure the impacts of rainfall on the domestic natural resource systems that feed water supply by focusing on water usage at the level of the natural landscape. The work has led IWR to produce one of the few surveys on the continent that assesses how large tracts of land (and the plants that grow on them) use and lose water.



ABOVE: Professor Tally Palmer, Director of the Institute for Water Research



#### Sustainable Water for Everyone

All of the Institute's efforts are informed by a bottom-up approach that supports the implementation of sustainable systems for water management.

IWR aspires to engage at the problem point of water, which is in individual people's lives, and at the scales that emanate

The approach has guided the Institute's efforts from local to national levels in South Africa - even shaping the significant contributions it has made to national law and policy on the issue of water-resource management.

At the neighbourhood level, IWR's hydrologists have pushed for more effective measurement of water usage at Rhodes disconnected water tanks. Meanwhile, at the municipal level, the Institute's work monitoring the impacts on local aguifers of water extraction from a local borehole field has dovetailed with its long-term relationship-building efforts with city officials, which has led to the establishment of a collaborative municipal water forum.

The aim is to coordinate with Makana municipality in managing the area's continuing water crisis more effectively. In addition the information from the monitoring has been shared with the provincial groundwater officials, who have found it very useful. More widely, IWR's mission to produce excellent research in support of change towards social-ecological justice has significant political implications from the neighbourhood to the national levels.

The Institute has adopted the view that the promotion of | individually costly. environmental sustainability depends on fostering social iustice, especially in South Africa. At the same time, people have to use less water. There is a reality check here: Everyone has to live more frugally water-wise.

#### A New Generation of Water Professionals

The Institute trains honours, masters, and doctoral students in a range of water-related subjects, with the emphasis on fostering the ability to use their knowledge in transdisciplinary ways.

The result is that IWR graduates and researchers produce excellent practice and research in specialist areas, such as water governance, hydrology, aquatic ecology, pollution and water quality, and are also resilient, adaptive practitioners wellversed in real-world water problems.

In its reimagining of the knowledge project, the Institute has further sought to foster greater collaboration among departments and the production of a new set of scholarly pioneers or "boundary riders" – that is, academics who work at the interface of numerous different disciplines to forge holistic solutions to actual problems.

However, within an academic system that tends to prize high performance as an aspect of specialisation, there are recognition of the benefits and value they can bring.

The problem is that the capacity to engage at an academically individuals in each of those discourses to make their specialist excellence available into the shared space, which can be

In this regard, one of IWR's most significant contributions may be found in the vision that it promotes of a new kind of University and new indicators in academia and in being able to demonstrate the value and outcomes of a transdisciplinary

Rhodes University is committed to reducing its ecological footprint in terms of its water usage strategies. The Infrastructure and Operations Division is responsible for implementing water sustainability measures in line with the policy. This includes:



Monitor and minimise the University's water consumption.



Review opportunities for reducing the use of mains water, and install alternative water systems on campus wherever feasible.



Plant indigenous flora to reduce water



Promote water efficiency practices to all the University's stakeholders.

#### Leading by Example

As part of concerted efforts to practice what it preaches, the Institute is seeking to lead the way at both the institutional and individual levels in promoting water conservation at Rhodes University itself.

At the individual level, it is seeking to foster greater consciousness among students, academics and workers on campus about their water use in their everyday lives and how they can change their behaviours accordingly.

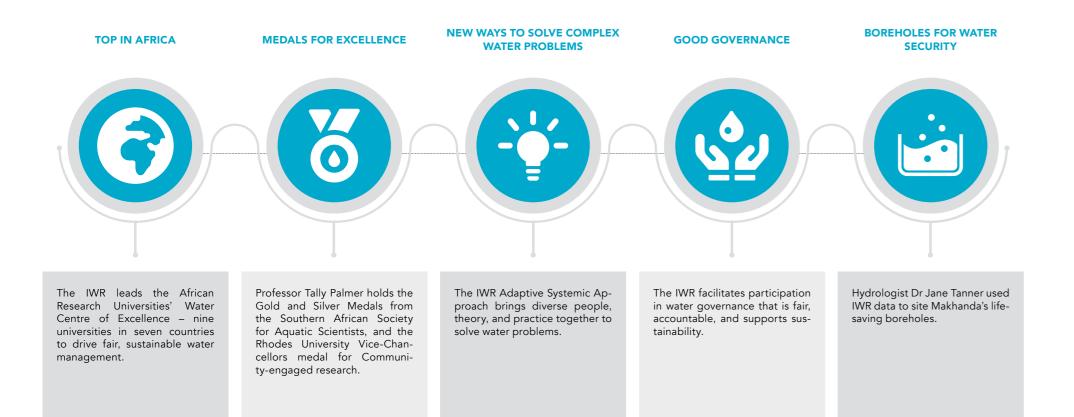
At the university-wide level, IWR holds an annual open day, and, in 2020, engaged senior managers on the importance of realising the conservation targets for water, electricity and paper which are indicated in Rhodes University's Institutional Development Plan (IDP).

The challenge is inadequate monitoring of water consumption, as well as the need to apply for and meet the conditions of a groundwater-use licence because the University is pumping from eight or nine boreholes at any one time.

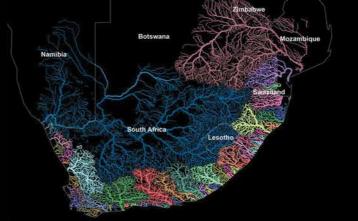
In this regard, IWR has promoted the position that, if the University is to act as an advocate of sustainable waterresource management, it should become a responsible citizen concerning its water use. 🔻

**RESULTS:** IWR graduates and researchers produce excellent practice and research in specialist areas, such as hydrology, aquatic ecology, pollution and water quality, and are also resilient, adaptive practitioners well-versed in real-world water problems.

### Success Stories







#### MAP OF SOUTHERN AFRICA'S RIVERS

Dr Sukhmani Mantel created the bright, effective South African rivers map. You can visit the website here: https://theconversation.com/what-we-learned-when-our-map-of-southern-africas-rivers-went-viral-110735

The Isivivane Fund is an integrated approach to building and maintaining life-long relationships with stakeholders based on the development of a unique and special partnership between Rhodes University, its students, alumni, and donors.

### Isivivane Student Fund

**The Challenge:** There are several challenges to address if we are to maintain our position in educating young people who critically engage with knowledge and its production. These are the young people who are democratic citizens and ethical leaders committed to the values of human understanding, social justice, human development and service to society; and who will become agents of social change and societal transformation.



# Isivivane Student Fund

A primary challenge is meeting the financial demands of a growing institution and student body in a climate of diminishing State expenditure on higher education.

his decline in State support means that universities have to rely increasingly on student fees to maintain their operations. However, under the present economic circumstances, families struggle to afford inflation-related fee increases, and even more so for those students who come from families of meagre means.

