



RESEARCH CONTRACTS
& INNOVATION

The Patent System – enhancing innovation, technology transfer and industrial development; a South African perspective

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RESEARCH CONTRACTS & INNOVATION



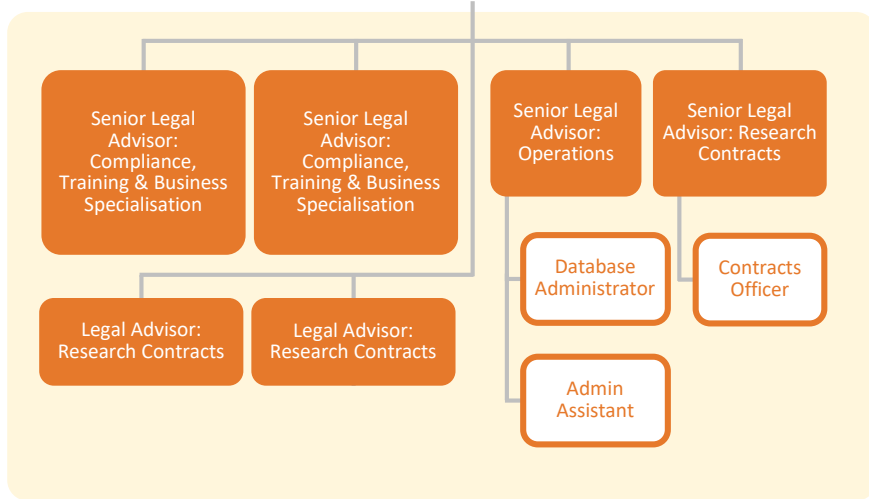


Deputy Vice-Chancellor
Research & Internationalisation

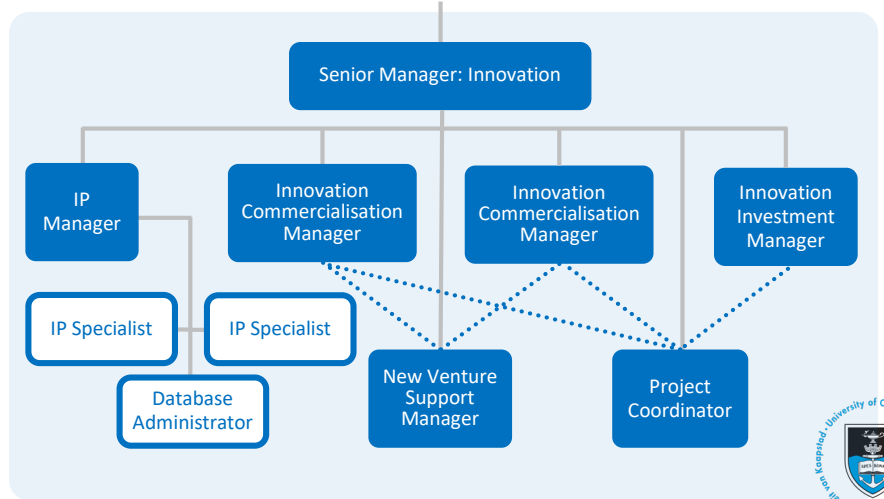
DIRECTOR
Research Contracts & Innovation



