INSTITUTIONAL REGULATORY CODE

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Policy Framework		Regulations/rules	
Policy		Constitution	
Procedure (Manual)		Local document	
Guidelines		Other: Plan	X

Title: Research Development & Postgraduate Studies Strategic Plan 2021-2015

Category: Governance
Academic
Management

Approval Authority: Council
Senate
Mancom
Executive in charge

Responsible Officer: DVC: Research, Innovation & Engagement

Designated Officer: Senior Director: Research Development & Postgraduate Studies

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Teaching & Learning		Registrar	
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Resources and Operations			

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CENTRAL UNIVERSITY OF TECHNOLOGY, FREE STATE

RESEARCH DEVELOPMENT & POSTGRADUATE STUDIES

STRATEGIC PLAN 2021-2025

18 May 2021 – Submission to Senate

EXECUTIVE SUMMARY

The Research Development & Postgraduate Studies Strategic Plan, 2021-2025 is extending on the already approved Institutional Strategic Plan, 2021-2025. The plan, under the umbrella of the Division of Research, Innovation and Engagement contributes to the university's research and innovation value chain and ecosystem.

The plan is guided by the current notion of the "the future of universities" where relevance of research in contributing towards society and economy is becoming vital. In line with global practice, is the concept of research development understood as (a) increasing the quality and (b) quantity of research outputs informed by publications and masters' and doctoral graduations. The advent of the Fourth Industrial Revolution (4IR) and the recently released Report of the Presidential Commission on 4IR (2020) provide an opportunity to articulate how the university will address the recommendations of this report during the period 2021-2025.

In addition, the plan supports three important objectives namely *productivity* in research by all instruction and research staff (and not measured by outputs only); *capacity development* to deliver on quality and quantity of research outputs; and *increased support* for the Women in Research Programme.

These objectives are translated into seven foundational themes contained in the plan which will support Research Development & Postgraduate Studies during 2021-2025:

> **Strategic objective 1**: *develop a strong research culture based on quality research outputs and recognition.*
>
> **Strategic objective 2:** *develop a strong research culture based on participation by instruction and research staff.*
>
> **Strategic objective 3:** *develop a strong research culture based on competitive research funding.*
>
> **Strategic objective 4:** *develop a strong research culture based on postgraduate studies through research education and supervisory training.*
>
> **Strategic objective 5:** *develop a strong research culture based on research training for instruction and research staff.*
>
> **Strategic objective 6:** *develop a strong research culture based on ethics and integrity, transformation and compliance.*
>
> **Strategic objective 7:** *develop a strong research culture based on Research and Information Management Systems (RIMS).*

The strategic objectives are further supported through institutional support systems and infrastructure, including financial resources.

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DEFINITION OF KEY CONCEPTS AND TERMS

Postgraduate students:	Students enrolled for postgraduate diplomas, honours, master's and doctoral programmes are defined as postgraduate students.
Next generation researcher:	Researchers who have not yet completed a doctoral degree. The focus is on the development of research competencies to enable the researchers to complete their doctorates.
Early career researcher:	Researchers who have not yet established their research careers. These are researchers who have recently completed a doctoral degree and embarking on a research career. The focus is on the development of research competencies to enable the researchers to be productive and participate within a research culture. The development includes achievement of milestones such as preparation and training in competencies required to increase their research publication outputs (such as articles, books), patents, creative productions, presentations and successful research funding or grant proposals.
Mid-career researcher:	Researchers who graduated with their doctorates within the past five years and consolidating their research career. The development includes achievement of milestones such as further preparation and training in competencies required to increase their research publication outputs (such as articles, books), patents, creative productions, presentations, successful research funding or grant proposals and supervision of postgraduate students. The development includes achievement of milestones that will ultimately contribute towards becoming an established career researcher with NRF rating.
Established researcher:	Researchers with sufficient research outputs to apply as associate or full professor for NRF rating or in the process to apply for NRF rating. The following support will be provided through coaching: readiness for rating applications; maintaining and improving ratings; and national and international recognition.

ABBREVIATIONS

4IR	Fourth Industrial Revolution
CUT	Central University of Technology, Free State
DHET	Department of Higher Education and Training
RD & PGS	Research Development and Postgraduate Studies
RIE	Research Innovation and Engagement

NRF	National Research Foundation
RIMS	Research Integrated Management System
PQM	Programme Qualification Mix
SAQA	South African Qualification Authority
UCDP	University Capacity Development Plan
URIC	University Research and Innovation Committee
UoT	University of Technology

SECTION 1: THE CONTEXT

The context of the strategic plan is based on the alignment of the plan to the Institutional Strategic Plan 2021 - 2030. The plan is guided by the current notion of "the future of universities" were relevance of research in contributing towards society and economy is becoming vital. In line with global practice is the concept of research development understood as (a) increasing the quality and (b) quantity of output.