Transformation of the student body at Rhodes University, which sees black South Africans accounting for over 60% of the student body, should be seen as a critical indicator of success. However, this has brought with it the challenges of funding a changed population, many of whom come from impoverished backgrounds and are often first-generation university entrants.

# **HERRICHTETT**

Rhodes University commits close to R30 million of operational funds to support students from financially disadvantaged backgrounds. In 2015, over 130 undergraduate students who were accepted for study at Rhodes University were denied entry, as a result of their inability to fund their studies and the shortage of alternative funding sources. Often these individuals are unable to secure loans from financial institutions and, in the absence of university or donor support, their hopes and aspirations to experience tertiary education are dashed.

National Student Financial Aid Scheme (NSFAS) funding is entirely inadequate in the face of ever-increasing demand. In addition to the needs of the poorest of the poor, there are the needs of the 'missing middle' to consider. This constituency is mostly ignored by NSFAS and most donors and as a result, left to fend for itself. Fee payers are often the public servants, retail workers and small business owners who simply do not have sufficient after-tax disposable income to fund their children's university

studies. Unfortunately, these are often students who may have the most excellent chance of succeeding at university, having had a good schooling experience and a stable middle-class upbringing, distanced somewhat from the massive challenges faced by the bulk of South Africa's growing population.

NSFAS funding is entirely in adequate in the face of ever-increasing demand.

### **OBJECTIVES:**



GOAL: Raise R150 million to attract financially-needy students at undergraduate level.



#### **Increase Postgraduate Intake**

Since 2011, Rhodes University has made a commitment as part of its enrollment and academic planning, and overall institutional planning, to increase the number of postgraduates, their proportion in relation to our student body and their research outputs.



GOAL: Raise R400 million to maintain residences and dining halls.



**Grow Endowment to Ensure** 

GOAL: Raise R300 million in endowment for future sustainability of Rhodes University student financial aid.





#### **OUR SOLUTION**

The Isivivane Fund is an integrated approach to building and maintaining life-long relationships with stakeholders based on the development of a unique and special partnership between Rhodes University, its students, alumni, and donors.

The fund is inspired by the Zulu proverb "Ukuphosa itshe esivivaneni" (which means to throw one's stone on the pile or monument) to make a personal contribution to a greater common cause. This contribution is made in the spirit that everyone buys into, and does their bit to create, a motivating vision of the future.

Diverse people contribute to the placement of stones on an isivivane over time, and so another way of seeing isivivane is as a form of collective memory.

The main goal of the Isivivane Fund is to secure sufficient funding from the community of Rhodes University and beyond to ensure no academically-capable but the financially-needy student (undergraduate and postgraduate) is refused entry to Rhodes University. At Rhodes University, we believe that if students have the academic ability and the will to succeed, then their financial circumstance should not be a barrier to acquiring higher education. This is not a public relations exercise but an undertaking by our University to be wholly committed to accepting and supporting the most deserving students, regardless of their financial backgrounds or circumstances.

We understand that a campus composed of exceptional students, including those of meagre means, is a core element of a world-class university. When at Rhodes University, students are provided with an intensive support structure and residential environment that is conducive to good scholarship and collegiality.

Through Rhodes University's generous student financial aid, we have managed to transform lives and create dreams and hope where there was none before. Today, our ability to attract the best talent from all backgrounds is still a defining characteristic of our University and something in which we take pride. Through Rhodes University's generous student financial aid, we have managed to transform lives and create dreams and hope where there was none before. We want to continue with this trajectory but are mindful of cost implications attached to such a discourse.

We hope to achieve all this through the following objectives:

- Ensure undergraduate opportunities;
- Increase postgraduate intake;
- Maintain residences and dining halls; and
- Grow endowment to ensure sustainability.

Just as we will never stop seeking the best students, we must also constantly reaffirm our commitment to making a Rhodes University education accessible to everyone. This initiative is our opportunity as the University community to make a significant statement to the world that we are indeed the place "where leaders learn". We hope that you will see value in supporting this campaign.

#### Ensure Undergraduate Opportunities

### <u>GOAL</u>: Raise R150 million to attract financially-needy students at undergraduate level

Rhodes University is home to students of all races, classes and cultural backgrounds, and we are proud of the equitable and cosmopolitan nature of our student body. To maintain this diversity, it is necessary to devise a plan that consistently delivers this diverse group to Rhodes University. Unfortunately, that is not the case at present, and this is due to socio-economic situations.

Through this strategy, we hope to attract individuals from underprivileged backgrounds who are academically capable of benefiting from a Rhodes University education. Students who might not have had the chance to exercise their potential through tertiary education will be given the opportunity to do so. To nurture excellence and ensure that all our students continue to thrive and graduate, Rhodes University has numerous student support programmes. These include the Foundation Phase and the Trojan Academic Initiative – an academic mentorship programme for first years. We want to create a robust undergraduate base for our postgraduate trajectory as we seek to position Rhodes University as a destination of choice for postgraduate studies in South Africa.

#### Increase Postgraduate Intake

Since 2011, Rhodes University has made a commitment as part of its enrolment and academic planning, and overall institutional planning, to increase the number of postgraduates, their proportion in relation to our student body and their research outputs. The Sandisa Imbewu Fund supports our dual strategies of supporting postgraduate students and academic staff – a fund developed to provide postgraduate bursaries and support scholarly research imperatives. We believe this strategy will bring us closer to our trajectory of becoming a more research-intensive university with a more significant postgraduate presence.

To achieve this, we aim to:

- Increase the postgraduate proportion of the student body to 30% while also ensuring the diversity of the postgraduate population.
- Raise the total research output for the Institution by encouraging and supporting all academic staff members to produce at least one accredited output per year.
- Significantly increase the percentage of academics with doctoral-level qualifications to at least 75%.
- Grow the number of research focus areas.



#### THE MEANING OF ISIVIVANE:

The fund is inspired by the Zulu proverb "Ukuphosa itshe esivivaneni" (which means to throw one's stone on the pile or monument) to make a personal contribution to a greater common cause. This contribution is made in the spirit that everyone buys into, and does their bit to create, a motivating vision of the future.



Rhodes University Vice-Chancellor, Dr Sizwe Mabizela with some of the Isivivane Student Fund recipients.

