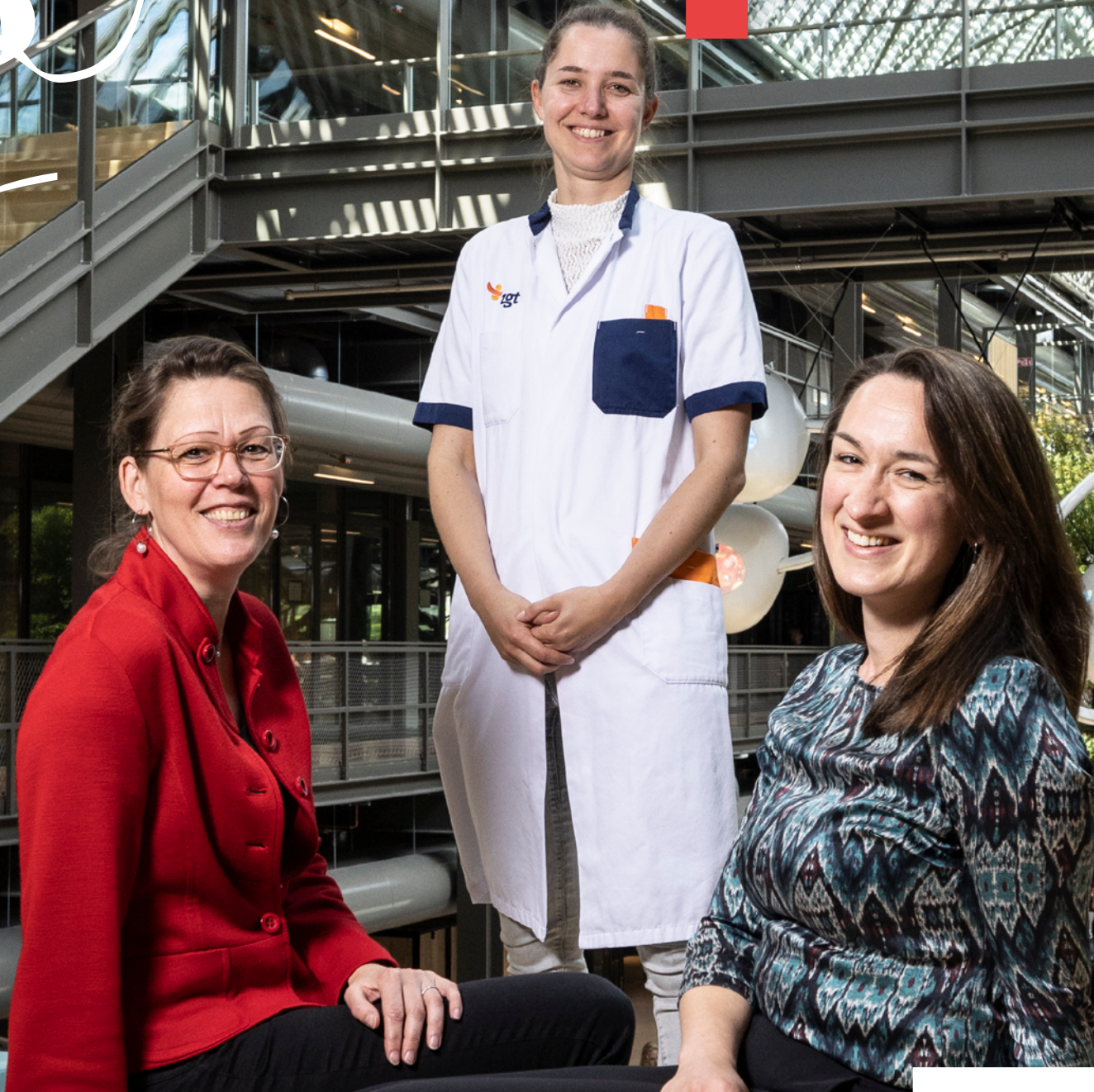


Campus



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COLOPHON

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FOREWORD



WELCOME

Of course, dear freshmen, we've already noticed you on campus. Looking around awkwardly, standing in long queues during registration for the Kick-In. Shuffling past stands with newly-made friends, and even managing to score one of those fine cookbooks by U-Today's cooking vlogger Rianne. You have the option to consider such a wide range of sports and student associations. You pondered whether to play volleyball or tennis, and you quickly swap your Twente accent for fluent Cambridge English.

After those first days and nights sampling student life, you've learnt quickly. Hybrid education has its advantages if you were still necking shots on the bar just a few hours earlier! You've discovered that the campus COOP sells really tasty fresh bread rolls. And it's still a major puzzle to find the exit of the Cubicus on your own...

In the meantime, you continue to worry about how on earth you're going to fit everything in: studying, classes, forming project groups, cooking for yourself (tip: grab a copy of U-Today's cookbook), doing your own laundry, making ends meet on a meagre student budget, socialising, exercising, making new friends... all of this can be seen in the bags under your eyes and the droop in your shoulders. Come on! Relax! All of the 40,000 alumni who read this magazine have done the same before you. And if they can do it, so can you.

Why not make a point of reading the interview with UT alumna Christy Aikhorin (page 32). 'I didn't fully realise where I was going until I was on the train from Schiphol to Enschede. It felt like I was leaving civilisation (...). It was the first time I was surrounded by so many different cultures. It was like a melting pot of nationalities.' Aikhorin is now the Dutch director of the international organisation 'Women Engage for a better future'.

So give it a few years and we'll be interviewing you! But for now, good luck with your studies, enjoy student life and we hope you feel very welcome on our campus. •

Maaïke Platvoet
Editor-in-chief of Campus Magazine

THE COLLECTIVE AMBITIONS OF THE UT AND VU

UNIVERSITY OF TWENTE



THE UNIVERSITY OF TWENTE AND VRIJE UNIVERSITEIT AMSTERDAM HAVE EMBARKED ON A SHARED PROJECT.

THE FIRST COHORT OF STUDENTS TO TAKE THE JOINT BACHELOR IN MECHANICAL ENGINEERING HAVE NOW GRADUATED AND A SECOND JOINT PROGRAMME IS IN THE PIPELINE. 'IT IS CLEAR THAT THE COLLABORATION IS GRADUALLY IMPROVING,' SAY STUDENTS AND 'GUINEA PIGS' DE JONG AND DE BOER.