RESEARCH CONTRACTS TEAM

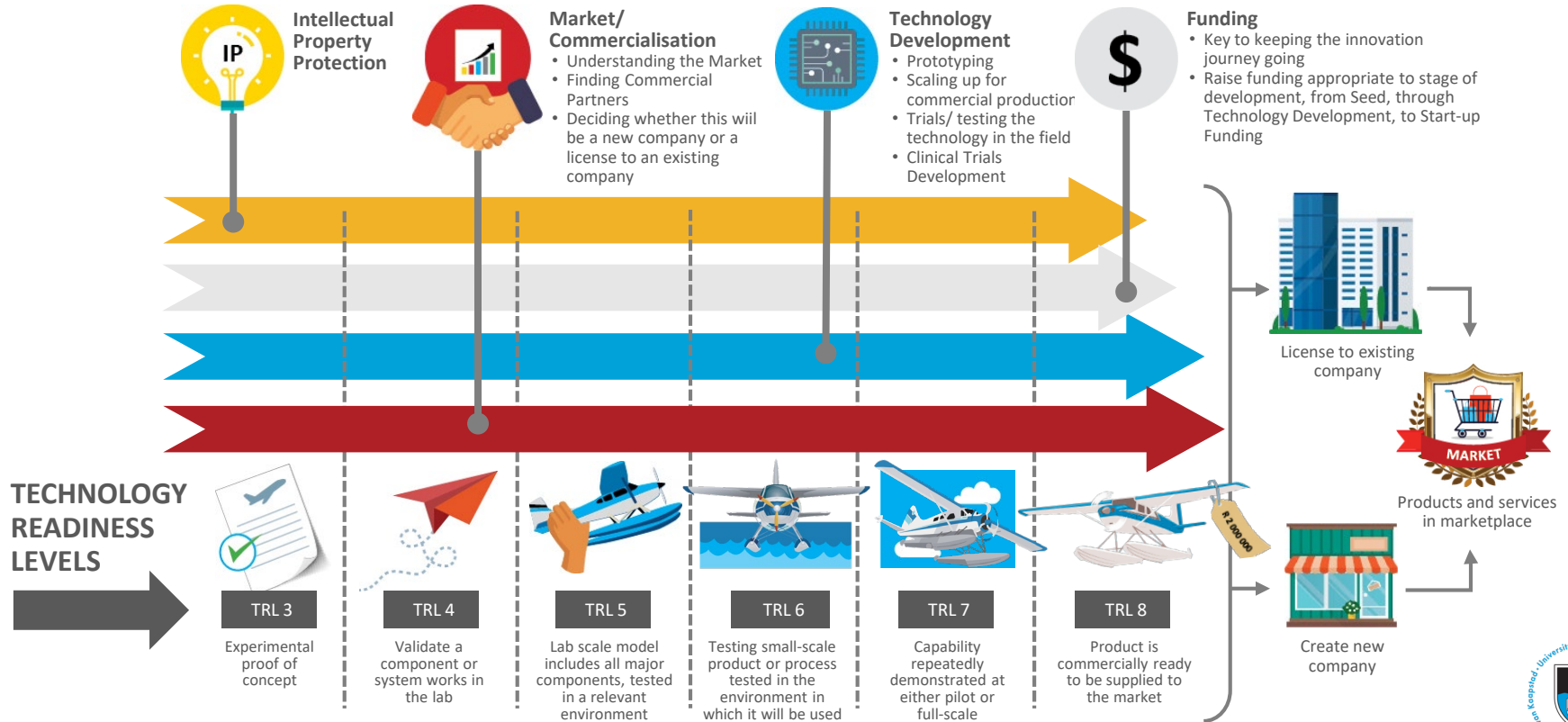


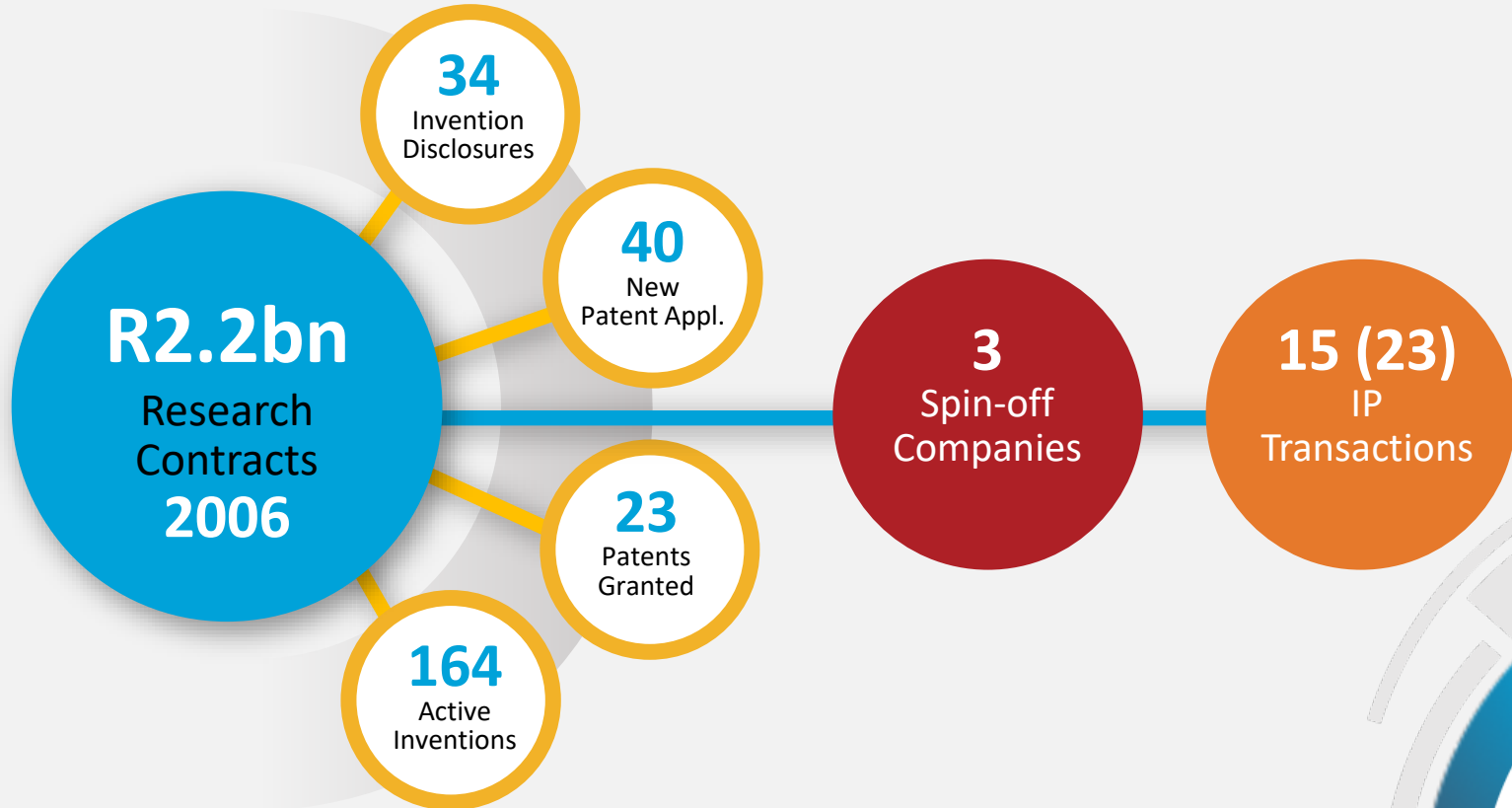
INNOVATION TEAM





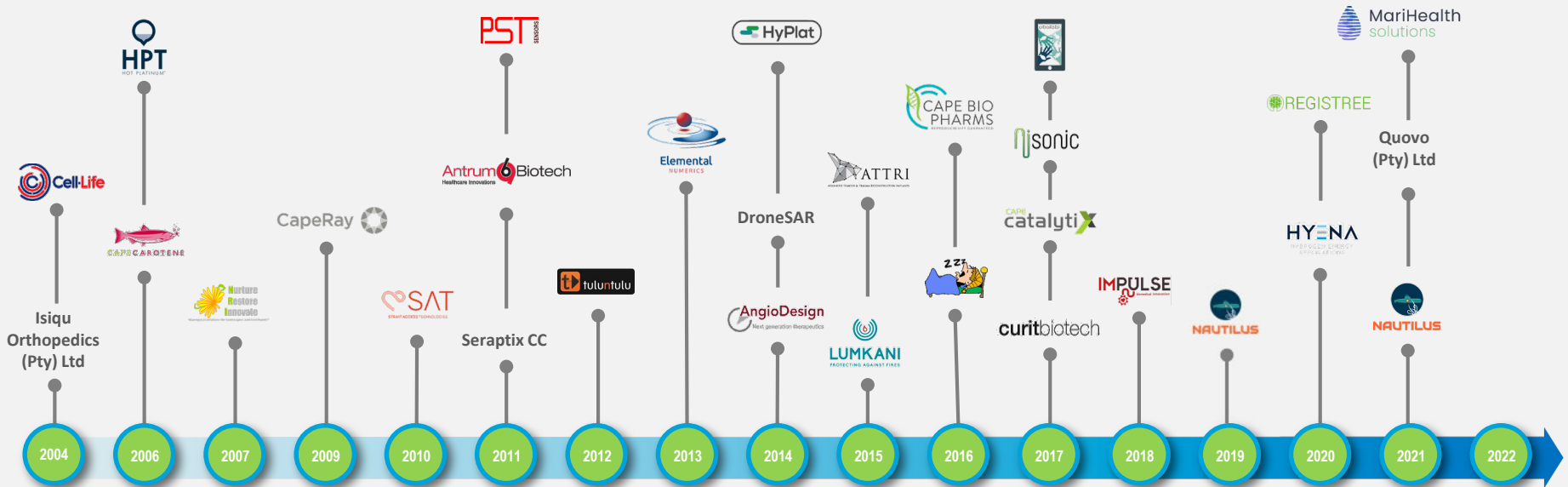
Innovation Management Journey





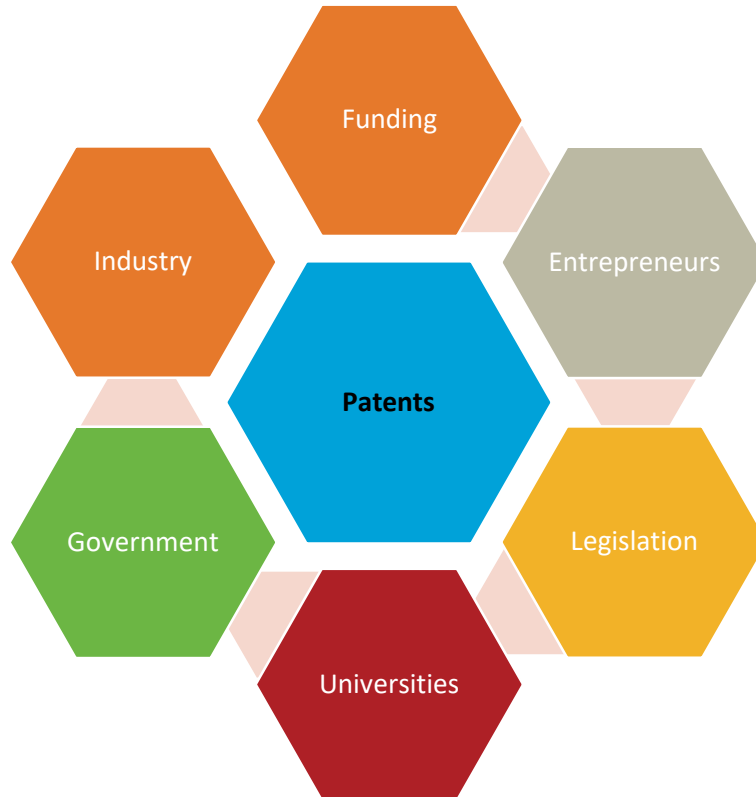


Spin-off company timeline