The current pandemic has necessitated new avenues for doing research. Two lead questions being (a) how can multi-, inter-, and transdisciplinary research be strengthened, promoted and enhanced in postgraduate studies; and (b) how can research development make use of and benefit from 4IR and subsequent industrial revolutions?

The plan also takes into consideration the university's internal strengths and weakness and outlines goals which will enable the university to leverage on its strengths and respond to external opportunities to address its developmental needs and grow the research culture.

1. Strategy alignment to university's Strategic Plan 2021- 2025

The university sets itself the new vision to become a *leading university of technology in Africa through innovation.*

The underlying assumptions for research are:

a) growing the profile as a university of technology through knowledge application;
b) engaging regional, national, continental, and international research platforms and institutions; and
c) participating in problem solving and applying citizen science (community-based and community-oriented research).

Within the context of the university's Strategic Plan, 2021- 2025 the emphasis is on:

a) creating new knowledge through discovery and application;
b) building the next generation of researchers through obtaining the doctorate;
c) growing the number of postgraduate students who graduated with master's and doctoral degrees;
d) producing research outputs that are supportive of the university's Vision 2030 statement;
e) providing a platform for innovation, entrepreneurship, and engagement; and

f) all the Fourth Industrial Revolution (4IR) principles would be imbedded into all the strategic objectives.

The research outputs should be imbedded in and reflective of (a) the university's *Strategic Plan 2021 - 2025; Vision 2030* and *Transformation Plan 2021 – 2025;* and *(b)* plans from the *Departments of Higher Education, Science* and *Technology and Research Councils.*

2. The changing research landscape

Within the national research landscape there are five imperatives:

- research outputs in high impact journals;
- postgraduate students meeting the requirements and needs of the labour market;
- collaborative research increasing third-stream income;
- improving on the quality and integrity of the research outputs; and
- research outputs impacting on social communities (end-users of research).

Within the university context, these imperatives are further supported through:

a) growing the research culture relevant to a UoT;
b) growing the competencies of researchers and postgraduate students to produce high level research outputs;
c) growing the third-stream income through research;
d) developing supportive systems such as pre- and post-grant management;
e) research ethics and integrity support and
f) a research integrated management system (RIMS).

In support of research, postgraduate studies and research development, a Research Development and Postgraduate Studies (RD & PGS) Section was introduced in 2016. Nationally such a section will be known as a Research Development and Postgraduate Studies Directorate. The RD & PGS is commonly known as the "Research Office." Within the RD & PGS Section there is a virtual Graduate School (approved early 2000s) to co-ordinate institutional activities in support of postgraduate students and supervisors.

3. The past: Research and Development Strategic Plan 2014 - 2020

The Research Development and Postgraduate Studies Section's strategies were primarily informed by the (a) National Higher Education Development Plan, in particular objective 13 (more research outputs) and objectives 14 (more postgraduate students), the White Paper on Higher Education (with regard to transformation, equity and equality), the mandates of the Council on Higher Education and National Research Foundation, and the institutional vision and mission statement and supportive institutional strategies and operation plans during the period 2014 - 2020.

Within the Research Development Plan 2014 - 2020 the main strategies were:

- increased publication outputs;

- increased postgraduate enrolments and graduations; and
- increased research-informed productivity, grants awarded and peer evaluation.

Although the 2020 research outputs must still be finalised, evidence suggests that most of the targets were reached or within reach in the immediate future.
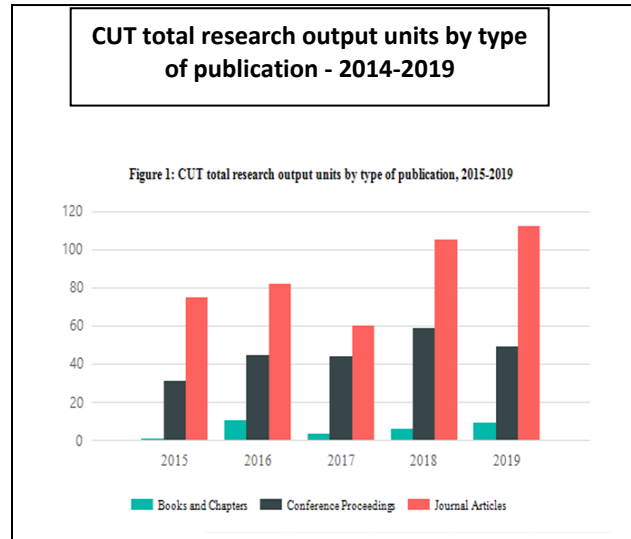
More important are the observations gained from the implementation of the RD Plan (2014-2020) relevant to institutional plans. A brief review of the past accomplishments and challenges will help set the stage for the 2021 – 2025 RD and PGS Strategic Plan.