As with any love story, there is always the initial flirt; a gentle spark that develops into a crackling bonfire. And the story is no different for the UT and VU. The Twente and Amsterdam-based universities formed a connection in 2017, when they, together with the UvA, were preparing a bid to become the home of the Netherlands Institute for Space Research (SRON). Their efforts were in vain as the space institute went to Delft and Leiden. The Twente-Amsterdam love story, however, continued to grow.

This is confirmed by Vinod Subramaniam, current president of the University of Twente and, at that time, rector of the Vrije Universiteit. 'During the process, we got to know one another better and realised

that we not only collaborated really well, but that we also had ideas for expanding this collaboration.' This comes from a shared philosophy, according to Subramaniam. 'Both of us are completely certain that collaboration is vital in order to take on the enormous social challenges ahead. The issues we are facing in areas such as climate change, digitalisation and future-proofing healthcare cannot be tackled with technicians alone. That is why we found a mutual interest in seeking combinations between the technical, social and behavioural sciences. We must seek the boundaries of disciplines; that is where the most interesting things happen.'

TECHNICAL TALENT

These are big words from the president. But he also realises that Rome wasn't built in a day. Starting off small was the motto for the UT and VU; don't run before you can walk. In September 2019, this resulted in the start of a joint programme in Mechanical Engineering, under the banner of the existing Mechanical Engineering programme at the UT. A completely new programme would entail much more con-

sideration and preparatory work. This gave the collective ambitions of the UT and VU a flying start. Both organisations also recognised a gap in the market, explains Pieter Roos, the location director up until last summer. 'A relatively low percentage of students from the Amsterdam region chose an academic engineering programme. Even the Mechanical Engineering programme in Delft was not popular. With this joint programme, we saw an opportunity to attract students and educate them. After all, the labour market is crying out for technical talent. The idea was that some of the students would also go on to do a Master's programme in Twente once they had become acquainted with the UT. As a result, we can increase the number of students choosing to take a Master's programme and attract technical talent to the Twente region.'

SCHOOL TRIP

A unique format was thus created. Anyone who opts for the Twente/Amsterdam programme in Mechanical Engineering attends lectures in both Amsterdam and Enschede. On the days that students come to the UT campus, they can stay in the log cabins at Boerderij — Bosch. And does that work? Bo De Boer and Daan de Jong can tell best, as they were part of the first cohort. 'It's great fun!' says De Boer. The Amsterdam-born student is lyrical about the group's overnight stays. 'The first time we came to Twente, we immediately formed a friend group. It felt as if we were going on a field trip together. In all honesty, we didn't do much studying in the evenings, with the Vestingbar just around the corner. The fridge in the 'Stall', or the shed as we call it, was always full. I don't think the teacher that we had on a Friday morning was particularly delighted about that though!'

And the travelling? Was the travel time and distance acceptable? According to De Jong, who lives in Heerhugowaard, it helped that the group quickly became close. 'You have to travel for about three hours and that's not everyone's cup of tea. But the train connection is great and relatively quick. We often caught the international train from Amsterdam Central, where we gathered as a group. If we had no deadlines, we would often pass the time playing cards together. When there were deadlines, everyone would sit with a laptop in front of them. Then, before we knew it, we'd arrived in Twente.'

This type of adventure does not suit all students; a brand new programme at two separate universities. Why did they choose Mechanical Engineering? 'After secondary school, I knew I wanted to do something technical,' explains De Jong. 'I thought Mechanical Engineering would be a good option, but there were no opportunities in the Amsterdam region. But that's where I live and where my friends are. Then I heard about this joint Bachelor.' De Boer, in her own words, fell in love with Twente during an Open Day. 'Its small scale really appealed to me. But I was 18 and not ready to live on my own. I was born and raised in Amsterdam. This is my city. In the end, the choice of Mechanical Engineering was a complete gamble and more than one person told me I must be mad. But it is a gamble that has definitely paid off. It's a great foundational programme.'

EXPERIMENT

For the first batch of students, teachers and other stakeholders, the first few years of the collaboration involve a great deal of pioneering work. 'In some senses, this type of new programme is a sort of playground,' says Roos. 'It is on a smaller scale. So, you have an opportunity to colour outside the lines and discover things that could

be valuable at a later date elsewhere in the UT.' Students De Boer and De Jong were also pioneers in the first years of the programme. And things didn't always run smoothly. 'Sometimes things went wrong with the timetable as a result of the different systems at VU and the UT. I had a class at VU and then had to be at the UT twenty minutes later, for example. In Amsterdam, I also missed the option to walk in and chat to the teachers, which is completely normal in Twente. That's when you are reminded that you are studying at two different universities. We were right to call ourselves guinea pigs. But there are plenty of perks that come along with a new programme, including the fact that everyone took our opinions seriously when we provided feedback and that we could start new things, such as our own study association. And it is clear that the collaboration between the two universities is gradually improving.'

DIFFERENCES AND SIMILARITIES

Nevertheless, the distinct differences between the two institutions and their students remain clear. 'On the Twente campus, you can see who comes from Amsterdam just by their appearance and behaviour,' De Boer says with a chuckle. The male/female ratio is also different, adds De Jong. 'At VU, the population is more diverse.' Location director at the time, Roos, also sees differences, primarily in relation to organisation but also in terms of culture. 'If you look from a distance, there are enormous similarities. But the closer you zoom in, the more you have to focus on the practical and operational differences. Take, for example, the scale of the two institutions; the UT is quite flat while VU is bigger and more traditional.' University president Subramaniam, who knows both institutions extremely well, can also see differences. 'To put it bluntly, engineers just want to roll their sleeves up and get to work but in Amsterdam they sometimes feel the need for more discussion. But I find it even more impressive that we are able to bridge the differences and join hands. I see shared enthusiasm across the board.'

ENRICHING

That is precisely why the two universities have recently taken a second step in this collaboration, as Twente's Bachelor programme in Creative Technology (CreaTe) will be offered by VU from September 2023. CreaTe in Amsterdam will be targeted at students from across the western Randstad region, according to programme director Alma Schaafstal. She says the programme in Amsterdam will be slightly different to the programme in Twente. 'Even if it's only because we fall under the Faculty of Humanities. This is also reflected in the curriculum for the Twente programme. We thought long and hard to figure out: what's in it for us? Why would we enter into this type of collaboration? I already understood it on a higher, more strategic level. And I am now convinced that on an operational level the collaboration will serve to enrich all the things we do here too. Take the new joint track Humane by Design, for example. I think that the collaboration will have a positive influence on the vibe of the Twente-based programme. This allows us to seek out and create added value for one another.'