Patenting – part of a national system of innovation





Substantive Search & Examination

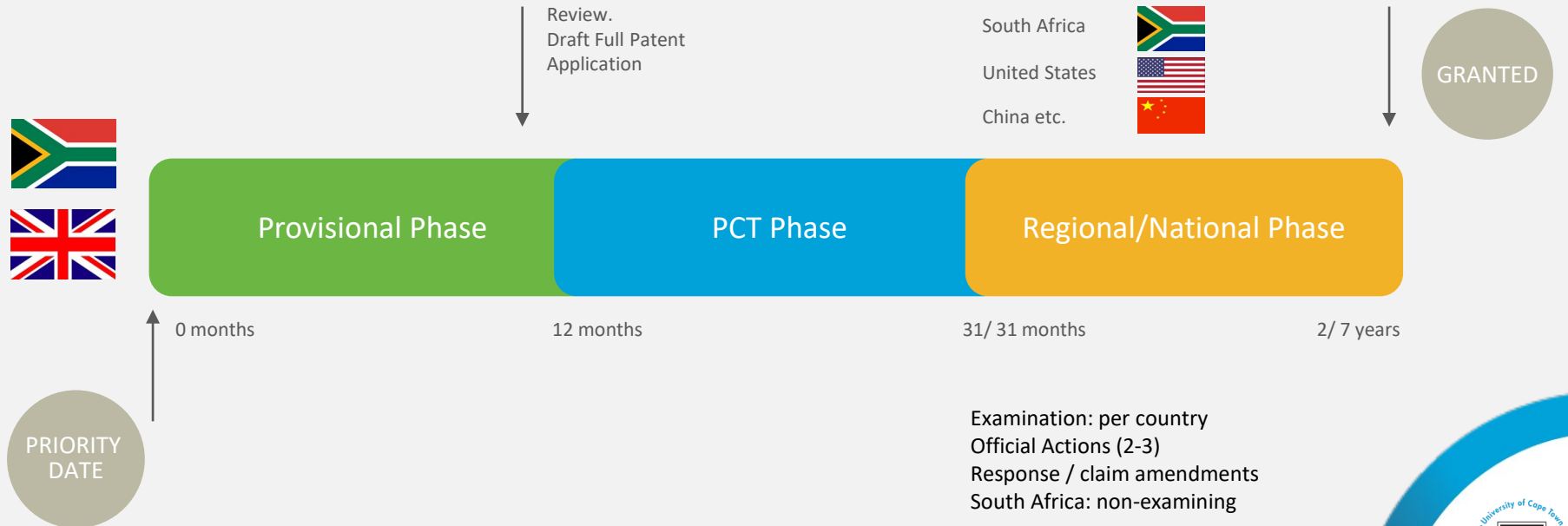


- SA IP Policy recommends key reforms, notably introduction of substantive search and examination (SSE) for South African patent applications.
- Companies and Intellectual Property Commission (CIPC) began recruiting patent examiners in 2016
- Trained by European Patent Office
- Experiential learning component, which is a practical, non-binding, voluntary and informal trial period on SSE
- SSE can only be implemented once the current South African Patents Act and its regulations are amended to allow for the legislative framework to introduce SSE – still a lengthy process!



Patent Process Timelines

Three phases with fixed deadlines: based on Paris Convention and Patent Cooperation Treaty (PCT)





