INNOVATION AT UCT 2020

inflection point

Research Contracts & Innovation

The launch of a university spin-out company involves syzygy, or alignment, between the university researchers, the investors, and the manager. The interests, objectives and motivations of these three groups need to be aligned. They will not be the same, and there needs to be enough overlap and mutual trust to work together to build the business. The founders, investors, and manager do not need to be friends, but each needs to respect the others and the important role they will play in the business. The TT manager can help, by reinforcing where those involved do have common interests.

Tom Hockaday, - University Technology Transfer: What it is and how to do It.
Published by John Hopkins University Press, 2020.

INTRODUCTION

RESEARCH CONTRACTS & INNOVATION

Our theme this year is “inflection point” - the point of a curve at which a change in the direction of curvature occurs. A decisive moment that changes the course of history and marks the start of significant change. Considering the unprecedented happenings of 2020 so far, it’s safe to say that the COVID-19 pandemic has certainly been the catalyst for major directional changes in all spheres of society.

Before this virus emerged, however, the University of Cape Town’s (UCT) Research Contracts & Innovation (RC&I) team already recognised that we were on the cusp of a new direction of our own.

At RC&I, our inflection point has been driven by the near doubling of our Innovation Team during 2020, through the support of Department of Science and Innovation’s (DSI) National Intellectual Property Management Office (NIPMO), and significant enabling changes in our funding environment. Following the establishment of UCT’s Evergreen Fund, which invests in UCT spin-off entities, an Innovation Builder Fund was established to mature research outputs and in addition UCT participated as a special limited partner in the launch of the SA SME Fund’s University Technology Fund which came into being in January 2020.

In many ways, this has felt a bit like syzygy, an astrological term used to describe the alignment of two or more heavenly bodies. In terms of research and innovation, however, the concept has been popularised by Tom Hockaday, former head of Oxford University Innovation, to describe the process of launching a spin-off company, where one needs the alignment - or sufficient overlap - of the founders’, investors’ and the university’s interests, objectives and motivations.

We are excited by the new era that our technology transfer function is moving into and the increased support that we can offer UCT researchers to translate their outputs into tangible innovation impact.

We are grateful to the NIPMO for in excess of R10m in funding provided to RC&I to support our growth over the next three years.

The DVC’s Award for Achievement in Innovation was awarded to Ashley Francis, Executive Director Finance, for his efforts towards establishing an investment pipeline for UCT’s innovations. He was instrumental in the creation of the Evergreen Fund, played an important role in the establishment of the Innovation Builder Fund and also provided valuable support and insight into UCT’s participation in the Universty Technology Fund initiative.

I hope that you enjoy reading more about all of these topics in this booklet.

Piet Barnard

UCT'S COVID-19 RESPONSE

Before you get stuck in, let us briefly circle back to the global inflection point that we, as a collective, are in the midst of navigating. At RC&I, we're particularly proud of UCT's rapid and significant response to the COVID-19 pandemic. Some innovation highlights shared by UCT News include:

UCT spin-off company, HyPlat, has as part of the government's response to COVID-19, produced the Membrane Electrode Assemblies (MEAs) used in hydrogen fuel cell systems which are being used as the primary power source for the field hospital established at 1 Military Hospital in Pretoria. The project is a public-private partnership between the Department of Science and Innovation (DSI), the Department of Public Works and Infrastructure (DPWI), the Department of Defence (DoD); local companies, Bambili Energy and HyPlat; as well as international companies PowerCell Sweden, Horizon Fuel Cell Technologies (Singapore) and Element 1 Corporation (United States). UCT spin-off company, Antrum Biotech, worked on the COVID fight, collaborating with UCT to develop a qRT-PCR test, reducing its cost and the need for difficult to obtain reagents.

Our Medical Devices Laboratory has been hard at work developing a wide range of innovative solutions to support clinicians and patients and assist in curbing the spread of the virus. Associate professor Sudesh Sivarasu, of biomedical engineering and head of the Medical Devices Lab, along with postgraduate students, Edmund

Wessels and Catherine Gordon-Grant, played an integral role in manufacturing a ventilator as part of the National Ventilator Project (NVP) making over 18 000 ventilators that has been approved for nationwide rollout to support patients showing respiratory distress in the early phase of COVID-19 infection. The manufacturing of the device has been outsourced to local companies, and over 34 000 products have been distributed.