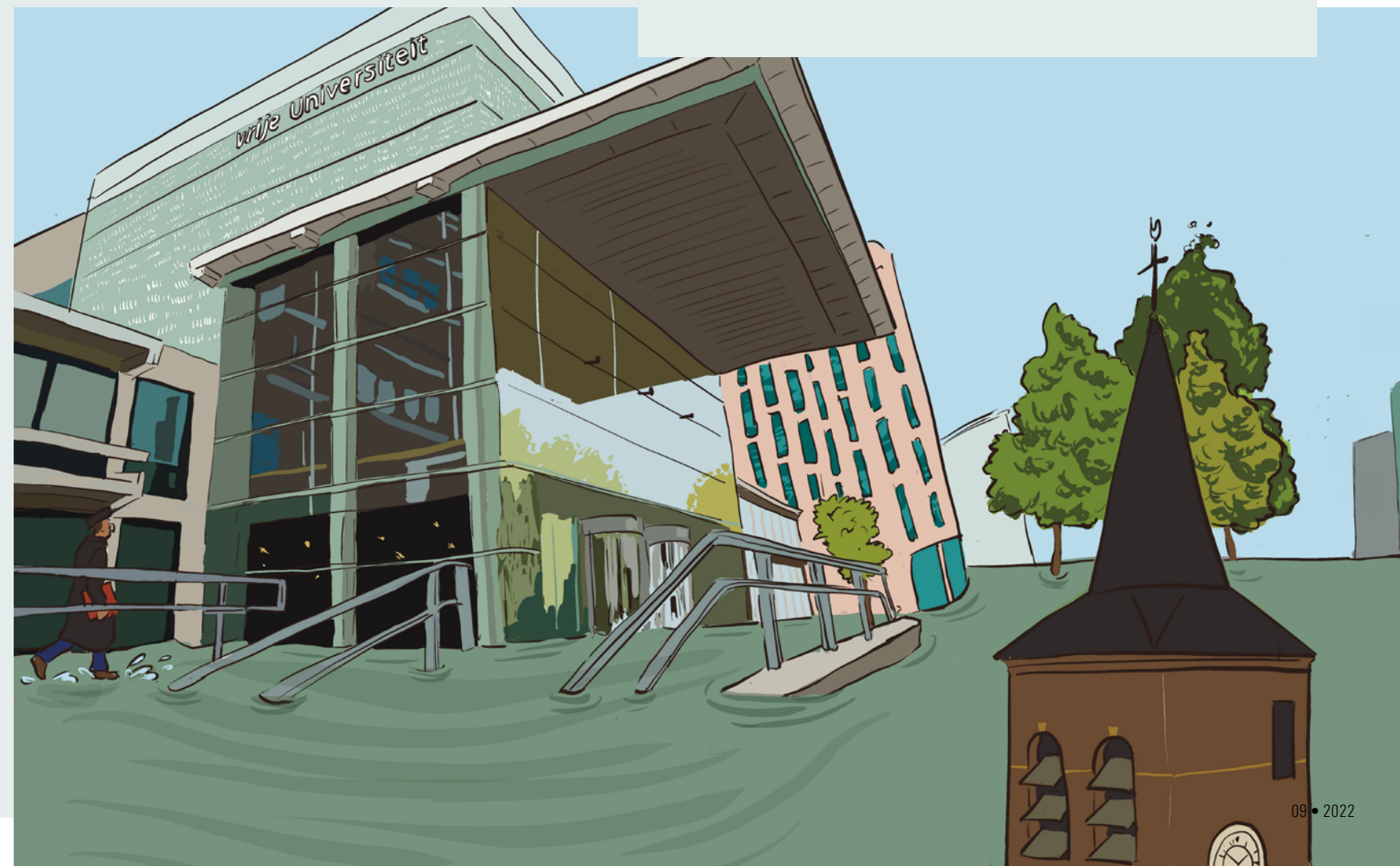
According to Schaafstal, there are huge opportunities for Twente in terms of diversity. 'I find the VU to be much more diverse than the population at the UT. This diverse and inclusive character is something that thrives within CreaTe.' And there are other things that the programme director is looking forward to. 'Lectures will primarily take place in Amsterdam but for the major, interesting projects, we will let the students come to Twente. I am really looking forward to that: 250 students from both universities claiming the whole DesignLab and working together. I am super excited to facilitate that.'

FUTURE

Let's be clear: Schaafstal is delighted to be involved in the future collaboration. How does the departing location director Roos see the coming years for Mechanical Engineering? He believes that the joint programme should find a 'steady state'. 'It's all about realising a stable condition after this start-up phase, and that has been hindered somewhat by Covid-19. You can't be pioneers forever. The big challenge is to make the circle of commitment stronger and larger. In order to achieve this steady state and ensure robust commitment, an even share of teachers from both VU and the UT is vital. The balance is currently a little tilted towards the UT side. It is also important to create a base for this programme within the Faculty of Science at the VU, which also connects to the VU's research. Then we will have a better position within the faculty.'

And how about the future of the first cohort of Mechanical Engineering students? They graduated last summer. Have they chosen a master's programme in Twente? The score is 100%: both are choosing Twente. 'When I said this, I was enthusiastically told, "Woohoo, we've managed to reel one in!" It was a very deliberate choice to come to Twente,' says De Boer. 'In Amsterdam, there is not a really suitable postgraduate programme for me, even though there are a lot of attractive companies. I may well end up going back to Amsterdam for one of these companies.' De Jong also chose Twente — after some initial doubt between a master's in Twente or Delft. Above all, he is glad he completed the joint programme. 'As a student from the Amsterdam region, you don't have to move into a student room at a young age but you can still do a technical programme. There is a high demand for this from society.'