SA Patent Filing



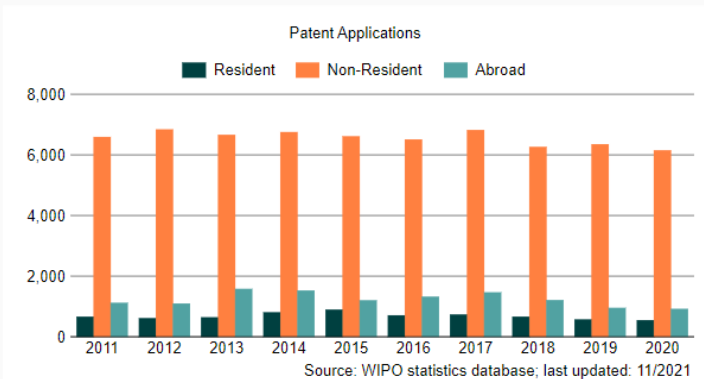
Population: 60m

GDP: \$419bn

2nd largest economy after Nigeria

Patent Applications

Year	Resident	Non-Resident	Abroad
2011	656	6,589	1,114
2012	608	6,836	1,091
2013	638	6,657	1,577
2014	802	6,750	1,520
2015	889	6,608	1,197
2016	704	6,506	1,316
2017	728	6,816	1,461
2018	657	6,258	1,204
2019	567	6,347	950
2020	542	6,146	915

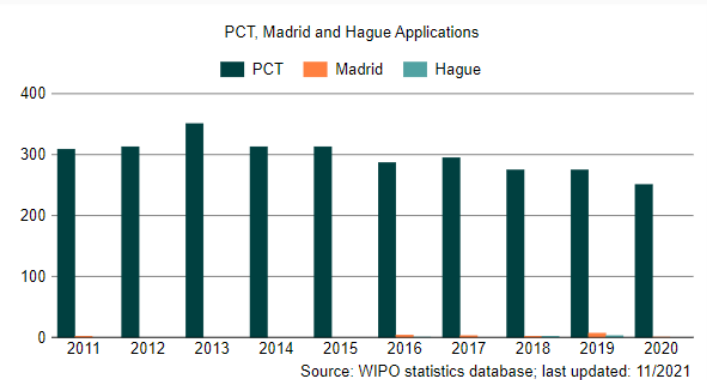




PCT Applications

Applications via WIPO Administered Treaties

Year	PCT System	Madrid System	Hague System
2011	309	2	
2012	313		
2013	351		
2014	313		
2015	313		
2016	287	4	1
2017	295	3	2
2018	275	2	3
2019	275	7	
2020	241	1	





Top 10 PCT Applicants

PCT Top Applicants

Applicant	2018	2019	2020
DETNET SOUTH AFRICA (PTY) LTD	6	1	11
● UNIVERSITY OF PRETORIA	4	5	9
EPIROC HOLDINGS SOUTH AFRICA (PTY) LTD		2	8
● UNIVERSITY OF JOHANNESBURG	1	3	8
● UNIVERSITY OF CAPE TOWN	11	18	7
● CSIR	8	9	6
● STELLENBOSCH UNIVERSITY	2	17	6
● UNIVERSITY OF THE WITWATERSRAND	4	4	6
● UNIVERSITY OF SOUTH AFRICA	4		4
FREDDY HIRSCH GROUP (PROPRIETARY) LIMITED	1		3



IP Rights from Publicly Financed Research & Development Act

- Promulgated August 2010
- Established the National IP Management Office
 - Each university must have a TTO
 - Financial support for capacity development
 - Reporting, surveys
 - 50% rebate for patent application
 - Monitoring commercialisation

Full Cost includes:

- Direct costs (labour & materials)
- Overheads (confirmed % approved biennially by NIPMO)
- Also includes a labour cost for researchers whose salaries are fully covered by the university



Ownership of IP

	Full Cost	Ownership	
A	<	UCT	<ul style="list-style-type: none">• The default position in terms of the Act is for UCT to own the IP.• The IP may be made accessible to the funder by licensing, which may be exclusive.• Can motivate and seek approval from NIPMO for assignment to funder at end of project.• Whilst IP may not be jointly owned, benefit from commercialisation may be shared• If paid > 70%, royalty-free license permitted
B	<	Joint	<p>Four conditions need to ALL be met:</p> <ol style="list-style-type: none">1. Contribution of resources [money, background IP, people]2. Agreement to commercialise the IP3. Benefit share with IP creators (provided for in UCT IP Policy)4. Joint creation of the IP. If patented, at least one person from funder's team must be named as an inventor.
C	= or >	Funder	<ul style="list-style-type: none">• When the funder pays full cost or above, they may own the IP• It is a negotiation and UCT may charge a margin above full cost, to reward the researcher's expertise