Additionally, the UCT ViZAR was among the first of the lab's COVID-19 solutions to have been approved by the South African Health Products Regulatory Authority (SAHPRA). It acts as a first line of defence between the user and any infectious, airborne particles. In addition to offering protection against harmful aerosols, it also prevents users from touching their faces and the possible cross-contamination this can cause. The UCT ViZAR was designed by postgraduate researcher Matthew Trusler, in collaboration with Sivarasu, as well as Dr Stephen Roche of the UCT Division of Orthopaedic Surgery, Professor Salome Maswime and Dr Tracey Adams of the UCT Division of Global Surgery, and RC&I's Saberi Marais.

Outsourcing local companies has helped increase the production turnaround time and offered SMME's something of an economic boost.

Also from the Medical Devices Lab, postgraduate researcher, Lara Timm designed the Hearo, an ear-saving solution that improves the comfort and fit of face masks with ear loops, typically worn by frontline medical staff working long shifts to contain COVID-19. The manufacturing of the device has been outsourced to local companies, which has helped increase the production turnaround time and offered SMME's something of an economic boost.

The Biopharming Research Unit (BRU), under the leadership of Professor Rybicki, received government funding to assist in the production of diagnostic reagents for COVID-19. Among the eight applications for the production of reagents, BRU – a unit within the Department of Molecular and Cell Biology at UCT – was one of only three to have received the funding award. For the production of these reagents, Prof Rybicki employed technology already being used in the BRU laboratory, which involves enclosing a synthetic RNA molecule made in plant cells in a plant virus coat protein. Cape Bio Pharms (Pty) Ltd, a spin-off company built upon BRU's innovations has also received substantial funding from international funders to support the production of COVID-19-related diagnostics for monitoring purposes.

THE RC&I TEAM

THE INNOVATION TEAM

With the coming together of key ingredients for innovation – primarily around the availability of seed funding at different levels, the need to build a robust technology pipeline and to support spin-off company formation – we are fortunate to have the continued commitment from the Department of Science & Innovation's National IP Management Office (NIPMO) in supporting 5 new posts to build the RC&I team's capacity, taking us through the inflection point and onwards up to a higher level.

Piet Barnard (Director), **Dr Andrew Bailey** (Senior Manager: Innovation), **Yandi Sopete** (Personal Assistant)

The Innovation Team works closely together with 11 other staff members within RC&I, who provide additional legal, financial and administrative support.

THE CONTRACTS MANAGERS

The Contracts Managers are lawyers and process around 2 500 research contracts a year that have a value of around R1.5 billion. This requires effective processing, while protecting the university's and researchers' interests and ensuring that contracts comply with university policies, particularly with regards to publication and intellectual property issues. Council has created a "delegation of authority framework" enabling the Contracts Managers to sign-off contracts.

In addition to the research contracts, the team is also involved in a range of agreements relating to IP transactions and share subscription agreements for investments made into UCT spin-off companies alongside the University Technology Fund or via UCT's Evergreen Fund.

The team are also needing to deal with a range of new and emerging responsibilities that are arising from funder compliance, protection of personal information as well as data sharing.

Contract Managers: Julie Nadler-Visser, Nandie Makatesi (Contracts Officer), **Lucinda Rooza, Warda Sablay, Jessica Senekal, Nadia Ebrahim and Louise Groenewald**

THE INTELLECTUAL PROPERTY MANAGEMENT TEAM

The Intellectual Property Management team identify the gems amongst research outputs - the rough diamonds that have a glimmer of potential. The team interacts closely with researchers to define inventions and then work with attorneys to file, prosecute and maintain patents once granted. A new Database Officer, will extend the capabilities of the Inteum database, streamline administration and develop reporting to assist inventors as well as the RC&I team to manage the UCT IP portfolio effectively.