While the first students have collected their diplomas and the Mechanical Engineering programme is trying to realise a 'steady state', the next collaboration is already in the pipeline. As well as CreaTe, both institutions are exploring a joint programme in Industrial Engineering & Management. University president Subramaniam sees the graduation of the first students as a genuine milestone. 'Alongside Mechanical Engineering and CreaTe, we should work on a brand new joint programme in the long term. The collaboration must also lead to strong research proposals, both national and European. In the end, we want to achieve positive, shared interdependence. That is our goal.' •



'I see shared enthusiasm across the board'



CRITICAL REPORT OF UCT

University College Twente (UCT), also known as ATLAS, has received a critical evaluation this spring. The 2022 report, conducted by an external committee, mentions 'unsafe environment at all levels', dissatisfaction and a lack of common goals, management, communication and positioning. As interim dean, Heleen Miedema (former education director of Technical Medicine) is tasked with bringing about changes to the programme.

'We were shocked by it and take the report very seriously,' responded rector Tom Veldkamp. 'That is also the reason we are following the advice, by appointing Heleen Miedema as interim dean. Even though it is not a reorganization, there will be changes in governance, organization and collaboration.'

8

60TH DIES NATALIS

The University of Twente celebrated its (postponed) sixtieth anniversary on the 20th of May, 2022. The Dies Natalis, held in the Waaier, also served as the occasion to hand out the four honorary doctorates. The degrees were awarded to IPCC co-chair Debra Roberts, physicist Wim van Saarloos, cybersecurity expert Jaya Baloo and Prince Constantijn, the face of the start-up lobby in the Netherlands.



SLIMPARK ON CAMPUS

The SlimPark on the UT campus is a living laboratory as well as a demonstration site to study the optimal use of solar energy to charge electrical cars. Nine electrical cars can be parked and plugged into the charging stations. 'SlimPark demonstrates the essence of a microgrid,' says Johann Hurink, Professor of Applied Mathematics, who develops smart solutions for an optimal use of sustainable forms of energy. 'In this demo-study, important aspects of energy management are integrated: we generate solar electricity, use this energy locally for charging and store the excess in a battery.'



UT WINS THE DUTCH HIGHER EDUCATION AWARD



The Master-insert 'Shaping Responsible Futures' of the University of Twente has won the Dutch Higher Education Award worth 1.2 million euros. The winning team received the prestigious award for educational innovation from Minister Robbert Dijkgraaf in May.

The study programme is an additional programme for students, in which master's students follow an in-depth programme in transdisciplinary working outside their regular study programme. The focus is always on a topical and complex societal relevant issue. The Master-Insert is initiated by the DesignLab and the Faculty of Engineering Technology.

9

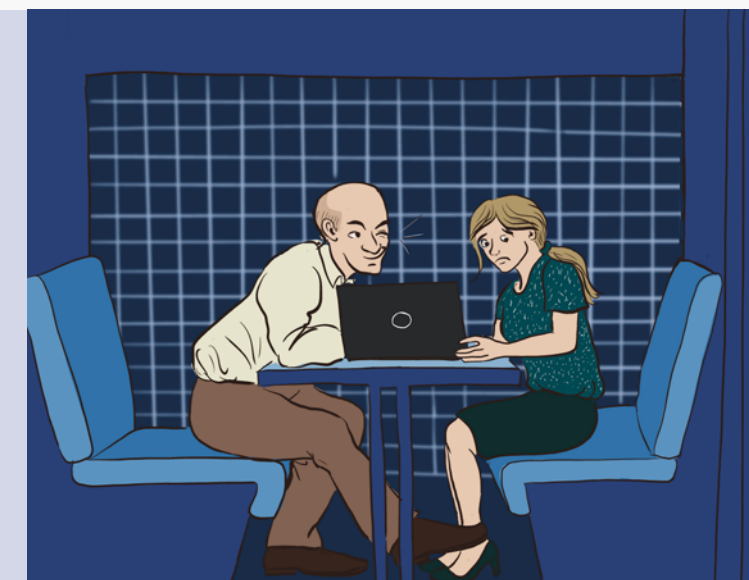
ERC CONSOLIDATOR GRANT FOR DAVID MARPAUNG

UT professor David Marpaung has been awarded the Consolidator Grant from the European Research Council (ERC). The scientist received 2,55 million euros for his project TRIFFIC, which aims to develop an advanced 3D integrated circuit that brings together light and sound waves.

Professor Marpaung is the head of the Nonlinear Nanophotonics group, part of UT's MESA+ Institute for Nanotechnology. His research interests include RF photonics, photonic integration, nonlinear optics, and phononics.

TRANSGRESSIVE BEHAVIOUR SURVEY

A survey, held by U-Today in spring 2022, showed that eleven percent of UT employees, who completed the survey, had been victims of transgressive behavior. Among UT students, the percentage was much higher: almost forty percent said they experienced transgressive behavior annually or more often. More than three quarters of respondents indicated that they do not know where to turn with a report of undesirable behavior. 286 respondents participated in the survey. The results are therefore not representative of the UT community, but do paint a picture. The survey was conducted in cooperation with the independent research firm Newcom.



RECTOR MAGNIFICUS TOM VELDKAMP

FIVE QUESTIONS FOR RECTOR MAGNIFICUS TOM VELDKAMP ABOUT FUTURE-PROOF TRAINING AND INNOVATING EDUCATION, ONE STEP AT A TIME.

01

THE UNIVERSITY OF TWENTE WAS PRESENTED WITH THE DUTCH HIGHER EDUCATION AWARD. HOW DO YOU EXPLAIN THE SUCCESS OF THE DEGREE?

'In the first place, it was a great team effort, involving staff from different faculties. Teamwork is also at the heart of the Master-Insert [a module that students can take outside of their regular study to immerse themselves in cross-disciplinary collaboration on a societal relevant theme - Ed.]. Students are taking much greater control and can decide what and how they want to learn. In fact, they are very much more a partner alongside lecturers, more so than you might find with a more traditional educational approach. Working together, they look at how to develop and deepen the skills required to handle complex societal issues in a coherent way.'

02

THE MASTER-INSERT DIFFERS FROM TRADITIONAL EDUCATION IN TERMS OF ITS FORMAT. IS THAT GOING TO BE A TREND FOR THE FUTURE?

'In some ways yes, since it's all about the notion of moving towards future-proof training. You cannot rely on your degree to see you through the rest of your career. The range of courses we offer in this area is constantly developing: it's no longer just bachelor's and master's courses or doctoral research, but also new formats that have been designed to meet the needs of society. Together with Saxion and ROC van Twente, our initial focus is on the needs of the energy transition. There are also other topics that lend themselves very well to following a targeted approach, especially working in the spirit of lifelong learning.'