#### Heighten Student Experience

### $\underline{\text{GOAL}}:$ Raise R400 million to maintain residences and dining halls

This goal is driven by the University's goal of "creating a living and learning student support system and an environment which is inclusive and conducive to a healthy lifestyle, personal growth, development and academic success for our students". Rhodes University has always taken pride in offering its firstyear students many opportunities. This includes the chance to live in one of the University's residences and experience the joys (and sometimes the downsides) of communal living, as they adjust to being independent and away from their families. For many students, this is the first time they have lived away from home, and the rush of freedom can be exhilarating. Living in a campus residence for a year or two allows young people to experience these freedoms but still have the security of a home base with cooked meals and access to academic support.

However, as an over-a-century-old university, our infrastructure, especially residences, are in dire need of maintenance. In November 2013, the University contracted Council for Scientific and Industrial Research

(CSIR) to conduct an Infrastructure Condition Assessment which revealed that the University needs over R2 billion to catch up with the maintenance backlog it faces. Through this campaign, we hope to use the centenary campaigns of each house/hall to launch an appeal to former students and companies. If all goes according to plan, we will maintain just over 20 residences and three halls in 10 years.

#### Grow Endowment to Ensure Sustainability

### <u>GOAL</u>: Raise R300 million in endowment for future sustainability of Rhodes University student financial aid

Rhodes University has launched its biggest-ever student endowment fund, the Isivivane Fund. The fund seeks to raise enough money to deal with the long-term plan of making Rhodes University home for all who meet its entry requirements.

Student financial aid funds and support raised through our Annual Fund campaign ensure that today's students have the resources to thrive while new endowments will ensure a sustainable base for future generations. Funds for the Isivivane Fund will come through the following:

- The Rhodes University Governors' Fund to assist disadvantaged students from the Eastern Cape who attend secondary school in Grahamstown East or Township students who wish to be admitted to Rhodes University.
- **The Jakes Gerwel Scholarship Fund** to attract talented, financially-needy students to Rhodes University.
- **The Sports Foundation** to maintain sports facilities to attract talented young people to Rhodes University.
- Sandisa Imbewu to support postgraduate students and academic staff research endeavours.

#### Why Rhodes University?

As a small, world-renowned African university, there is ample evidence to support our claim that Rhodes University is a place "where leaders learn". For over a century, we have been educating individuals who have made significant contributions to the development of South African society and the establishment of new knowledge.

Rhodes University is an institution committed to the pursuit of excellence in teaching, learning, research and community engagement, and, as such, represents a valuable investment opportunity in higher education.

Factors that support our endeavours include:

- A favourable academic staff to student ratio, which means that students are guaranteed easy access to staff and individual supervision.
- The best undergraduate pass rates and graduation rates in South Africa.
- More Rhodes Scholars produced per capita than any other South African institution.
- A high percentage of students living in residences, which provide above-average opportunities for students to broaden their interests and hone their leadership skills through involvement in student leadership structures, clubs and societies.
- Internationally-recognised degrees.
- A strong focus on community engagement many students are engaged in academic outreach projects or applied research, made more feasible by the University's location in Makhanda (formerly Grahamstown).
- Supportive and engaged Alumni who remain fiercely proud and connected to their alma mater.
- Committed staff who take a personal interest in the progress of their students.

Anecdotal feedback from donors shows that we tend to produce well-rounded students who are competent and effective employees and thus are highly sought after in most employment environments.

#### Expected Impact

As Rhodes University's partners in this campaign, donors have the benefit of knowing that they will be playing a role in securing the futures of deserving students for whom this opportunity would otherwise have been impossible. Their support will not only allow Rhodes University to include more economically disadvantaged students; it will also provide an invaluable service to them as individuals by exposing them to greater diversity at Rhodes University.

As Rhodes University demonstrates its responsiveness to the social and economic imperatives of South Africa by producing demographically representative graduates with leadership potential, donor involvement in this project ensures an investment in the financial future and social stability of the Eastern Cape and the country as a whole. **\*** 



As a small, world-renowned African university, there is ample evidence to support our claim that Rhodes University is a place "where leaders learn".



### Success Stories

#### Some highlights of Isivivane in 2019:

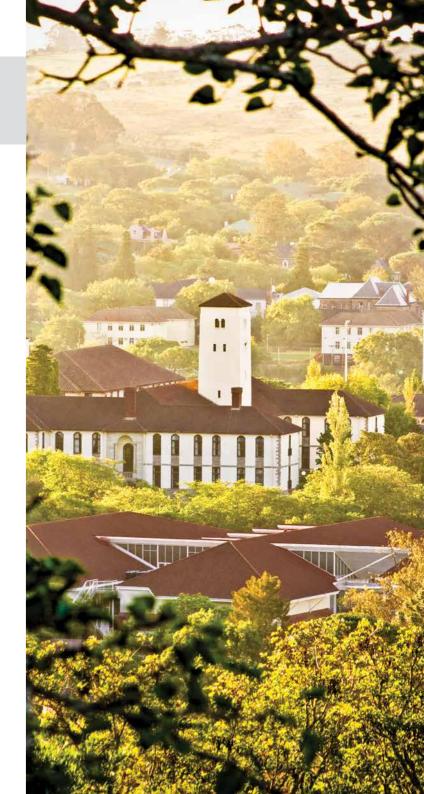


#### To date we have seen the following:



An increase in number of SETAs that have come forward to assist Rhodes University this year with BANKSETA being one of our biggest funders for the year. Over R50 million raised from SETAs between 2018 and 2020.

We have also seen a significant increase in funding for our postgraduate students which is something that we find incredibly exciting because the numbers were low in 2018 and 2019.





"As an institution of higher learning, we cannot sit and watch when young people amongst us are condemned to a life without hope; a life of despair because of the failure to provide them with the education they need and deserve. We must brighten the corner where we are."

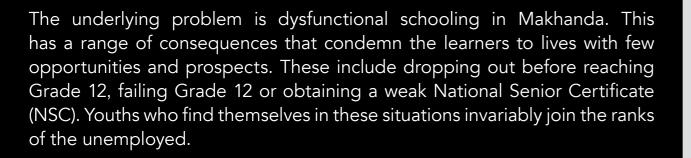
DR SIZWE MABIZELA VICE-CHANCELLOR AT RHODES UNIVERSITY

### Pathways to Education

There is starkly unequal access to quality education in Makhanda (formerly Grahamstown). Statistics show that middle-class black learners at fee-paying schools have a three out of four chance of exiting the system with a goodquality matric and entering a top university. By contrast, learners at "non-fee" schools have less than a one in ten chance of reaching this level.



# Pathways to Education





<sup>—</sup>outh unemployment is one of the most severe socioeconomic problems facing contemporary South Africa, and it has its roots in the generally dysfunctional public schooling system.