Philip Hoekstra (IP Manager)**, Tshepi Khahlu** (Senior IP Officer)**, Wasiu Afolabi** (Principal IP Officer), **Naseema Haffejee** (Database Officer)

THE TECHNOLOGY COMMERCIALISATION TEAM

The technology commercialisation team has expanded beyond its two **Innovation Commercialisation Managers** to include four new posts: an **Innovation Funds Manager** who will manage seed and investment funds available to UCT and look for niche funding requirements, typically from foreign donors, funders and investors; a **New Venture Support Manager** who will support the formation and growth of spin-off companies; a **Marketing Specialist** who will prepare materials to promote UCT technologies, create a variety of media content and also conduct market research; and the **Innovation Projects Coordinator**, who will run the funding calls, arrange review panel sessions and funding awards, whilst providing high-level project management. The Innovation Commercialisation Managers will, then, focus on maturing technologies and shaping the manner in which they are brought to market either through licensing or spin-off company formation.

Niall Naidoo (New Venture Support Manager), **Sivu Nxu** (Marketing Specialist), **Sean Neethling** (Innovation Funds Manager), **Saberi Marais** (Innovation Commercialisation Manager), **Francois Oosthuizen** (Innovation Commercialisation Manager), **Kirsten Amsterdam** (Innovation Project Coordinator)

THE ADMIN SUPPORT TEAM

The Admin Support Team fulfil a number of different functions ranging from: logging of research contracts on the eRA system, verifying and maintaining records of contracts (electronic / hard copy) as well as archiving; financial administration particularly related to invoices for IP protection as well as the distribution of royalties from successful commercialisation of IP and disbursement of innovation funding; and importantly welcoming visitors to our building and managing courier services and general inquiries.

Maghmuda Ockards (Database Administrator), **Candice Jacobs** (Administrative Assistant), **Taliep Hattas** (Senior Finance Officer), **Chandre Wilson** (Receptionist)

FUNDING AT UCT

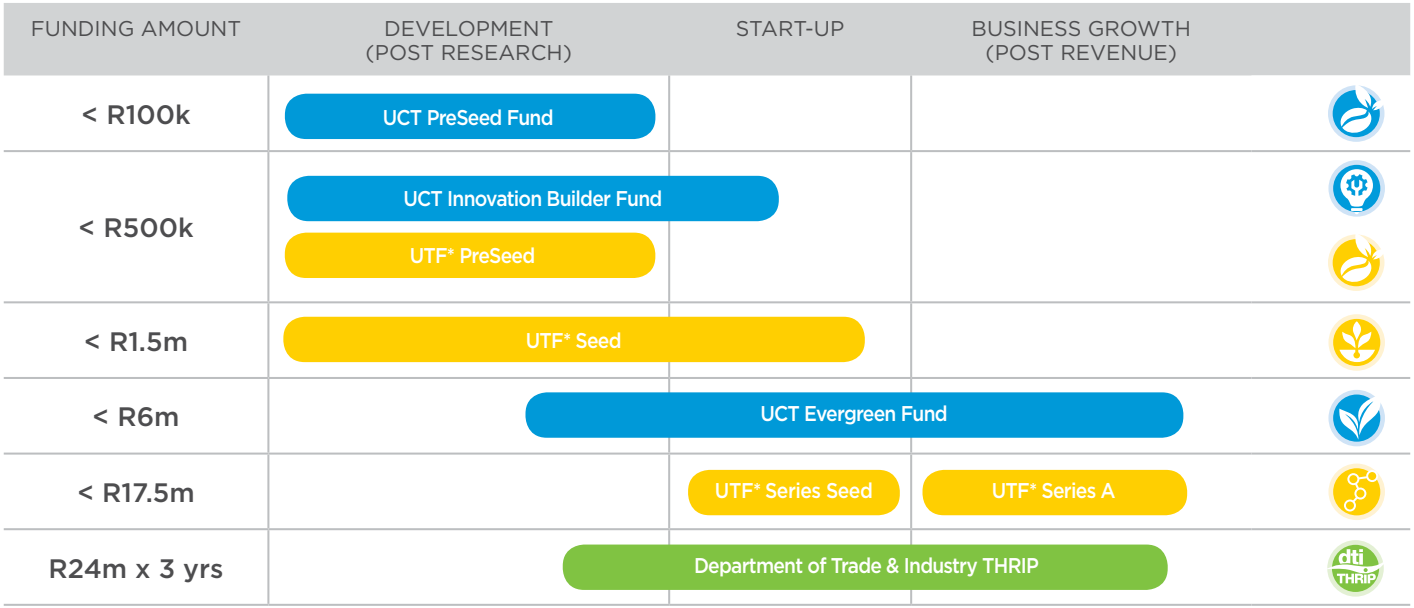
FUNDING LANDSCAPE

Over the last few years, UCT's innovation funding environment has changed significantly with the introduction of the Innovation Builder Fund in 2019 and culminating with the external University Technology Fund coming into being at the end of January 2020.