03

WORKLOAD IS A HOT TOPIC AT UNIVERSITIES, INCLUDING THE UT. DOESN'T THIS PUT A BARRIER IN THE WAY OF NEW DEVELOPMENTS SUCH AS THESE?

'The high workloads certainly add pressure in terms of developing innovation in education. At the same time, though, the teaching staff seem energised by the idea of working on educational innovation. We would very much like to facilitate this, so that the good ideas coming from the grassroots have a chance to flourish. Further innovating education, one step at a time.'

04

THIS REQUIRES A CONSIDERABLE INVESTMENT TO BE MADE IN TERMS OF TIME AND MONEY...

'There will also be financial support for innovation. In this way, we can relieve teaching staff so that they have time for research and teaching, as well as their personal development. I find this very important. Good teaching and good research require room for reflection.'

05

TECHNICAL MEDICINE, TECHNICAL COMPUTER SCIENCE, AND PSYCHOLOGY WILL HAVE A NUMERUS FIXUS. CAN WE NOT FIND A CLEVER SOLUTION TO THIS?

'The need to have a numerus fixus hurts us. It's a major societal undertaking to train people in technology, and we want to provide our contribution to that. But with some courses, we are really up against the limits and the whole educational process is under strain. The only option available is scaling up, but that's not something you can just quickly do. On the other hand, there are also lots of really great courses that can still develop without the need to change their essence. Growth is particularly welcome in some technical studies.'

LOCH NESS MONSTER

An enormous square measuring ten by ten metres and one metre high was unveiled on the campus in 1975. Made of steel, it was seated on large air cushions and underneath, an ingenious pumping system reduced or increased the amount of air in the floats, causing the island to either sink or rise. Artist Ray Staakman had designed this installation at the request of the Art Committee at Twente Polytechnic Institute. Back in the early days of THT, a number of artists were commissioned to work on the Drienerlo site. The idea was (and still remains) to design art for public spaces that relates to the surroundings. For example, the artwork might be a reaction to the surrounding architecture, landscape or infrastructure, or make a reference to science.

Staakman had created an object, the shape of which was reminiscent of the flat and angular structure of Cubicus. The building actually used to be much larger than the one that stands on the site today – a fire destroyed more than half of it at one point – and it was predominantly surrounded by water. That is why water played such a key part in this design, enabling something to emerge from the pond before once more disappearing... This happened completely randomly, just as if it was some kind of Loch Ness Monster.

To the delight of all those who were present at the launch, the island sank under the surface of the water and then surfaced once more for just a brief moment, before promptly sinking.

A few years ago now, the wreck was cleared away. I personally found it rather fascinating that a gigantic slab of steel had been lying under the water for years. Hardly anyone knew about this. Plants had adapted and made it part of their biotope. Fish perhaps hid in the folds of the air cushions.

In fact, this drowned island reminds me of the Little Tower of Drienerlo in the pond in front of De Vrijhof. Wim T. Schippers also designed this in a way that intrigues and provokes. Is there an entire church standing under the water?



The latest work of art, The Head, by Atelier van Lieshout, also fires up the imagination of people. Is it a buried body with its head sticking out above the ground? You know, in the same way that you bury each other in the sand when playing on the beach? Are the feet in the basement of De Spiegel? Is that a finger sticking up between the bushes?

Other people see Squidward Tentacles, a character from SpongeBob Squarepants, in the work. Vinod Subramaniam, Chair of the Executive Board, gave a speech in which he called it a totem for our tribe.

Joep van Lieshout is of the opinion that everybody is free to interpret things in their own way, and he views this work of art very differently. He believes that the form is a nod to the mysterious heads found on Easter Island and is in fact reminiscent of modern pixels. We use our heads for thinking, something we are supposed to do at university. If you climb into the statue, you traverse through a DNA helix and from the highest viewpoint, you are able to view the world from above, hopefully conceiving new ideas. The copper exterior was chosen because copper is a material that has long been used by man, and because it will turn green over time as a result of oxidation.

But what I like best, are the unintended effects. I don't see strands of DNA inside, you see; I interpret it rather more as being the intestinal system. After all, links also exist between your gut and your mental state.

But the strongest association for me, is with Staakman's drowned island. That work measured ten by ten metres; The Head is ten metres high. Instead of a technical toy that moved away from us independently, sinking deep into the dark underworld, we now have a choice of whether we want to tackle the journey upwards on foot. For me, The Head therefore signifies freedom of choice. Do we stay planted firmly on the ground or do we look higher and aim further? •

Hiska Bakker

Historian, journalist and presenter at Studium Generale

**SCIENTISTS**

Sabine Siesling,
Anique Bellos Grob and
Nienke Bosschaart

**WOMEN'S HEALTH PILLAR AT THE UT**

'TO EMPOWER WOMEN THROUGH, KNOWLEDGE AND INNOVATION'

DID YOU KNOW THAT DISEASES MANIFEST DIFFERENTLY IN WOMEN THAN IN MEN, AND THAT FEMALE PATIENTS ARE MORE LIKELY TO HAVE A NEGATIVE REACTION TO MEDICATIONS? IN ORDER TO PROVIDE ADEQUATE CARE FOR WOMEN, A MULTI-DISCIPLINARY GROUP OF RESEARCHERS AT THE UNIVERSITY OF TWENTE HAS FORMED A NEW WOMEN'S HEALTH CLUSTER.

The 'Technologies for Women's Health' pillar at the UT aims to develop technologies for prevention, diagnosis and treatment of diseases that (primarily) affect women. 'We want to support and investigate women's health throughout the life span,' says professor Sabine Siesling, chair of the pillar. 'Our research projects cover diseases specific to women, such as breast cancer and ovarian cancer, but also diseases that occur more often in women, such as osteoporosis. On top of that, we would like to understand why diseases manifest differently in women than men and approach healthcare from women's perspective. Take cardiovascular diseases, for instance. If women get a heart attack, they often get nauseous but that is not considered one of the symptoms and they get improperly diagnosed.'

Women's health has been underrepresented in medical investment, research and innovation, explains Siesling. 'Men form the majority in medical trials, for example. This has led to solutions that do not adequately support women. While women have longer life expectancy than men, they will spend 6-7% longer of their life in ill

health. Women experience higher complication rates. Female patients are 50-75% more likely to have an adverse reaction to medications than men. Women are also diagnosed several years later compared to men.'