Rhodes University is the most significant institution in Makhanda; it is the biggest local employer, and it serves as the educational hub around which the city functions. Since



Dr Sizwe Mabizela

late 2014, the University has been led by Dr Sizwe Mabizela. When he was inaugurated as the University's 6<sup>th</sup> Vice-Chancellor in early 2015, he committed to lead a University that would address head-on the challenges of local young people and build a more inclusive city. He positioned the University firmly and unambiguously in its locality, the City of Makhanda.

#### Dr Mabizela summarised the prevailing reality as follows:

"The Eastern Cape Province is the worst-performing province when it comes to public education. Since 2007, except for two years n 2009 and 2010, the Eastern Cape has come last of all provinces in matric pass rates. Every single year its matric pass rates have been way below the national pass rates. In Makhanda, we have a collection of some of the best schools in the country interspersed with some of the most dysunctional schools imaginable serving the majority of our young people."

"The Eastern Cape Province is the worstperforming province when it comes to public education."

- DR SIZWE MABIZELA

#### VICE-CHANCELLOR'S INSPIRATION:

Its big, bold vision: Embracing a whole town, building agency and pride in a wide range of stakeholders.

term.



A shared future: Built on the founding principle that University, town, community and learners are in this together. Without a fundamentally transformed public schooling system providing quality learning to all, the city has no future, and the University has no future. This means that the University and its partners are committed to the programme for the long

**Unlocking new energy and commitment:** On an annual basis, over 700 students are mobilised in structured mentoring and tutoring roles to bring a new positivity to the town and the University.

**Partnership:** The University is working with schools, principals, teachers, parents and learners in collaboration through the trusted educational agency GADRA Education, whose educational activities in the city over 50 years make it the most widely respected agency across all sectors of the community.



( )

**Targeted programmes:** Based on GADRA's first-hand understanding of the challenges and its successful work in opening opportunity and access for working-class learners to higher education the programme is working in ways that deliver measurable progress in a short time.

**Tight, disciplined focus:** Working only in those schools and spaces where stakeholders are lively and engaged, building achievement and winning others over to participation as success and ownership under the programme by early participants grows.

Learning and sharing: Through its "from the ground up" approach, the programme is trialling many innovative interventions. It is committed to sharing these models and the learning and strategy they have informed. Rhodes University is committed to developing research and advocacy depth to become the national centre for schooling research and transformation.



"In Makhanda, we have a collection of some of the best schools in the country interspersed with some of the most dysfunctional schools imaginable serving the majority of our young people."

- DR SIZWE MABIZELA



Having outlined the problem, he then suggested that Rhodes University should take some responsibility for addressing it.

"As an institution of higher learning, we cannot sit and watch when young people amongst us are condemned to a life without hope; a life of despair because of the failure to provide them with the education they need and deserve. We must brighten the corner where we are."

Public schooling is one priority area in which the University would focus its attention and capacities. Specifically, Dr Mabizela has positioned Rhodes University to assume the leadership of a determined, focused and practical commitment to revitalise public schooling in the city.

Rhodes University has however recognised both its inherent limitations in managing and sustaining community engagement and the fact that there is considerable off-campus civil society competence in this regard. The University has thus entered into a partnership arrangement with GADRA Education, the city's oldest, most established and most effective education Non-Governmental Organisation (NGO).

#### Connecting Pathways to Learning in Early Childhood Development and Education

Children's learning starts at prenatal development, and there is widespread consensus that one of the most critical formative periods for children's learning and development are the early years, framed by the concept of Early Childhood Education which includes the **trajectory of 0-9 years-old**.

When connecting learning pathways, there is a need to focus on the notion of **"in-betweenness**", as this is the connecting space between diverse learning spaces:

- The interconnections between home and schools or care centres;
- The interconnections between parents, teachers and children;
- The interconnections between reading, mathematics and the life world of the child;
- The interconnections between Grade R, 1, 2, 3 and 4 and early learning and development;
- The interconnections between home language and languages used in school; and

• The interconnections between formal learning and playbased learning.

The Early Childhood Development (ECD) programme is geared towards opening up and supporting these "connection spaces", emphasising three key aspects of Early Childhood Development and Education (ECDE):

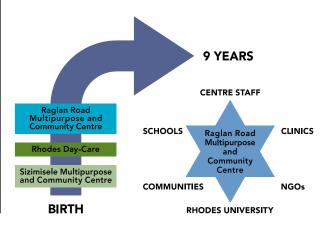
- An interconnected learning pathway approach that focuses on children aged 0-9;
- The interconnectedness of the broader community in the development and learning of the child; and
- A social-cultural, play-based approach to the development and education of children.

By establishing nodes of access at existing facilities, such as the Raglin Road Multipurpose and Community Centre and Sizimisele Multipurpose and Community Centre, as well as the Rhodes University Multipurpose and Community Centre, an immediate space for trialling new ways of learning and being will be created.

Each node will be central in connecting the learning and development of children to the broader community (parents/ caregivers, clinics, schools, NGOs and the University).

The emphasis at the centres will be play-based learning with the intention to:

- Connect children's life-world experiences with development and learning;
- Develop children's emergent literacy including story-telling, emergent reading, vocabulary development' etc. through play-based learning; and
- Develop children's emergent numeracy with an emphasis on problem-solving and the role of mathematics in the lived world of the child through play-based learning.







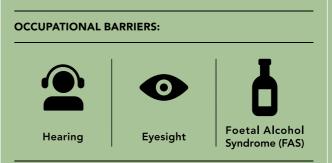
#### Homework Clubs - Rhodes University Education Faculty Work at Core Primary School



#### **OBJECTIVE:**

The overall objective of the Homework Clubs programme is to support learners' academic development in such a way that each learner is developed in areas of particular weakness to full and meaningful engagement with text and thus access to the curriculum in all subject areas. The programme leverages the strategic partnership with Rhodes University by using Education Faculty students (BEd and PGCE students) to work with Foundation Phase and Intermediate Phase learners to support literacy development.

#### Addressing 'Barriers to Learning' Pilot



#### Nine-Tenths





The top 60 Grade 12 learners at selected 'schools of excellence' in Makhanda are linked up with students from Rhodes University to mentor for the year. Mentoring focuses on personal planning, studying skills, written work (mostly summarising) and tertiary applications. The mentoring intervention has been successful in recent years in increasing the number of disadvantaged learners that access Rhodes University.



#### High Impact Supplementary School (HISS)

Makhanda's overall performance in the NSC examinations is inadequate. The cause of this problem is inadequate schooling. However, the consequences of this underperformance are carried not by the schools but by the learners. Learners who fail or pass poorly have very few meaningful options available to them. Their schools will not take them back, their applications to tertiary institutions are unlikely to be successful, and their prospects of securing work without a reasonably strong National Senior Certificate are slim. In short, these learners are stuck and face a future of hardship and strife.