The spaces that the different types of funding support are shown in the diagram, aligning them in terms of development stage and quantum of funding.

Whilst external, we have included the Department of Trade, Industry and Competition's Technology and Human Resources for Industry Programme (THRIP).

This programme has been used by UCT in conjunction with a number of commercial partners to leverage their research spend. The programme lends itself to technology transfer from the university as well as the migration of recent graduates to employment in the company. Read more about how THRIP is helping the commercialisation of phycocyanin technology by Cirebelle in this booklet. Spin-off company Cape Bio Pharms also put THRIP to good effect, leveraging investment by the Evergreen Fund. Being an SMME, THRIP provided 75% funding, against the company's 25% investment in technology development; for top BBEEE credentials, the company only needs to contribute 10% funding.



* University Technology Fund

EQUITY IN SPIN-OFF COMPANIES

UCT holds equity in a number of spin-off companies and receives this equity via three different routes: firstly, in return for the assignment (transfer of ownership) of the UCT intellectual property to the company; secondly, through investment by the Evergreen Fund; finally, as a co-investment alongside the University Technology Fund. Although UCT has yet to 'exit' an equity investment, it is estimated the holdings are worth in excess of R100m.

INNOVATION BUILDER FUND

The Innovation Builder Fund was started by UCT in 2019 with the mandate of developing UCT research projects where initial proof of principle has already been established. The fund aims to support projects assessed to be commercially viable where research outputs have either protected or protectable intellectual property. The fund plays an important role in the UCT RC&I funding ecosystem where early stage projects can be incubated by de-risking fundamental development and technological risks to better understand the commercial potential of the opportunity. The availability of this early seed funding is a crucial enabling factor in achieving successful technology transfer/ commercialisation of IP from a university.

Funding of up to R500 000 is available for qualifying individual projects. This is structured as a grant over a maximum project duration of 12 months. Funding is released in tranches and is subject to the meeting of specific milestones to mitigate project risk. Recipients are also required to submit quarterly progress reports to manage project milestones and provide risk mitigation strategies where appropriate.

Over the two years that the fund has been running we have received 36 applications primarily related to the medical device and biotech sectors.

YEAR	APPLICATIONS RECEIVED	APPLICATIONS APPROVED	TOTAL FUNDING AWARDED
2019	22	9	R 3 558 832
2020	14	11	R 5 235 333
TOTAL	**36**	**20**	**R 8 794 165**

EVERGREEN FUND INVESTMENTS

The Evergreen Fund was established using donations from alumni, as well as around R60 million from Council following their approval of a portion of UCT's investments being directed to private equity and within that allocation, an amount specifically ring-fenced to support UCT spin-off companies.

The spin-off companies in which investments were made or loans have been extended include: Straight Access Technologies (SAT) Holdings (Pty) Ltd, CapeRay Medical (Pty) Ltd, Cape Bio Pharms (Pty) Ltd, Nisonic AS and HyPlat (Pty) Ltd.

In all cases the financial commitment by the Evergreen Fund has been significantly leveraged by other investment in the spin-offs, namely by Bidvest to SAT, the Industrial Development Corporation (IDC) to CapeRay, and THRIP to Cape Bio Pharms. Nisonic, which is incorporated in Norway, has secured investments from several venture capital funds there, as well as grant funding from the Norwegian government.

The purpose of the Evergreen Fund is to assist innovators in successfully transforming good technology into good business in a scenario where there is a dearth of early-stage funding for "deep" technology companies creating products in the non-ICT space.

Loans often provide an important "buffer" to the companies enabling them to keep operating until their next tranche of funding has been received.