More than two dozen UT scientists have therefore joint forces within the new pillar, working on a large variety of projects but all aiming to improve women's health and wellbeing. 'One of our goals – and the research line I work on – is to design new data strategies and technologies for and with women,' says Siesling, who works as a clinical epidemiologist at the UT and at the Netherlands Comprehensive Cancer Organisation (Integraal Kankercentrum Nederland). The main topic of her research is breast cancer. 'I look at variations in care for patients in between different hospitals, and I try to determine the reasons for these variations and whether they influence the outcome – in terms of medical results, as well as the patient's quality of life. I'd like to see if we can use these differences to find out which treatment is best suited and make predictions on outcomes to support more personalization of care.'



*'We can make more progress
in care for and with women'*

'All of these are taboo topics,' says Grob. 'Issues such as fecal incontinence is not something we generally talk about. At the same time, about 40% of all women over seventy years old suffer from one or more of these conditions. Pelvic organ prolapse is mainly caused by pregnancy and vaginal child birth, when the muscles need to stretch tremendously. When the women are young, the tissues recover and surrounding tissue gives support. After menopause, however, all our tissues weaken and that can lead to prolapse. Because it is taboo, women generally don't visit the doctor but they experience a big decrease in quality of life. Just imagine all the things that you suddenly could not do if, let's say, you suffered from fecal incontinence. If you worry that feces might leak out, you will probably not often visit anyone, travel, go swimming or anything else.'

LIMITATIONS

The diagnostics of POP are very limited at the moment. Medical specialists can only apply physical examination while the patient is lying down, but most women experience the biggest problems when standing up. That is why Grob is excited about doing research at the UT. 'We are the only ones in the country with access to a tilting Magnetic Resonance Imaging (MRI) scanner, which allows us to examine the patients in an upright position. This can give us a lot of insight into the prolapse and possible treatment.'

POP can be treated, but – as with the diagnostics – only within limits, explains Grob. 'I have my own outpatient clinic at the ZGT hospital. I tell all my patients that they basically have four options when it comes to treatment of the prolapse. The first option is to do nothing. The prolapse leads to a much lower quality of life, but it will not kill you. You may therefore choose to simply live with your symptoms. The second option is physiotherapy and muscle training. The third option is pessary – a silicon ring, which is placed in the vagina and physically supports it, so it doesn't prolapse. This solution unfortunately only works in about 50% of the cases. The last option is surgery. It is not high risk, but the success rate is low. We have observed 30%-50% recurrence after only two years, meaning that in two years you have a high chance of being where you started.'

At the moment, we can't make good estimates of when the treatments will or will not be successful. Grob's research lines therefore focus on increasing the number of women who can be helped with treatments, especially the pessary, and decreasing the number of recurrences. 'I'm using MRI and ultrasound imaging to find out what can be observed before and after the surgery. Are there some aspects that prevent the surgery to be a lasting success? With another study, we focus on understanding how the pessary actually works. We don't really know how and why a pessary stays in place and how it helps with the symptoms. In all cases, the ring needs to be placed a bit differently and in some cases it works, in others it doesn't. This relates to my third study, which is working towards tailor-made pessaries.'

Acquiring funding for this line of research can be tricky, admits the assistant professor. 'It's a taboo topic, people don't tend to discuss prolapse or fecal incontinence. On top of that, it's not a 'life and death' problem, it's about increasing quality of life for many women,' says Grob. 'That is why I'm glad that the UT has a dedicated pillar for Women's Health. Together we have a unique opportunity to focus on these topics. We are also discovering that many of our research topics might be related. For example, if you breastfeed, it might impact your pelvic floor recovery after labor. If we combine our work, maybe we can find more connections – and attract more funding.'

HELPING WOMEN BREASTFEED

Breastfeeding is indeed one of the other topics researched within the Women's Health pillar. Nienke Bosschaart, Associate Professor in Biomedical Photonic Imaging, has recently obtained an ERC Starting Grant to develop new methods to unravel lactation insufficiency and to help women breastfeed. 'Breastfeeding offers a lot of health benefits for both mothers and babies, but it is also associated with many challenges,' says the UT scientist. 'At this point, we know surprisingly little about what happens during breastfeeding and what causes lactation problems. We just don't have dedicated technologies for this topic.'

*'Because it is taboo, women
generally don't visit the doctor'*

**TO FIND OUT MORE ABOUT THE UT'S
WOMEN'S HEALTH PILLAR AND ALL
ASSOCIATED RESEARCHERS, GO TO:**



Women, specifically mother and child care, have always been at the centre of Bosschaart's research. She has worked on a noninvasive alternative to blood sampling in babies and, in her second main research line, she focuses on human milk and lactation. In a nutshell, her field of expertise is biomedical optics and developing new technologies to support mothers and newborns. 'Optical technologies have a lot of advantages,' she explains. 'They are noninvasive, harmless and give you a lot of information.'

Bosschaart's most recent project looks into lactation insufficiency. 'I see this as a challenge that we really need to solve,' she says. 'Breastfeeding has many advantages. For mothers, it reduces the risk of breast cancer and ovarian cancer. For babies, it boosts their healthy development. The WHO recommends that women exclusively breastfeed for the first six months, but only a minority manages to do that. From a social point of view, there is also a lot of pressure on women to breastfeed, but it is not only up to them. We need to support them much better.'

The most common reason why mothers stop breastfeeding is because they believe they don't produce enough milk. 'My project therefore has two goals,' highlights Bosschaart. 'Measuring how much infants drink and measuring what happens inside the breast - how its physiology regulates the milk supply. In both of these cases, I will use non-invasive optical tools.'

Working within the 'Women's Health' theme is nothing new for any of these scientists, but they appreciate that the pillar was established at the UT. 'We are building a consortium focused on this topic, so that we can make more progress in care for and with women,' says professor Siesling. 'Collaboration gives us more power to achieve our mission: to empower women through knowledge and innovation.'

TABOO TOPICS

Anique Bellos Grob, Assistant Professor in the Multi-Modality Medical Imaging group, is an expert in urogynaecology, which 'essentially involves everything that can go wrong with female pelvic floor'. The focus of her research projects is pelvic organ prolapse (POP), a highly common but generally unknown issue which affects millions of women. Simply put, POP refers to a pelvic floor organ, such as bladder, uterus or bowel, protruding from the opening of the vagina. This leads to many problems, such as urinary incontinence, fecal incontinence, pain during sexual intercourse and more.