Publication outputs showed a sustainable growth over time, although the challenge remains that

(a) not all instruction and research staff with doctorates are publishing research results,

(b) participation in research publication outputs are not equal to academic ranks or in departments and faculties, and

(c) integrity matters with regard to predatory publications and gaming of the system.

CUT total research output units by type of publication - 2014-2019

Figure 1: CUT total research output units by type of publication, 2015-2019

Postgraduate enrolment and graduation showed a sustainable growth over time, although the challenge remains that (a) not all instruction and research staff with doctorates are participating in supervision, (b) not all programmes have doctoral students and (c) a high number of part-time masters' and doctoral students.

Completed Postgraduate Studies 2014-2019
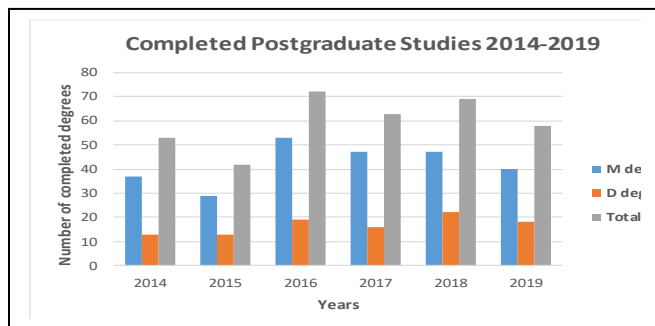
The self-evaluation report (SER) prepared for the Council on Higher Education's national review on doctoral standards pointed out that although the doctoral standards are met, graduate attributes, supervisory capacity and experience, throughput rate, dropouts and studies reflective of institutional mission and vision values in the CESM content for a particular qualification can be improved on. The assumption is that similar challenges are evident in masters' programmes. [Reference: 2020 CUT Self-evaluation Report (SER) to CHE; DHET Report on the Evaluation of Universities' Research Outputs, 2018 and 2020 Annual Research Development and Postgraduate Studies Report.]

Postgraduate information, communications, participation in research development opportunities, external funding opportunities and postgraduate experience opportunities in general are

available and should be further enhanced. For this reason, a "community" for postgraduate students were created on the university's online platform and now needs further development.

While the university is growing its share in (inter-)national criteria for competitive research participation and outputs, such as rating, research grants and postdoctoral fellowships, the CUT is not yet optimising the opportunities available in these and more categories. (Reference: 2020 Annual Research Development and Postgraduate Studies Report, 2019 Annual UCDP Report and 2020 NRF Financial Expenditure Report.)

4. **Preparation for the future: institutional and faculty commitments**

4.1 Institutional commitments

For the period **2021 to 2025, institutional commitments** (Council and Senate) have been made towards (a) postgraduate enrolments, (b) publication outputs, research outputs (combination of publications, master's and doctoral graduates) and (c) instruction and research staff with doctorates (see CUT Enrolment Plan, 2020 - 2025). The commitments are summarised in Tables 1-3.

Table 1: Headcount totals: contact and distance, 2021 - 2025

	Average annual increase: 2013-2017	Proposed target 2020	Proposed target 2021	Proposed target 2022	Proposed target 2023	Proposed target 2024	Proposed target 2025	Average annual increase: 2017-2025
Postgraduate to master's	1,6%	965	1462	2052	2564	2945	3225	23,3%
Master's	14,3%	405	440	477	508	529	542	4,5%
Doctorates	13,8%	182	203	224	245	260	283	7,7%
Total: postgraduates	6,6%	1552	2105	2753	3316	3734	4051	17,2%

Table 2: Highest formal qualification of permanently appointed instruction and research staff, 2021-2025

	Average annual increase: 2013-2017	Proposed target 2020	Proposed target 2021	Proposed target 2022	Proposed target 2023	Proposed target 2024	Proposed target 2025	Average annual increase: 2017-2025
Doctoral	6,5%	114	120	125	130	136	141	2,8%
Master's	6,0%	160	159	162	165	169	173	2,2%
Other	-14,5%	46	45	44	43	42	41	-1,7%
Total	1,2%	320	324	331	338	347	355	1,9%