The most recent investment was in Registree Rocks (Pty) Ltd which operates in the ICT space, and is the first outside the health / biotech sector that the other spin-offs operate in.

Registree is a decentralized and cryptographically secured student database and platform that connects universities, students, and third parties such as employers and bursary providers.

For employers, Registree overcomes costly search frictions in the graduate labour market and reduces the employers' cost of finding appropriate candidates. Through Registree's collaboration with universities, employers and other third parties have access to the entire pool of graduates from all faculties instead of a small subset provided by competing jobs portals. This greatly improves third parties' ability to identify the perfect candidate for internships, bursaries, or as employees. With Registree's platform, students have more control over their personal information, while universities remain the sole custodians of the data. This guarantees that the data third parties obtain from the Registree platform is accurate, verified and always 100% authentic.

UNIVERSITY TECHNOLOGY FUND

Chair of the UCT Private Equity Advisory Committee, Chris Derksen, said, "I am excited by the opportunity that the UTF will bring to supporting deep tech spin-offs from the university and particularly as it supports early-stage investment. Bridging the risk gap between technologies leaving the university and the point where venture capital typically invests supports the commercialisation of world-class intellectual capital that exists in South Africa."

Launch of the SAVCA Conference: L to R: Ketso Gordhan (CEO SA SME Fund), Dr Andrew Bailey and Piet Barnard (UCT), Thiru Pather (SA SME Fund), Stefan du Toit (Stellenbosch University), Wayne Stocks and D'Niel Strauss (UTF Fund Manager, Stocks & Strauss), Ryan Harrison (SA SME Fund)

UNIVERSITY TECHNOLOGY FUND

The SA SME Fund recently launched the University Technology Fund (UTF), a first of its kind in Africa. UCT and Stellenbosch University are the first two universities that will participate in the fund, which will provide UCT spin-off companies with access to R50 million of funding for Series Seed and Series A funding rounds as well as additional seed funding to support innovation projects within the university. UCT is required to co-invest R20 million alongside the UTF in the ventures and does this via its Evergreen Fund.

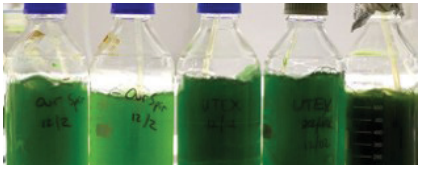
A unique aspect of the UTF is that the SA SME Fund has provided smaller amounts for very early-stage investment – PreSeed (up to R500k) and Seed (up to R1.5m) – in order to develop the pipeline that may be invested in during either Series Seed (pre-revenue, R5m) or Series A (post-revenue, ~R12.5m).

Since its inception on 31 January 2020, the UTF has made two investments in UCT spin-offs with another two opportunities currently in due diligence. The first was a "series" investment in Cape Bio Pharms. This was a second-round investment, with UCT having invested in the first round through the Evergreen Fund and the company having leveraged that investment via THRIP funding.

Cape Bio Pharms has done exceptionally well in establishing itself in new facilities and developing a portfolio of reagents manufactured using modified tobacco plants. The company gained real impetus during the Covid-19 outbreak by manufacturing four different proteins used to detect the virus. This has led to considerable foreign investment and the construction of large-scale commercial facilities to supply the demand.

The UTF has also more recently invested "Seed" funding in UCT spin-off Hydrogen Energy Applications (HYENA) (Pty) Ltd. HYENA is focussed on the production of hydrogen from LPG gas to produce electricity from hydrogen fuel cells. The company is profiled elsewhere in this booklet.

About their partnership with UCT and other universities, Cirebelle CEO Luke McClachlan says: "The thesis is that at universities, there exist examples of high IP but with a gap to bridge for commercialisation. However, where we're strong, they aren't necessarily. Where it's difficult for us, they've got things covered. Otherwise that kind of first principle R&D is hard to do in any other context."



Over the past decade or so, consumers have become increasingly aware of what they put in and on their bodies. There has been a massive uptake in natural products that are friendly to the environment and prioritise human (and animal) health.