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THOMAS GROEN

FEELING AT HOME IN THE LECTURE HALL

WHAT MAKES A GOOD LECTURER? WHERE DOES SOMEONE GET THE PASSION AND INSPIRATION TO PRESENT SOMETIMES DRY MATERIAL IN AN EQUALLY FASCINATING AND UNDERSTANDABLE MANNER? THE 'MEET THE TEACHER' SERIES INTRODUCES YOU TO UT STAFF MEMBERS WHO TRULY LOVE THE WORLD OF EDUCATION. IN THIS EPISODE, MEET THOMAS GROEN, ASSOCIATE PROFESSOR AT THE ITC FACULTY.

Thomas Groen was elected 'Teacher of the Year' by students in the Faculty of Geo-Information Science and Earth Observation (ITC) this year. His award might have come as a surprise to him, but it is very appreciated. The award is sometimes regarded a bit as a popularity contest: the teachers who know how to make education 'fun' are the ones that get thrust into the spotlight. But making education fun is exactly what Groen likes to do, and recognition of this is warmly received.

So what does he think is particularly important when it comes to teaching? His unwritten rule is that the fun things tend to stick in the memory better. And that depends on creating a particular type of atmosphere. A lecture hall should feel like home for the students and there should be plenty of room for asking questions, no matter how 'silly' they might seem to be. Groen isn't someone who thinks that stupid questions don't exist, but he does believe that every student should feel comfortable to ask a potentially stupid question. After all, he believes that the road to understanding is made up of a chain of steps; such a chain is only as strong as its weakest link. Where there is a vulnerability, people run the risk of ending up in trouble if the subject matter becomes more complex down the line.

That is why he encourages asking questions and making mistakes. During lectures, for example, he regularly picks 'volunteers' to come forward. The more mistakes they make, the better. After all, he prefers the mistakes are made during lectures rather than during exams. Above all, what he wants to encourage is a sense of togetherness in the group. He would like to see that one of the curious students in the front row offers help when somebody else is visibly struggling. And he also wants to encourage those students who sit at the back of the room – not attracting any attention and potentially suffering in silence – to participate in the group process. It's not in every body's nature to cross the threshold and take part in a plenary discussion, or even to approach a teacher individually no matter how approachable you are as a teacher.

He finds the diversity of the student population to be an interesting and enjoyable challenge: the various differences in backgrounds, cultures, knowledge, educational systems students come from and personalities. Each individual offers their own perspective. And that is exactly what's important in the ITC Master's Programme in Spatial Engineering, of which Groen is also the Programme Director. Students work on so-called wicked problems which are not preconceived, clearly defined assignments. Wicked problems require to work together and find solutions to almost intangible challenges such as food security and climate change. It is then down to the students, as empathic engineers, to take account of everyone's perspectives and to come up with solutions.

Groen is the first to admit that this programme is not for everyone: particularly those who want to deeply immerse themselves in a specialism should look elsewhere. But he believes that Spatial Engineering is the perfect choice for students who have a helicopter view; those who can bring together different viewpoints, grasp an ongoing overview of matters, and who have the required soft skills to make the link between engineers and non-engineers. This is about more than simply sitting around the table with stakeholders.

The ITC lecturer has also tried to weave his research into what he teaches, especially when it comes to species distribution modelling. Using models, Groen for example tries to predict where you can find disease-carrying insects. Applying research in this way appeals to the imagination of many people, but actually, it is predominantly about statistics. Statistics can be boring, which is why you need appealing examples to give it meaning. Statistics, according to Groen, are not much different from using a hammer. A hammer is a tool that doesn't appeal to the imagination, but is something that is appreciated when you see what you can make using it – in the right hands, of course.

In that respect, Groen believes that education has been too much underrated at Universities for a long time now. Despite having nothing but respect for fellow scientists who are awarded prestigious grants, Groen would like to see this lopsided relationship between research and education rebalanced. He does understand it in part: research is easier to quantify using hard metrics. Good teaching, however, is less easy to quantify. How successful people are and their impact on the world after they graduated can only translate into alumni success stories that you can only find out several years later.

But that is precisely where Groen gets his passion for teaching: educating people who then make the world a little better and more beautiful. For him, it is also about a sense of duty. Students make the effort to sometimes come from many miles away just so they can put their future in your hands. As a teacher, you have a duty to allow people to grow so that once they have graduated, they can begin to leave a positive mark on the world.

And Groen is happy to acknowledge that this cannot always be measured. •

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OUT ON PATROL WITH HEAD OF SECURITY BENNO KIERS

'I'M OFTEN TOLD THAT I COULD BE A LITTLE LESS DIRECT'

AS A MILITARY VETERAN, THE 'YEAH, BUT...' RESPONSE THAT YOU OFTEN HEAR FROM STUDENTS CAN BE A CHALLENGE FOR BENNO KIERS (48). THAT SAID, THE HEAD OF SECURITY HAS FELT AT HOME AT THE UT FOR TEN YEARS NOW. 'PEOPLE LOOK OUT FOR EACH OTHER HERE. THIS WAS SOMETHING I NOTICED WHEN I FELL ILL AND HAD TO STAY HOME.'

Kiers is wearing sunglasses as he starts his tour of the campus. Together with his beard and a clean-shaven head, the shades complete his 'look' as Head of Security. It's the job of him and his team to keep the university safe. His patrol begins at the main entrance, where Kiers takes a moment to pause at The Head, the newest art installation on campus. He casts a glance at this gigantic piece of copper. 'When it was first installed, I stood in the car park for a while and couldn't decide what I thought of it all...' Then he started looking at it from the point of view of a security guard: 'That thing is ten metres high, so you don't want to fall off it. The first weekend alone, we had to remove two students. I thought, this is going to be quite the challenge for us at Security.'