Table 3: Research outputs, 2021 - 2025

	Average annual increase: 2013-2017	Proposed target 2020	Proposed target 2021	Proposed target 2022	Proposed target 2023	Proposed target 2024	Proposed target 2025	Average annual increase: 2017-2025
Publication units	15,7%	194	199	205	212	220	227	8,0%
Research master's graduates	7,1%	134	138	154	164	173	177	17,7%
Doctoral graduates	13,6%	56	58	68	78	82	87	20,2%
Weighted total	**13,1%**	**496**	**511**	**563**	**610**	**639**	**665**	**14,2%**

Note: The targets in Table 3 are expressed as approved research credit units.

4.2 Faculty specific commitments

Research productivity versus research outputs in general and research outputs within academic ranks per annum and per research cycle, need attention. A URIC-approved guideline (2018) proposed the minimum output per instruction and research staff. This minimum is:

- instruction and research staff with a doctorate as highest qualification: 1 credit unit per annum;
- instruction and research staff with a master's as highest qualification: 0.25 credit unit per annum; and
- instruction and research staff with postgraduate qualification as highest qualification: completing the master's qualification.

The follow-up arguments are that (a) the baseline credit output should be differentiated within academic rank, (b) the workload model should apply to identify research outputs (for example, full-time researchers should have a different credit unit output), (c) a baseline for master's and doctoral graduates as output should be identified, and (d) especially the credit unit for master's and doctoral graduates should be in a three-year cycle.

National desktop studies suggest that (a) acknowledged outputs such as grants and awards and (b) registered patents, innovation and creative outputs, in line with DHET policies, must be added to the list of acknowledged outputs.

The national desktop study also suggested that productivity cannot be ignored as basis of research outputs. Acknowledged productivity criteria relevant to the university are:

(a) supervision of postgraduate students;
(b) editors / sub-editors of accredited journals and/or books;
(c) external examiners for masters' and doctoral studies; and
(d) public science communication.

A baseline model for research outputs as per Table 1 was accepted in a three-year cycle per instruction and research staff. Faculties can further differentiate between full-time researchers at senior lecturer, associate professor and full professor rank based on the workload model.

The following **publication credit** outputs (journal, published conference proceedings, books and chapters in books as per DHET calculation) can be delivered in a three-year context:

Table 4: Cyclical publication output criteria

Rank	Baseline expressed in credit units	Total research credit unit in three-year cycle
Professor	2	6
Research professor	4	8
Associate professor	1.5	4.5
Associate research professor	3	6
Senior lecturer	1	3
Senior researchers	2	6
Lecturer	0.5	1.5
Junior lecturer	0.25	0.75
Postdoctoral research fellows	Baseline as per policy (Track 1) and agreement with student (Track 2).	Three-year cycle output as per policy (Track 1) and agreement with student (Track 2).

Note: Although creative and innovation outputs per DHET policy can be presented as an output similar to publication outputs, the publication outputs committed centrally to the DHET based on faculty submissions cannot be reduced as a result of the creative and innovation outputs.

For the postgraduate supervision, the required expectation for graduated master's and doctoral students is:

Table 5: Supervision output criteria

Category	Minimum period to graduation	DHET credit unit value
Full-time master's	1 year	1
Part-time master's	2 years	1
Full-time doctoral	2 & 3 years depending on SAQA registration	3
Part-time doctoral	4 & 6 years depending on SAQA registration	3

Note: based on the Enrolment Plan for Postgraduate Students, faculties will enrol and graduate students based on their submissions to the Enrolment Plan (see Tables 1-3 above).

Note: the general assumption is that instruction and research staff should be (a) supervising students depending on the PQM for the faculty. (b) The supervision or non-supervision of students may impact on the expected publication outputs as recorded in Table 4.

Note: faculties will allocate a student to a supervisor based on (a) field of supervisor's speciality, (b) preparedness of student; (c) departmental/faculty workload model.

4.3 Instructional, research staff and postgraduate students

Instruction and research staff

In 2018, the university had 40% of instruction and research staff with a doctorate as highest qualification. Four distinct research capacity categories are identified within the university, namely:

(a) next generation researchers;
(b) early-career or postdoctoral researchers;
(c) mid-career researchers; and
(d) established researchers.

Note: see definition of concepts (p.2) for a more detailed overview of these research capacity categories.

Note: within HEMIS, instruction/research staff member is defined as: someone who spends at least 50% of his/her official time on duty instructing students and/or conducting research.