The High Impact Supplementary School (HISS) intervention prepares Grade 12 learners for supplementary examinations in February/March following the final NSC examinations in October/November of the previous year. It does this by offering an intensive 'high impact' programme of educational activities. Teaching is delivered by Rhodes University academic staff while students provide mentoring and tutoring. The school provides its disadvantaged beneficiaries with the opportunity to access the University, either directly on receipt of their supplementary examination results in May, or indirectly via the GADRA Matric School.

#### Virtual Learning Initiative

This project aims to tackle the problems faced by schools in Makhanda by targeting 'foundational' knowledge in English and Mathematics.

There are specific language challenges. The pass mark for English is 40% (as opposed to 30%, like it is for other subjects). Rhodes University requires a minimum of 50% for English as a prerequisite for considering any candidate. Furthermore, to obtain a Bachelor-level pass, one needs four designated subjects over 50%. The quest, therefore, is to maximise the number of Bachelor passes to ensure that as many learners as possible obtain more than 50% for English.

Another problem faced by learners is the generally low level of competence in English. The issue to understand is that while 40% or 50% in English may seem like an acceptable result on the surface, it represents a low level of competence in the language. This constitutes a significant constraint to satisfactory academic performance because English is the prescribed Language of Learning and Teaching (LoLT). That is to say, learners are taught in English and write their examinations in English (in all subjects other than isiXhosa). Because of their low English competence, they struggle in other subjects, especially vocabulary-heavy content subjects like Life Sciences and Geography.

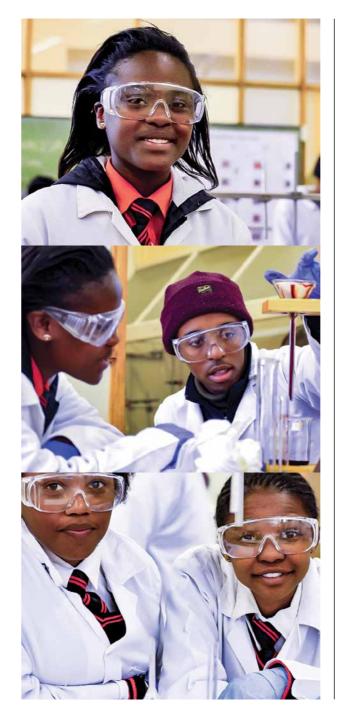
The local schools also share a common set of problems pertaining to Mathematics. These include the following:

- The numeracy competence that Grade 8 Learners enter high school with is low.
- The teaching of Mathematics in Grades 8 and 9 is inadequate to enable the learners to catch up.
- Consequently, at the end of Grade 9, most learners have no option but to select Maths Literacy.









- The proportion of learners doing Maths Literacy is very high, and, conversely, the ratio of doing Mathematics is meagre. For example, of the 139 learners in Grade 12 at Mary Waters High School in 2017, 130 (94%) were doing Maths Literacy, and only the remaining nine learners (6%) were doing Mathematics.
- Of the few learners taking Mathematics, most obtain less than 40% for the subject, thereby undermining their chances of accessing any Bachelor Degree course.
- The Maths Literacy results at Grade 12 level are poor in all Makhanda under-resourced schools, including Mary Waters High School, Ntsika Secondary School and Nombulelo Secondary School.

Rhodes University offers Mathematics to selected high schools in the form of technology resources and enrichment support.

Rhodes University student volunteers provide support in two programmes, namely liNtetho zoBomi (Existential Conversations) and the Post-Graduate Certificate in Education (PGCE) Senior Phase.

### **Mobile Science Lab**

Mostunder-resourced schools do not have science laboratories. This puts the learners at a disadvantage in developing scientific 'curiosity' and obtaining good results in compulsory practical assessment tasks. To aid this development, Rhodes University offers a Mobile Science Laboratory (MSL) to high schools.

The recently refined approach for this programme is characterised by the increased concentration on Grade 8 and 9 Natural Science. Teacher participation and commitment are a prerequisite, with teachers being expected to present the experiments. Adequate capacitation of the teachers will be provided by Rhodes University, in the form of Teacher Professional Development. The Mobile Science Lab will act primarily as a transportation and logistical resource. Academic and educational leadership comes from Rhodes University, and the MSL is best viewed as one piece in a larger puzzle of an effective science intervention in local schools. To further enhance the programme, Rhodes University's Faculty of Science has integrated the Mobile Science Lab as a service-learning component of its third-year curriculum.

#### Supporting Rhodes Support Staff to Support their Children

Few children of the support staff at Rhodes University gain access to and graduate from Rhodes University.

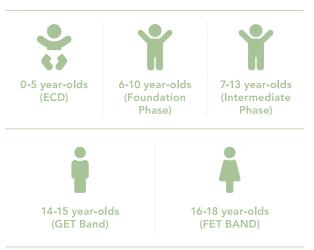
This relates to the contextual problem that their children attend dysfunctional schools. Because Rhodes University is committed to revitalising public education in Makhanda, it is appropriate for it to place particular emphasis on the children of its employees. Rhodes University is an institution of higher learning and, therefore, should take a specific interest in the educational development and advancement of the children of its employees.

The project recognises that children go through sequential phases in relation to educational development and academic challenges. Specifically, it suggests there are five distinct stages, as follows: 0-5 year-olds (ECD), 6-10 year-olds (Foundation Phase), 7-13 year-olds (Intermediate Phase), 14-15 year-olds (GET Band), and 16-18 year-olds (FET Band). Therefore, particular interventions have been designed for each of these stages.

There are some common types of activities that feature during all the stages, such as parent support (workshop series), learner support, and monitoring and evaluation. With regards to the latter, it should be noted that this is an outcomes-driven intervention. The project is intended to empower and equip parents to manage their homes for particular educational outcomes.



#### THE FIVE DISTINCT STAGES:



There are specific outcomes for each development stage. The culmination evaluation document to be produced annually will consider performance in this regard for each of the five stages concerning the targeted outcomes.

At the broadest level, the key output will be the successful delivery of a complex, five-phased project to a high level of professionalism. Specifically, this will entail conducting a series of approximately 20 parent workshops, offering a wide variety of learner support interventions across all age categories, and maintaining a detailed, rigorous monitoring and evaluation system.

#### Short Course on Leadership for Public School Deputy Principals or Heads of Department

There is general recognition that school leadership and management are crucial to educational outcomes. In schools where these are adequate, satisfactory results are produced. In schools where these are lacking, unsatisfactory educational outcomes invariably follow. Although school leadership and management go beyond the person and office of the school principal, there is no doubt that it is the principal who is ultimately responsible for school management and leadership. Perhaps one can go as far as saying that a competent principal is a necessary condition for good school leadership and management. One of the main reasons for this is that the principal is responsible for the teaching corps at any school. If the principal demands accountability and performance from the teachers, then they are much more likely to teach consistently and effectively than if this is not the case. At present, the quality and quantity of teaching in many Makhanda schools are unsatisfactory.