CIREBELLE

SOMETHING BLUE
Phycocyanin leads to promising partnership

One of the results of this has been a drive among food and cosmetic companies to replace any synthetic dyes in their products with natural alternatives. While most colours were relatively easy to replicate and produce, blue – a surprisingly rare colour in nature – provided something of a challenge. The temporary disappearance of blue Smarties in the mid-2000s is an oft-cited example of this. When Nestlé decided to replace artificial colouring in their sweets with a natural counterpart, they were left with no choice but to remove the blue candy-coated chocolate sphere altogether from their product.

Enter the discovery of phycocyanin, a brilliant blue dye extracted from the cyanobacterium, Spirulina. Recently approved as a food additive in both the United States and the European Union and also marketed as a health food supplement or nutraceutical, it has saved blue Smarties and became a highly sought-after natural commodity in the food and cosmetics industries.
The Centre for Bioprocess Engineering Research (CeBER) at the University of Cape Town (UCT) has developed and patented an improved and novel process for the extraction and purification of phycocyanin from Spirulina. The process removes microbial contaminants present in the raw Spirulina and enables high purity product to be achieved cost effectively.

It has also attracted the attention of Cirebelle Fine Chemicals, a local chemistry-led company that specialises in the manufacture of waxes, exfoliating spheres and botanical oils for use in especially cosmetics, but
also food products.

"At Cirebelle, we're dedicated to the mission of manufacturing in South Africa and exporting our products," says Liesl Keulder, Cirebelle's manager. "We recognised the extraction of phycocyanin as an opportunity to branch out the business a bit more."

dti THRIP

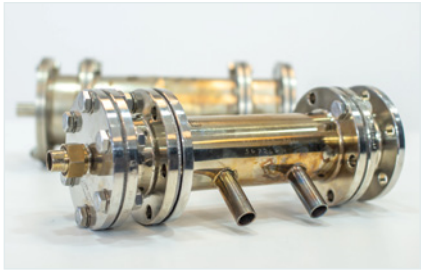
Through the support of a DTI THRIP award Cirebelle will, in partnership with CeBER, scale up the CeBER's laboratory process and create a Cirebelle pilot facility that meets the necessary standards for commercial manufacturing of phycocyanin.

Throughout Africa there is a burgeoning demand for electricity in off-grid locations. Currently, this need is most often being met through diesel generators, which come with a long list of impediments including poor reliability, demanding maintenance cycles, noise pollution and particulate emissions.

Hydrogen Energy Applications, cleverly acronymised to HYENA, is a University of Cape Town (UCT) spin-off company that aims to revolutionise the provision of electricity in poor-grid locations throughout Africa by employing fuel cell technology that converts hydrogen into affordable, on-demand and weather independent electrical power from locally available fuel.

Although hydrogen distribution infrastructure is practically non-existent in Africa, the team have identified liquefied petroleum gas (LPG) as an appropriate hydrogen carrier for on-site generation.

Niels Luchters, HYENA co-founder and CEO, explains that there are numerous reasons why LPG is the ideal fuel: "LPG is widely available, even in rural areas where it is used for cooking purposes. Since it is a liquid under slight pressure, it's also easy to transport," he says. "Another benefit of LPG is that, unlike diesel, it is a relatively clean fuel."



"It's exciting to think that after all the research that has gone into this, we are on our way to making a real product."

HYENA
HYDROGEN ENERGY APPLICATIONS

A novel approach to off-grid energy

What makes HYENA's technology even more exciting, is the fact that it comes in the form of a neat and easy-to-maintain power pack. These power packs comprise two sections: a hydrogen generator and a fuel cell.

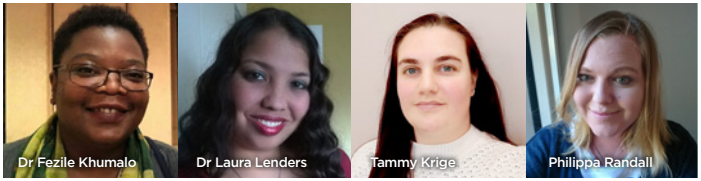
In the former, hydrogen is released from water and LPG via a series of reactions over platinum group metal catalysts. In the fuel cell, hydrogen and air are converted to electrical power and water. The entire operation is silent while generating electrical power with 15 % lower CO_2 emission than a diesel generator.