Postgraduate students

The university currently offers postgraduate – master's qualifications (18 postgraduate diplomas and 2 honours degrees), master's qualifications (19) and doctoral qualifications (15) respectively at NQF levels 8 – 10. There are no professional master's and no professional doctoral qualifications as per PQM 2020.

Postgraduate students are enrolled for honours degrees and postgraduate diplomas, master's and doctoral qualifications.

As per the admission policy 2021, any person enrolled as a CUT student while also holding a position at a place of work in terms of the Labour Relations Act (Act No. 66 of 1995), is considered to be a part-time student, whilst any other student is considered to be a full-time student.

SECTION 2: STRATEGIC THINKING FOR THE FUTURE: RESEARCH DEVELOPMENT & POSTGRADUATE STUDIES PLAN, 2021-2025

The purpose of the research strategic plan is to sketch a road map to advance the university's research mission by providing guidance on: (1) outlining strategic research priorities and goals; (2) strengthening core infrastructure, research facilities and systems, and (3) identifying and assisting with leveraging significant opportunities and unique strengths.

The plan focuses on three major issues:

1) increased productivity;
2) increased support and capacity development initiatives with emphasis on both quality and quantity of research outputs; and
3) transformation imperatives with a focus on increasing participation of females in research.

The following key issues are seen as opportunities for the university to improve on its research:

1) the 4IR and competitive technologies;
2) the new norm - taking advantage of opportunities brought about by COVID-19; and
3) research and innovation value chain and ecosystem.

A. STRATEGIC PLAN FOCUS

Seven foundational themes contained in the plan will support Research Development & Postgraduate Studies during 2021 to 2025:

Strategic objective 1: develop a strong research culture based on quality research outputs and recognition

The university recognises the importance of a research culture based on quality research outputs and recognition. This objective will be achieved through the following goals:

1. increase the research publication credit units;
2. increase research output credit units comprising of publications, master's and doctoral credit units; and
3. increase number of NRF-rated researchers.

Institutional targets expressed in tables 1 to 3 above intend to have **665 research output credit units** and **20 %** of instruction and research staff with doctorates as rated researchers by 2025.

Table 6: Research outputs and recognition

Goal	Current baseline	Annual output target				
		2021	**2022**	**2023**	**2024**	**2025**
1.1 Increase the research publication credit units	171 credit units (2019 approved)	199	205	212	220	227
1.2 Increase research output credit units	293.0457 credit units (2019 approved)	511	563	610	639	665
1.3 Increase number of NRF-rated researchers	18 rated researchers in 2020 = 15.8%	24	25	26	27	28

Note: 293.0457 credit units = 171.0457 publications + 59 master's + 63 doctorates.
Note: Rated researchers in 2020 are instruction and research staff and academic managers.
Note: Rating is cumulative for six years.

Strategic objective 2: develop a strong research culture based on participation by instruction and research staff

2.1 All instruction and research staff participate in recognised research productivity categories by 2025

The initial goal in support of the strategic objective identified the following categories, namely a) studies for discipline-based postgraduate qualifications; b) publications submissions; c) supervision for enrolled students; d) applications for third-stream funding; e) creative outputs defined by DHET policy; and f) innovations defined by DHET policy as research productivity categories in which all instructional and research staff should participate in order to contribute to the research culture.

The ensuing goals in pursuing participation in research are customised according to classification of researcher career paths, redress in women participation and collaborations informed by focused research.

2.2 Support next generation research development

The aim of the programme is to support researchers who have not yet completed a doctoral degree to development research competencies to complete their doctorates.

2.3 Support postdoctoral fellowships

The aim of the programme is to assist with the professional development of recently qualified doctoral graduates preparing them for an academic/research career.

This programme also serves a dual purpose in that the postdoctoral fellows boost the research output of the university. The postdoctoral fellows are awarded grants for either full-time (Track 1) or part-time (Track 2) studies within the research centres.

2.4 Support early-career researcher development

This programme involves the support of researchers who have recently completed a doctoral degree and who are embarking on a research career. The focus is on the development of research competencies to enable the researchers to be productive and participate within a research culture.

2.5 Support mid-career researcher development

The programme involves the support of researchers who graduated with their doctorates within the past five years and who are consolidating their research career. The development includes achievement of milestones such as further preparation and training in competencies required to increase their research publication outputs (such as articles, conference proceedings, books), patents, creative productions, presentations, successful research funding or grant proposals and supervision of postgraduate students. The development includes achievement of milestones that will ultimately develop towards becoming an established career researcher with an NRF rating.