Offered to principals and deputy principals/HoDs of Primary and High Schools in the Makhanda District, the programme was initiated in response to a specific request from high school principals to Dr Mabizela, Rhodes University's Vice-Chancellor. Designed and offered by the Rhodes Business School, the NQF 8 certified leadership course is incredibly helpful in empowering the heads of schools to lead.

#### In Summary

- . The future and sustainability of Rhodes University are intimately bound to the future and sustainability of Makhanda. The University has both a responsibility and a degree of potential influence in the matter of schooling that sets it apart and imposes a special duty of leadership.
- 2. The more accessible Rhodes University is to the young people of Makhanda, the greater the influence it will have and the stronger the bonds of association with the entire community, eroding the dominant schooling culture of exclusion and despair.
- 3. The process of reviving schooling in Makhanda, if set up and developed with students at its heart, will lead – inexorably – to fundamental change. Student energy will be essential to the solution, powering a range of effective interventions and partnerships.

- 4. Schools are complex social organisms. Significant change can only take place in schools ready and willing to embrace it. The approach to reviving Makhanda's schools cannot be a blanket, one-size-fits-all approach. It must be multi-pronged, multi-staged and multipartnered. This insists that resources be directed to where they can make the most difference – into the community at large to create a supportive environment, and into those schools that display organisational and educational readiness. Such readiness is determined by the willingness of school leadership and a critical mass of parents and teachers to support and own it.
- None of this change will happen overnight, but supporting the emergence of centres of excellence, school by school, will be the quickest and most sustainable route.



#### The model is intended to provide a way for many organisations to work effectively together under shared direction in a Rhodes University-led coalition:



Operating at different levels to address different dimensions of the challenge, whether simultaneously or in agreed sequence.



Recognising that different partners have different strengths and interests which can be combined and aligned to achieve a more significant impact.



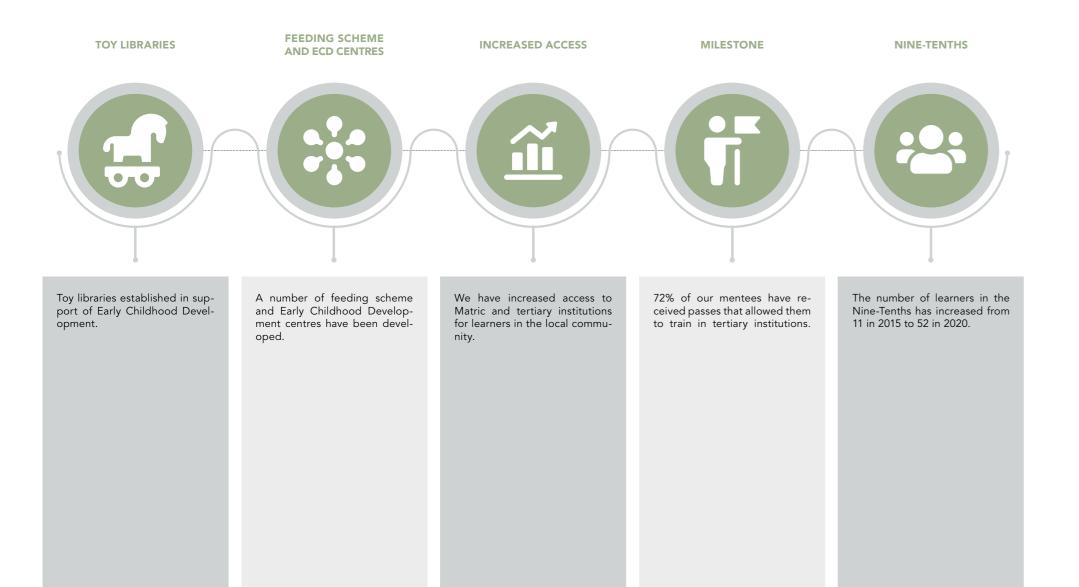
Taking advantage of what is already in place and strengthening it while building new capacity to address other identified priorities.



Progressing at different speeds in different spaces and so not all being held back by resistance or lack of capacity in specific areas or institutions.



### Success Stories







The aim is to try and create an alternative, active lifestyle on the campus. In this regard, there is a clear synergy between high levels of achievement and greater participation in team sports as a whole.

# Rhodes University Sports

Efforts to develop sports at Rhodes University are driven by one clear goal: to enhance the student experience and long-lasting connection to the University through the provision of quality, accessible sport and active recreation opportunities for all students.



#### **PRIORITY PROJECT 7**

# Rhodes University Sports

The aim is to increase participation in regional, varsity-level, and national competition, which should further produce synergies in promoting the popularity of sports among the student cohort.

he impacts of such participation can include: the achievement of sporting excellence; the development of stronger, healthier students; the establishment of a cadre of motivated individuals capable of adopting leadership roles in the country's development; and the forging of links that can help to uplift individuals and communities in the area.

Participation also has a value in and of itself as a process for forging solidarity, teamwork and a sense of belonging – a process that can produce previously unimagined levels of performance, and lead to achievement where none existed before.

The University is keenly aware of the recreational side – the importance of keeping students active and well, particularly in a rural town where there isn't much to do.

The aim is to try and create an alternative, active lifestyle on the campus. In this regard, there is a clear synergy between high levels of achievement and greater participation in team sports as a whole.

The social, recreational and character-building benefits of joining one of the 31 sports clubs on campus – the promise

of achievement, enjoyment, friendships and a well-rounded experience – are emphasised by the University's sports administrators who offer professional support to these groups, although the actual meetings, practice times and fixtures are organised by the students themselves.

We are ranked

among the top

three higher

education

institutions

in offering

organised,

participation in

active

sport.

It is a model for popular student engagement that has produced significant positive impacts, with Rhodes University ranked among the top three higher education institutions in offering organised, active participation in sport among students.

However, a shortfall in facilities and equipment at the University is limiting the potential for the growth of sport as a tool to further realise student potential.

#### **DID YOU KNOW?**



Successful rowing club that won the Boat Race 10 years in a row.



Our clubs are run by students and guided by sports administrators. This is solely to teach them how to manage teams and develop their leadership skills.



- 2019 two (2) Taekwondo students participated and won gold medals at the World Champs in Brazil.
- 2019 Karate students participated at the WUKF World Karate Championships.