Entity / License	NIPMO Approval	SA Reserve Bank Approval
Local exclusive / non-excl. license	x	x
Local assignment of IP	✓	x
Foreign non-exclusive license	x	✓
Foreign exclusive license	✓	✓
Foreign assignment of IP	✓	✓



Spin-off Companies

- IP is key to attracting investment in a spin-off company
- Emerging as main mode of university technology transfer
- Challenges
 - Funding
 - Resourcing (business savvy entrepreneurs)
 - VC environment is good for ICT, but not for “deep” tech



- Challenges
 - Struggling to capitalise on foreign filings
 - Market proximity
 - Lack of 'absorptive capacity' in local industry



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Funding Environment





Venture Capital

Total venture capital investment in regions

	2021 (\$ billions)	2020(\$ billions)	Change (%)
US	329	166	98
Asia	165	110	49
Europe	116	45	157
Latin America	15	4	212
Africa	5	1.4	263

Quartz | qz.com | Data: Partech, Pitchbook, Crunchbase, Bloomberg/LAVCA



Venture Capital

“South Africa attracted the bulk of VC deals from 2014 to 2019, representing 21% of the total number of early-stage investments. Kenya (18%) had the second-highest share of early-stage deal volume followed by Nigeria (14%)”

“**South Africa** remains a hub for **VC activity** in Africa, accounting for 21% of deals by volume. However, Egypt is increasingly gaining popularity among investors, attracting the second highest (16%) share of country-specific deals in Africa in 2020, perhaps owing to the Egyptian government’s prioritisation of policies that encourage innovation and empower entrepreneurs.”

“90% of all reported **VC deals** were in **technology-enabled** companies”

[Venture capital investments in Africa soared in 2020 \(africanreview.com\)](https://africanreview.com)

[Venture Capital in Africa: Value of VC deals in Africa reached US\\$1.4bn in 2019; the highest on record \(nairobiagarage.com\)](https://nairobiagarage.com)





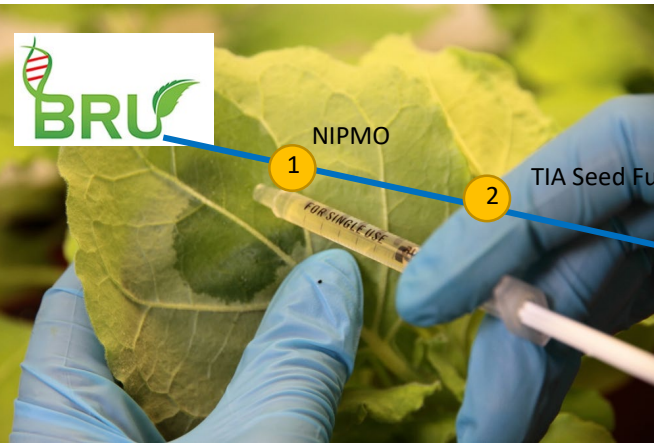
- Established in 2020
- Initial government/corporate SA raise established fund of funds
- Universities of Cape Town and Stellenbosch, Special Partners
- Provides seed investment, prior to series investment
- Bridges the gap between universities and conventional SA VC