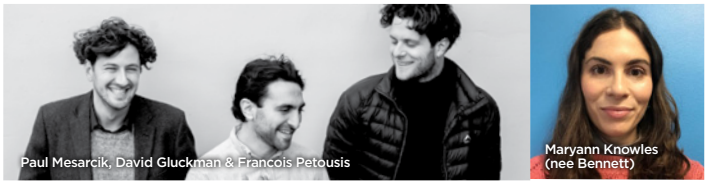
The value of HYENA's product is already being recognised, as the company became one of the first recipients of the newly-established University Technology Fund's (UTF) seed phase funding.

"It's exciting to think that after all the research that has gone into this, we are on our way to making a real product," says Luthers. "Hopefully by this time next year, it's something that is on the table and really there."

CEO, Niels Luchters says: "Hydrogen is typically transported in steel cylinders, each weighing over 50kg. The 9kg LPG cylinder and the bottle of water that I am holding in my hands, contain the same amount of hydrogen as 5 of the heavy red cylinders."

UCT SPIN-OFF COMPANIES PLOUGH BACK WITH GRADUATE JOBS





The bulk of IP licensing activity at UCT is actually with a number of its spin-off companies located in close proximity to campus, a trend noted in the USA too. Of importance to South Africa and the Western Cape and is the fact that these companies are helping to retain skills by creating positions for recent graduates, along with other jobs and supply chains.

We have only mentioned a few of our spin-off companies in this article: Antrum Biotech (TB diagnostics), CapeRay Medical (mammography imaging through low-dose x-ray and ultrasound), Lumkani (shack fire detectors & insurance products), Cape Bio Pharms (plant-based proteins / reagents / enzymes / vaccines), Impulse Biomedical team (medical devices) and Straight Access Technologies (SAT) (heart valves and deployment devices).

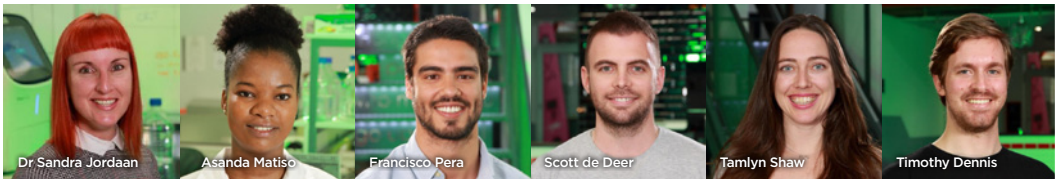
Founded in 2008, SAT is one of the more well-established UCT spin-off companies. Their focus is on creating intelligent surgical products for the treatment of rheumatic heart disease in emerging economies throughout Africa, which is considered to be one of the epicentres of the condition.

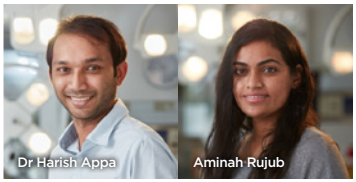
"We want to make it cheap, easy to use and accessible to those who need it most," says chief operating officer, Heather Coombes. As a chemical engineering student at UCT, Coombes had always dreamed of becoming a biomedical engineer, so following industry experience, when the call came asking whether she'd be interested in being part of this new venture, she immediately jumped at the opportunity.

"The number one thing we really look for is passion for the project and curiosity," says Coombes. "You also have to be able to be flexible to really jump and change and manoeuvre around things and just tackle different projects at different times."

Eight years later, Coombes has played an integral role in creating similar dream opportunities for countless engineering graduates. SAT currently boasts a team of 65 and continues to grow.

At the other end of the spectrum, Cape Bio Pharms and Impulse Biomedical are both freshly established start-ups,





younger than three years old. Despite their recent entry onto the start-up scene and the curveballs thrown by the coronavirus and subsequent lockdowns, both have experienced major growth in their staff contingent.

If anything, the coronavirus seemed to offer the Cape Bio Pharms team something of a boost. As Scott de Beer, lead scientist (downstream), with a Masters from the UCT Biopharming Research Unit (BRU) explains: "Before COVID-19, we were focusing on some reagents and got really good at making antibodies, purifying and testing them. And then Corona hit and there was a fantastic opportunity! So, we basically then just changed direction, using the same sort of methods that we did for the antibodies, but now for some of the coronavirus proteins."