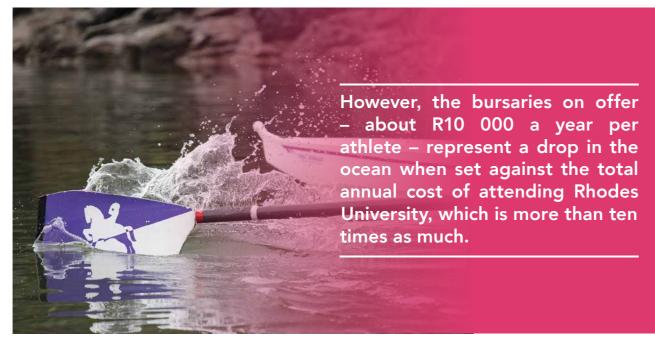


- Rhodes University is the annual host of the National USSA Boat Race Championships.
- 2019 Hosts of the USSA Karate National Championships.
- 2019 Hosts of the USSA Chess National Championships.
- Rhodes University to host the USSA Squash National Championships total student population in 2021.



### Strategic and Operational Priorities

Rhodes University will work in four key areas to establish the structural foundations required for the ongoing development of sport and active recreation at the University. The successful implementation of these four strategic priority areas will be underpinned by several core operational tasks that will be highlighted in our University's annual strategic plan document.





### 1. Player Development Through Research

Plans are currently underway to coordinate more closely with the Human Kinetics and Ergonomics (HKE) Department to enlist its support in improving the performance of the University's athletes. The goal is to establish a high-performance strengthening and conditioning gym for the athletes with the scientific backing from the HKE Department.

The project requires funding for bursaries to attract and support top student-athletes, packages to woo leading professional coaches, and for upgrades and repairs to the sports infrastructure, which are undertaken with little budgetary backing from the University's coffers.

Accordingly, Rhodes University has been tapping thirdstream, private-sector sources to raise funds. It is also hosting more national university tournaments; for example, for karate, chess, pool and squash, as well as national rowing competitions at Settlers Dam. Much of the money from these activities, as well as about R220 000 from the University's annual budget, is tagged for player development; that is, attracting and supporting elite university athletes through bursaries and the provision of specialist coaching. However, the bursaries on offer – about R10 000 a year per athlete – represent a drop in the ocean when set against the total annual cost of attending Rhodes University, which is more than ten times as much.

In addition, the cultivation of elite athletes at the University faces structural challenges.

One of the disadvantages of being in Makhanda is that young people, including the student-athletes, tend to leave for the big cities where there is a lot of potential and money. The problem can affect even the sporting codes in which Rhodes University is the strongest, such as rowing.

### 2. Strengthening High-Performance Codes

Rhodes University's Sports Department has prioritised increasing participation levels and enhancing performance in eight codes. However, the focus on excellent performance in a select number of sports does not diminish the University's commitment to supporting the students' engagement in any of the 31 codes on offer at the University.

The Rhodes Sport High Performance Programme (HPP) has been devised to deliver tangible improvements in coaching calibre and capacity through strategic investment in the above codes. By investing in key elements such as coaching; transport; science (gym, testing, and medical); apparel; and equipment, as well as in community outreach and capacity building, Rhodes University is strategically investing in the growth and development of its premier sporting codes. Aside from the human benefits of increased engagement in regional and national competitions, increased participation in one or more of these codes can also provide muchneeded funding. For example, by joining the Varsity Shield competition, the sports department receives R750 000 to help cover some of the costs of preparing and coaching its rugby team, transport, and the expense of hosting games. The greater the University's representation in pan-university tournaments, the more money it receives. In addition, it can raise money by hosting national events.

Clearly, rugby as a signature sport for the University and the province as a whole is a target of attention, which has been highlighted even further by the rise to fame of Springbok captain and 2019 World Cup winner Siya Kolisi, who is from the Eastern Cape. The approach promoted by Rhodes University to produce winners at the elite level informs the whole ethos of sport at the University: Achievement comes through participation.



### 3. Improvement of Facilities

Funding and other third-stream income that the University raises in this way is crucial to the University's efforts to maintain and build the high-standard facilities required to attract leading student-athletes, host other tournaments and offer its own cohort and local residents the quality sports infrastructure they deserve. Luring top student-athletes is vital in producing winning teams and raising performance levels in, and the popularity of, the target sports codes. In this regard, success breeds success, as is indicated by the University's enduring reputation as a centre of rowing excellence - it has produced several Olympiclevel rowers.

However, the University at present faces an intractable funding dilemma: It cannot attract national-level athletes unless the facilities are up to par. In this regard, significant investment in the facilities is required to realise the University's plan to boost participation, competition, and performance levels, as well as the physical and psycho-social wellbeing of students who engage in sport. A particular priority is to raise funds to install television-standard floodlights and an electronic scoreboard for the main rugby pitch, and build a new rugby clubhouse with upgraded changing rooms.

The benefits of improved sports facilities would extend beyond the University across Makhanda, in line with the University's principled commitment to supporting its home town. The University's Sports Administration Department sees itself as an equal partner with the surrounding community.



ABOVE: Sarah Baartman District Academy for Sport

Rhodes University is strategically investing in the growth and development of its premier sporting codes.



### 4. The Development Programme – **Going Beyond Campus**

The University's plan to promote priority sporting codes will also be beneficial to the greater community of Makhanda and the development of sports in the district (Sarah Baartman District Municipality). For example, the development programme can create robust and local competition for the University's elite athletes, so they won't have to travel far distances.

In 2019, dignitaries and representatives of the Makana Municipality in partnership with the Department of Human Kinetics and Ergonomics (HKE) at Rhodes University, the Eastern Cape Academy of Sport, and the Department of Sport, Recreation, Arts and Culture (DSRAC) assembled in Makhanda for the official opening of the Sarah Baartman District Academy for Sport.

The purpose of the academy is two-fold. Firstly, to promote the development of sporting talent in the Sarah Baartman District through the provision of high-quality facilities, coaching and scientific expertise and, secondly, to encourage participation in physical activity and healthy, life-long participation in sport in the community. This great initiative aims to offer worldclass infrastructure, equipment and expertise to local athletes.

It also nurtures talent and fosters loyalty among local pupils. If these children use the shared facilities made available by the University from primary to high school, their allegiance will always be to the institution that gave them this opportunity.

Leveraging the presence of numerous quality private and public schools in the area, the University's Sports Administrators are looking to sign several deals to share facilities at a reasonable cost and formalise mutually-beneficial arrangements to collaborate on coaching expertise.

The aim is to produce a win-win situation and a reasonable return on investment.

The scheme forms part of a broader strategic plan developed by the University which seeks to balance institutional and local interests and the pursuit of sporting excellence alongside opportunities for popular participation.



#### **OBJECTIVES AND GOALS:**

sporting codes.