2.6 Support established researcher development

The programme is aimed at supporting associate and full professors to be established researchers. The following support through couching will be provided: readiness for rating applications; maintaining and improving ratings; and national and international recognition.

2.7 Support Women in Research Programme

The programme is aimed at addressing the considerable underrepresentation of women participation in research and seniority in academia. Interventions and support will be provided in categories identified by the university to encourage participation in research mainly in but not limited to a) studies for discipline-based postgraduate qualification; b) publications; c) supervision for enrolled students; d) applications for third-stream funding; e) creative outputs and innovations defined by DHET policy.

2.8 Grow national and international collaboration through research centres

Research collaboration may provide opportunities for researchers to learn how approaches from complementary disciplines can be applied to existing problems, and lead to the development of innovative solutions. This can occur when discussions among colleagues stimulate new ideas.

Table 7: Research participation

Goal	Current baseline	Annual output target				
		2021	2022	2023	2024	2025
2.1 All instruction and research staff participate in recognised research productivity categories by 2025.	▪ Studies 2020 = 82 staff out of 205 (UCDG) studying towards master's or doctoral degree as highest qualification = 40%. ▪ Publications 2019 = 142 participants = 43%. ▪ Funding applications = 33 per 2020 NRF awards = 10%. ▪ Creative outputs = 4 per 2016 DHET submission in 2019 = < 10%	70%	75%	80%	90%	100%
2.2 Support next generation research development	38% of researchers to have doctorates.	37%	37%	38%	39%	40%
2.3 Support postdoctoral fellows	13 postdoctoral fellows in 2020.	14	18	20	22	24

2.4 Support early researcher career development	12% instruction and research staff with doctorates to gain research competencies for promotion to senior lecturer / researcher level.	25%	30%	35%	40%	50%
2.5 Support mid-career researcher development	17% instruction and research staff with doctorates to gain research competencies for promotion to associate professor.	15%	18%	20%	25%	30%
2.6 Support established researcher development	< 10% instruction and research staff with doctorates to gain research competencies for promotion to full professor.	10%	10%	15%	15%	20%
2.7 Support Women in Research Programme	53% female staff members participating in improving their postgraduate qualifications, publications submissions, supervision, funding applications, creative and innovation submissions, and obtaining NRF rating.	70%	75%	80%	90%	100%
2.8 Grow national and international collaboration through research centres	Each research centre to have 20% of their research outputs through *national* collaboration.	102	112	122	126	136
	Each research centre to have 10% of their research outputs through *international* collaboration.	51	56	61	63	66

Strategic objective 3: develop a strong research culture based on competitive research funding

Research funding internally available to the university needs to be supplemented by external funding to impact on the research agenda and meet the strategic objectives of the university. Funding is viewed as one of the main determinants of academic activities. Also, at an individual level, securing funding is one of the most important factors enabling a researcher to carry out research activities.

Table 8: competitive research funding

Goal	Current baseline	Annual output target				
		2021	**2022**	**2023**	**2024**	**2025**
3.1 Increase competitive (third stream-) research applications by 50% of instruction and research staff with doctorates	<25% of instruction and research staff participated in competitive research applications.	**25**	**25**	**30**	**40**	**50**

Strategic objective 4: develop a strong research culture based on postgraduate studies through research education and supervisory training

Table 9: Postgraduate studies

Goal	Current baseline	Annual output target				
		2021	**2022**	**2023**	**2024**	**2025**
4.1 Support postgraduate to master's students to enrol for master's studies through research education programmes	558 master's students	440	447	508	529	542
4.2 Master's and doctoral students to master senior graduate attributes through supervision and research education	672 students (469 master's and 203 doctoral)	643	701	753	789	825
4.3 Supervisory training through targeted interventions	20 supervisors graduated students in 2019	50%	60%	75%	90%	100%

Note: target of 542 master's students by 2025 already approved by university.
Note: target of 825 master's and doctoral students by 2025 already approved by university.

Strategic objective 5: develop a strong research culture based on research training for instruction and research staff

5.1 Training interventions to grow research competencies

The benefits and value of systematic and targeted training and development programmes are enhancing those competencies researchers will need to effectively grow their research. The training programme can include intervention in support of research outputs such as (a) supervision, (b) publication writing, (c) funding applications and (d) ethical approved applications.

Table 10: Research training

Goal	Current baseline	Annual output target				
		2021	**2022**	**2023**	**2024**	**2025**
5.1 Support instruction and research staff to grow research competencies	50% of all researchers trained in different competencies.	60%	70%	80%	90%	100%

Strategic objective 6: develop a strong research culture based on ethics and integrity, transformation and compliance

6.1 Research ethics and integrity system

The university has committed itself to the development of a fully functional ethics and integrity system in line with its core values, ethical codes and best practices that exist around the world. The aim is to ensure and portray both an institution and individual's credibility and integrity.