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Spin-off companies





NIPMO

1

TIA Seed Fund

2

TIA Seed Fund

3



BIOPHARMING
RESEARCH UNIT

4

Evergreen Fund

DTIC THRIP

5



Evergreen Fund

6

6

UTF



FIND

7

EIB

8

CAPE BIOLOGIX

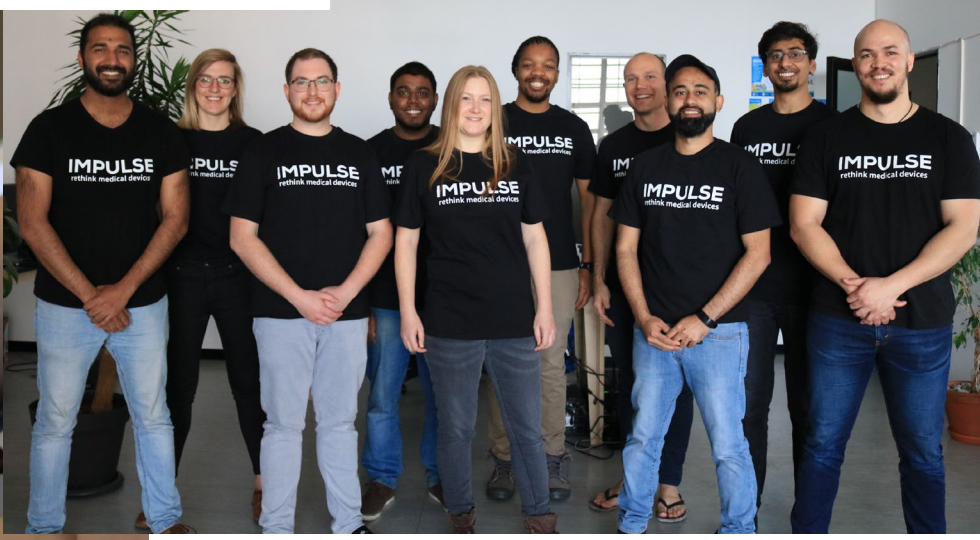
RECOMBINANT PROTEINS | MADE IN PLANTS

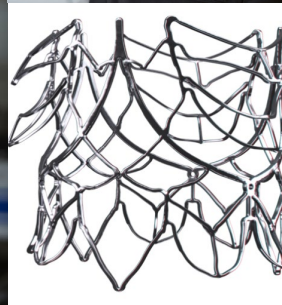
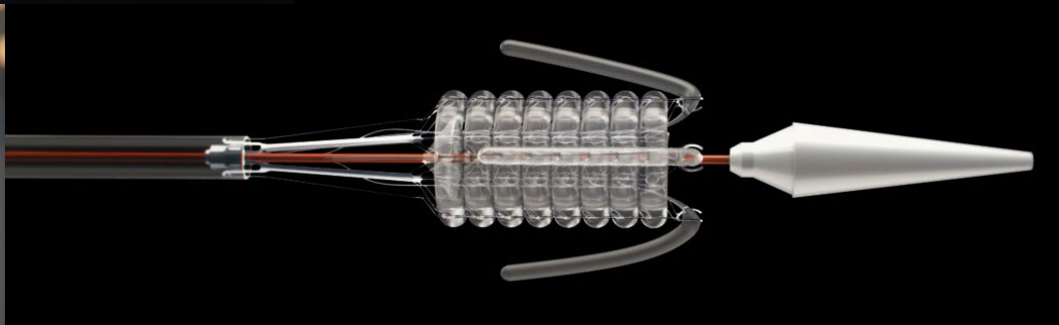
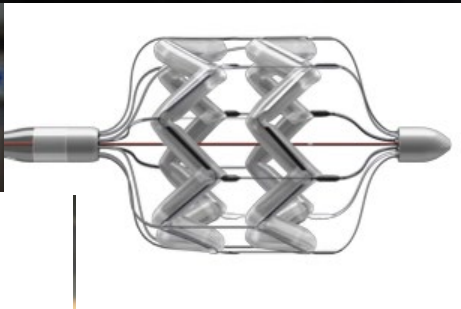




Tamlyn Shaw - Technical Director









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