Ensuring that athletes from identified sporting codes are coached and supported to achieve their potential, which may enable Rhodes University to be among the top eight universities in the country in these sports.



Forging and implementing a high-performance programme to facilitate the development of the University's top athletes within identified



Establishing well-coordinated inter-residence and internal leagues to contribute to the sociocultural development and wellness of students.



Ensuring the availability of modern, codecompliant facilities and equipment, which would position Rhodes University's athletes to achieve sporting excellence.

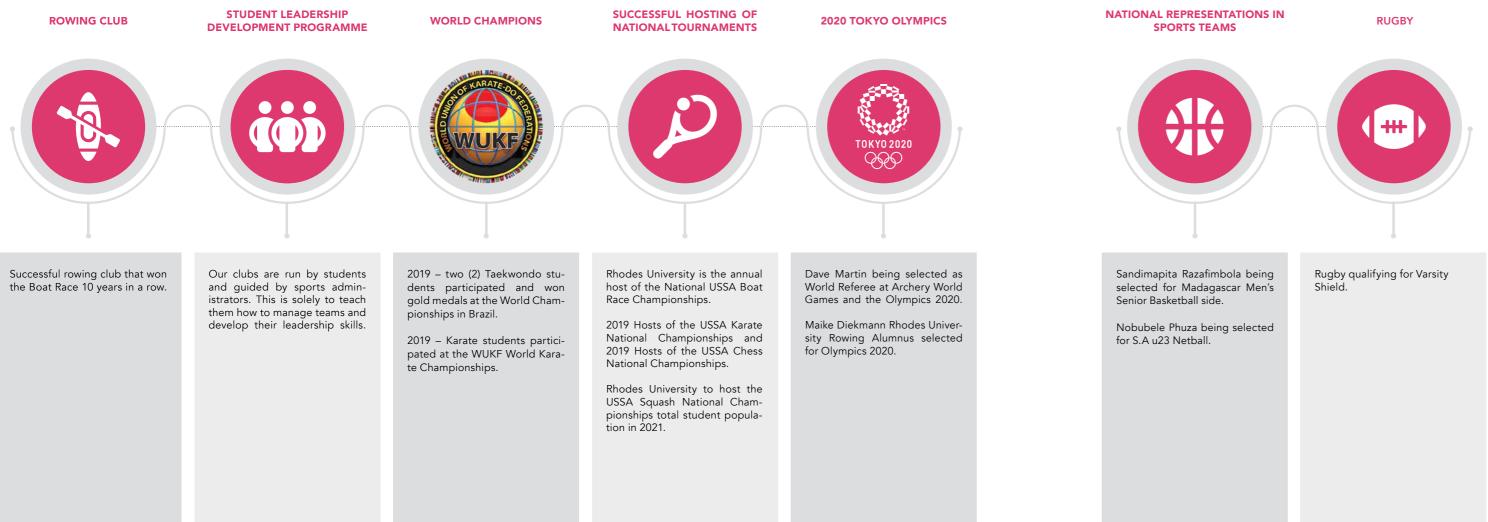


Fostering active and meaningful community engagements which would promote transformation and introduce opportunities for student involvement at the local level.

Developing opportunities for students to become ethical leaders within university sport structures.

"Almost all the sporting facilities are situated within easy walking distance for students on campus - apart from those for rowing, which are located at Settlers Dam about 15km from Makhanda."

### Success **Stories**



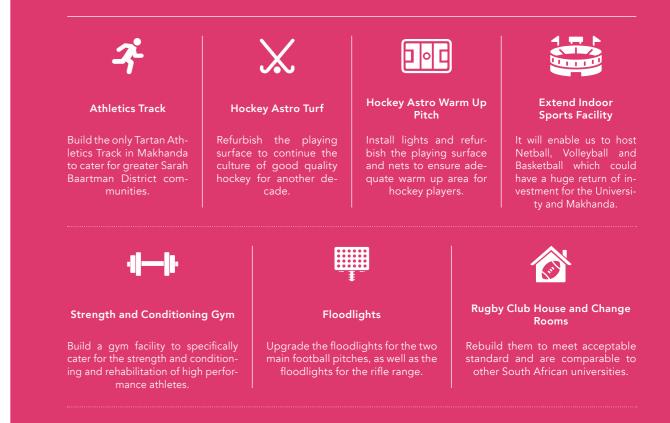
### **Funding Needs Priorities**

More than five years ago, the Rhodes University Sports Council convened the first meeting of the Rhodes Sports Foundation to establish a capital fund of R5 million.

The Foundation is currently seeking strategic partnerships with like-minded corporate organisations who share Rhodes University' commitment to excellence and the creation of opportunities through sport.

It was envisioned that this reserve would facilitate the maintenance, upgrading and building of new sporting infrastructure at Rhodes University, as well as serve as an endowment to a scholarship fund geared at providing financial assistance for outstanding sportspeople to attend Rhodes University. 🗑

#### FUNDS ARE BEING SOUGHT TO ACHIEVE THE FOLLOWING:

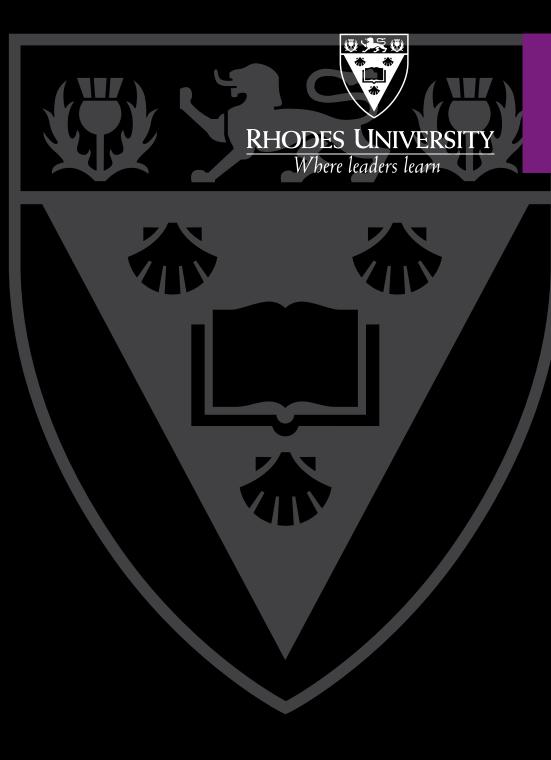


#### **Rhodes University**:

Alumni House, Lucas Avenue, Makhanda, 6139 PO Box 94, Makhanda, 6140, South Africa

**Giving to Rhodes**: **e** development@ru.ac.za **t** +27 (0)46 603 8570

www.ru.ac.za/givingtorhodes





**Design**: Reiner Swanepoel Graphic Design