The development of the system is supported through the goal as indicated in the Table below.

Table 11: Research ethics and integrity

Goal	Current baseline	Annual output target				
		2021	**2022**	**2023**	**2024**	**2025**
6.1 Develop an own approved accreditation Research Ethics and Integrity Committee and participation in accredited clinical and animal ethics committees	All clinical and animal research	All clinical and animal research	All clinical and animal research	All research	All research	All research

6.2 Contribution to institutional transformation agenda

The Research Strategic Plan 2021 – 2025 is aligned and contributes to the university's transformation agenda. In the university Transformation Plan 2021-2025, the following commitments were made:

Table 10: Transformation Plan (already submitted by faculties).

Goal	Current baseline	Annual output target				
		2021	2022	2023	2024	2025
6.2.1To promote knowledge creation and transformation through transformation and diversity-themed research	5 % presence of transformation and diversity-themed research in research centres.	**10%**	**15%**	**20%**	**20%**	**25%**
6.2.2 To promote knowledge creation and transformations	20% diversification of knowledge in research centres with emphasis on participation, productivity and Africanisation.	**25%**	**30%**	**35%**	**40%**	**50%**
6.2.3 Ensuring and promoting diversity and inclusivity through targeted recruitment	Four (4) targeted recruitment initiatives (1 per faculty) of students by faculties within a broad understanding of diversities and increased degree of completion.	**4**	**4**	**4**	**4**	**4**
6.2.4 Ensuring and promoting diversity and inclusivity	Five (5) instruction and research staff development initiatives on best practices in recruiting and graduating diverse student population (Research Office seminar on topic + one initiative each per faculty per year)	**5**	**5**	**5**	**5**	**5**

Strategic objective 7: develop a strong research culture based on Research and Information Management Systems (RIMS)

6.1 Development of an Integrated RIMS

The RIMS is vital in improving the efficiency and effectiveness of research and research administration within the university. The systems give an overall picture of the research and scholarly enterprise of an institution, and they offer faculties with tools for collaborating, publicising their work, complying with policies and creating research performance reports. The aim for the university is that all research information, applications and submissions should be online.

These will be achieved through the development of an integrated RIMS.

Table 11: Research and Information Management Systems

Goal	Current baseline	Annual output target				
		2021	2022	2023	2024	2025
6.1 Development of an integrated RIMS	100% of 2019 submission to DHET via ROSS online system. 100% 2020 NRF funding applications.	100%	100%	100%	100%	100%

B. INSTITUTIONAL SUPPORT SYSTEMS AND STRUCTURES

1. Implementation of Strategic Plan 2021 - 2025

- The Strategic Plan 2021 -2025 will be translated into annual performance plans (2021 – 2023) which are three-year plans that are reviewed annually.

- The Annual Performance Plan for Research will be incorporated into the APP: Research, Innovation and Engagement – research, innovation and commercialisation, community engagement performance. These reports will serve in relevant Senate committees.

2. Governance and compliance committees

- The university's institutional governance, strategic planning, management and monitoring and evaluation are guided by the Framework on Planning and Monitoring, including reporting of Higher Education institutions.

- Research matters are mandated by Senate within the following institutional committees:

- University Research and Innovation Committee and its subcommittees:

o   Research Ethics and Integrity Committee
o   Research Grants and Scholarship Committee
o   Faculty research and innovation committees

3. Research Development and Postgraduate Studies

The RD & PGS Section, commonly known as the "Research Office" has six core functions in the research, innovation and engagement portfolio in support of the academic project. These six functions are:

- the general administration of projects concerning the development of research and postgraduate studies;
- the management of pre- and post-grant awards, administration, monitoring and evaluation of internal and external postgraduate student and staff grants and scholarships;
- the development of research skills and graduate attributes through workshops and mentorship programmes;
- the monitoring, evaluation and analysis of research development and postgraduate studies performance at the university;
- the promotion of research ethics and integrity in scholarly work;
- the coordination of research activities through Research Information & Management Systems (RIMS).

4. Postgraduate Studies support by Graduate School

The existing Graduate School will continue to be used as an institutional platform to co-ordinate activities in support of postgraduate students. However, due to the importance of postgraduate studies development, the Graduate School will be developed into a more structured entity to facilitate, develop, and support postgraduate studies. The focus will be on:

(a) co-ordinating central planning, evaluation, and assessment of postgraduate studies development;

(b) growing quality and quantity of postgraduate studies and students;

(c) co-ordinating research development for postgraduate studies; and

(d) initiating relevant policy development.