"Because we work with plants, we responded very rapidly to the coronavirus when other platforms could not respond as quickly as us," explains Francisco Pera, upstream lead scientist. "In the beginning of the year, we were six people. Then March came and it just exploded."

Through the support of a THRIP award they were able set up the lab of their dreams, an endeavour that is turning out to be both exciting and nerve wracking for the two scientists. "You're buying equipment that costs a couple of million rand," laughs Pera. "You don't want to make a mistake!"

The excitement that comes with the arrival of new equipment is something

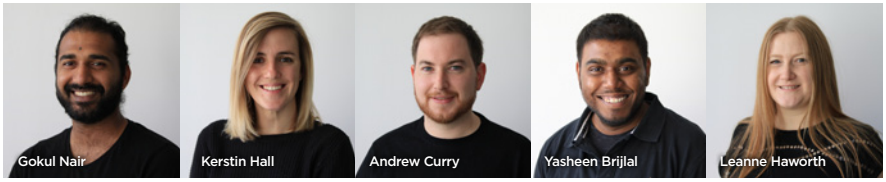
Antrum Biotech
Healthcare Innovations
Fezile Khumalo Tammy Krige
Laura Lenders Philippa Randall

CapeRay
Prof Kit Vaughan Murray Truter
Roland Baasch Sbonelo
James Long Mntungwa

LUMKANI
SAFER TOGETHER
David Gluckman Jason Hardy
Paul Mesarcik Aatiqah Fataar
Francois Petousis Tinashe Gwatiringa
Maryann Knowles *(nee Bennett)*

CAPE BIO PHARMS
REPRODUCIBILITY GUARANTEED
Dr Sandra Jordaan Scott De Deer
Asanda Matiso Tamlyn Shaw
Francisco Pera Timothy Dennis

SAT
STRAIT ACCESS TECHNOLOGIES
Dr Harish Appa Michael Cousins
Aminah Rujub Khusheel Vallabh
Julian Lea Heather Coombes



IMPULSE
rethink medical devices

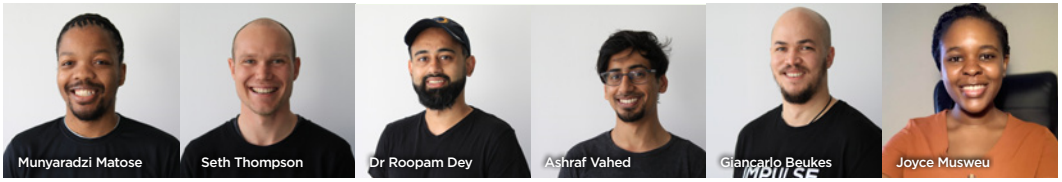
Gokul Nair
Kerstin Hall
Andrew Curry
Yasheen Brijlal
Leanne Haworth
Munyaradzi Matose
Seth Thompson
Dr Roopam Dey
Ashraf Vahed
Giancarlo Beukes
Joyce Musweu

that Impulse Biomedical (IB) co-founders, Gokul Nair and Giancarlo Beukes have. Both of them hold Masters degrees from the Biomedical Engineering lab, and their steadily growing team also have recent experience of. IB is currently developing the ZibiPen – an adrenaline auto-injector for the treatment of anaphylaxis - and Easy Squeezy – an assistant device that dramatically reduces the force needed to activate an asthma pump – running tests is part of Impulse Biomedical's daily routine. So, when a brand new testing machine recently got delivered to their lab, the entire team was there to bear witness.

"One person cut the string, another did something else and we had this whole ceremony for opening the box," says Nair, with Beukes adding: "The guy doing the installation said this is the most enthusiastic group he's ever met – just for the installation and training of a testing machine."

While told in passing, this little anecdote says a lot about the company culture being built at Impulse Biomedical. Although both Nair and Beukes come from an engineering background, they've thrown themselves into their leadership roles and are determined to create an environment where biomedical engineering graduates can thrive. This includes having monthly one-on-one coffee meetings with each of their three permanent- and two part-time staff members to ensure that everyone's visions are aligned.

Within the next year, the company aims to employ at least another seven people, followed by exponential growth in staff numbers as their devices move closer to market.



science & technology
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