A Writing Centre within the Graduate School will be used as institutional platform to support (a) critical reading and academic writing for masters' and doctoral students and (b) scientific writing for instruction and research staff.

The structural development of the Graduate School will bring the university's development of postgraduate studies in line with international practice with an integrated/holistic approach to postgraduate studies. In most cases a Graduate School has a core function (focus on postgraduate studies development) and subsidiary/support functions relevant to postgraduate studies support.

In the context of the university, the Graduate School can co-ordinate postgraduate study support delivered by faculties and support sections as illustrated in the next figure.
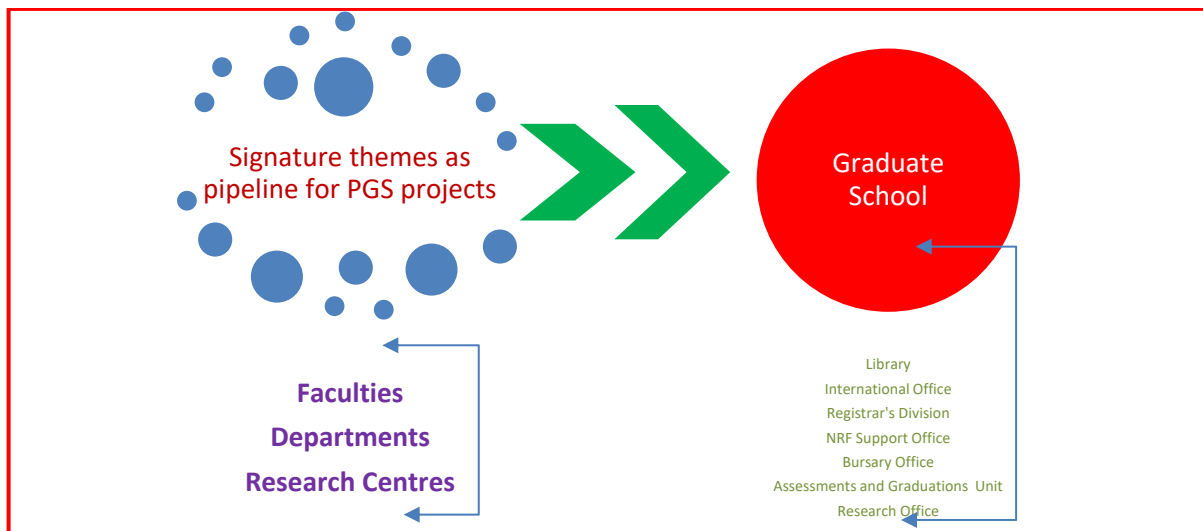

Figure 1: Interaction between faculties, academic sections and Graduate School

5. Policies and procedures

The (a) institutional and (b) divisional policies and procedures will have to be updated to reflect (i) a quality, (ii) developmental and (iii) transformation approach and will be managed and revised within the Institutional Regulatory Framework.

6. Financial support

The university on an annual basis makes available funding in support of the strategic objectives contained in the plan. The financial support is linked to the institutional research development grant and annual scholarship allocations to postgraduate students. The funding is also supplemented with external research grants from funding agencies.

7. Research centres

The university through its Research and Development Plan undertakes a capacity development approach to meet its desired research and innovation outputs. Research activities should be organised in research structures to meet the stated research objectives. Strategic research clusters and signature themes are enablers for building a research and innovation culture.

The identification of a signature theme is based on the critical mass in a particular field of research, research outputs, completed qualifications and funding awarded. Research centres are acknowledged as the research structure that will organise and manage a part of or the full scope of a signature theme.

In 2018, Senate approved six business plans towards the establishment of the research centres. These research centres are:

- Centre for Applied Food Security and Biotechnology (CAFSaB)
- Centre for Diversity in Higher Education Research
- Centre for Enterprise Studies
- Centre for Rapid Prototyping and Manufacturing (CRPM)
- Centre for Sustainable Smart Cities
- Centre on Quality of Health and Living

C. CONCLUSION

The Research Development and Strategic Research Plan 2021-2025 has as aim the strategic development of a research culture through seven identified strategies in support of the university's research vision and mission.

A strengthened research culture will contribute towards developing the university as a UoT and contributing to the intellectual and socio-economic development of the country.

As the university is part of a global research community, it will contribute to this community through its quality research outputs.