Kiers continues his patrol onwards in the direction of the UT festival grounds. In this post-Covid era, the campus is flooded with events, as it always was, from the Batavierenrace to hardstyle parties. The Head of Security thinks 'it's wonderful that this is all possible again.' 'I'm more of a metal person myself, by the way. I'm going to a festival near my home town of Klazienaveen, in Drenthe, this weekend. Bands come to jam there from all over the world. It's great, man! My 17-year-old son happens to like the same music so he's joining us for the first time this weekend. Music is emotion. It's always played an important part in my

life. I used to play in a metal band – I was a guitarist and singer. My favourite is Jimi Hendrix, although he had nothing to do with metal music. But when it comes to guitar, he was the absolute master. There's a reason my son is called Jimi! And he also plays the guitar. My children are the best thing that's happened to me. They are a little older now and I love seeing how they are developing.'

MILITARY

As well as his son Jimi, Kiers also has a daughter called Manon. When she was born, Kiers talked things over with his wife Elles, and decided it was time to join life on civvy street. Before that, he had been a serviceman for more than eight years. 'I was one of the last to be called up for military service. I eventually ended up working in the Air Force Surveillance Department. I really enjoyed my time there; twice I ended up going on a mission during the war in Yugoslavia. The first time was to support the F16s in Italy. We spent our time at Lake Garda in the height of summer – let's put it this way, it could have been worse! The second time, I had to go to Albania on a helicopter mission. That was a more intense experience and I saw a lot more of the local misery. Going on a mission is a very special experience in your life. You have to look after yourself for six months. It's also incredible to experience the camaraderie of the mission: you do





everything together, from eating, sleeping and working to going out. When you hit it off with people, you end up forming a really close bond with them. I've never experienced anything so strong anywhere else. We still try to organise a reunion for us all on a regular basis.'

After the Air Force, Kiers went on to work as a private security guard. And he also works as an Assistant Business Unit Manager. Kiers explains that it took a while to get used to being a part of civilian life again. 'We treat each other differently in the military than we do in ordinary society. Everything is more direct in the military. Yes means yes, and no means no. I regularly get told now that I could be a little less direct. At the UT, it's a very different culture than working in defence. Here, people will ask you why something isn't allowed. Who decided that? Isn't there a way round it? In fact, that reminds me of a story. A bicycle was once left on campus where it shouldn't have been. As Head of Security, I simply cut the lock and removed it. A few days later, the student who owned the bike came into my room, carrying a law book in his hand. He had come to seek justice. To be honest, I thought it was wonderful that he did this. I refunded his lock, but I also asked him to never leave his bike in that spot again. In the end, he reluctantly agreed to this. I suppose what I'm saying is that it is sometimes good to take a critical look at things. But as an ex-military man, it is sometimes damned hard to take that into account, haha.'

TOLERANCE

Our route takes us in the direction of the student accommodation. It is remarkably quiet in the middle of the day. The only sound that can be heard is of a bird singing. 'With all this lovely weather, the barbecues are sure to be lit again tonight to the sound of music playing,' says Kiers. 'And there's nothing wrong with that. As the Security team, we do have a lot of contact with students. Unfortunately, we often find it is our job to tell them that certain things are just not allowed. Or worse still, we have to submit a report and take further action. Sometimes, I really don't like doing this.' According to the Head of Security, a lot of things are possible and permitted on the campus. However, a rapid growth in student numbers over recent years has placed increased pressure on facilities. 'We're seeing more and more students, which is great. But as a result of that, we also have to make better arrangements. We have tolerated a lot of things on the campus for a long time. But we're now at a point where we can't put up with things any more, otherwise things will really start to go wrong. Think about the fact that students have open fires at the student residences. You just can't do something like that in a residential area.' And there is also something else that worries Kiers. 'Residential thefts from student housing are also a real problem. We have seen a record number of burglaries this year. Students don't always lock their windows and doors and opportunities can turn people into thieves. I find this such a shame, because students have lost their expensive laptops or gaming computers in this way. Perhaps it's to do with social control. Students used to know exactly who was living in their flats, but over recent years this seems to no longer be the case. It's important that if students see anything suspicious, they report it immediately. We can then take action.'

ILLNESS

So enough about student accommodation. Kiers has now turned in the direction of the UT Sports Centre. It has recently become quite an important place for him. 'I try to exercise two or three times a week in the Sports Centre so I can build up my fitness. I have been ill for a long time because of a tumour on my adrenal gland. When I was exercising or moving around, I became more and more tired. I was out of breath going up the stairs in my house. It was mad. It seemed like I had some sort of flu, or at least that's what the doctor said. But I ended up getting worse and worse. First, I was taken into the regional hospital and then finally, thank goodness, I was transferred to UMCG in Groningen. That's where I had an operation. My surgeon had introduced the technology from Australia into the Netherlands. That horrible nagging feeling has disappeared now, and it's all thanks to the operation – I'm so grateful to the medical community.'

His illness largely coincided with the Covid pandemic. 'It was right in the middle of when we were all working from home. So it wasn't that obvious that I was off work. A couple of my colleagues took care of some of my duties. And I'm very grateful to them for that. But you know, people at the UT look out for each other a lot. After the operation, I felt so good that I went on a 30 km bike ride and I began thinking that I could return to work. But my supervisor, an HR manager at the UT, didn't agree with me. In hindsight, that was a good thing. I was prevented from overdoing it and it gave me the chance to recover at my own pace. Meanwhile, things are looking good, although I'm having to put in a lot of effort to get my fitness levels back. It takes time. But it's not surprising since I haven't been able to do anything for a year and a half.'

SHORT FUSES

Although colleagues took care of his responsibilities in part when he was absent and the organisation supported him, Kiers did struggle with his own absence on campus during the pandemic. 'It was a chaotic time. Staff and students were told to stay at home, but as the Security team, we still dealt with lots of issues. As a manager, I found it difficult to not always be there. There were lots of people from outside the campus, for example, who came to play sports and sometimes more people gathered in a group than was permitted. We had to speak to people about this, but we discovered that some people had very short fuses. One of our colleagues asked a group to keep their distance from each other. The group turned out to be a family, which of course our security guard couldn't have immediately known. The mother adopted a particularly lofty tone of voice and said she was not prepared to talk to the security guard until she had congratulated her daughter, who was apparently celebrating her birthday. I don't think that this is how we should treat each other. I honestly hope we don't ever see anything like this period again.'

Meanwhile, our campus tour is almost over. Kiers walks back to the headquarters in the Spiegel, where he is due to hold two annual appraisals with his security guards. 'I worked up a good sweat during the walk – of course, that has everything to do with my level of fitness. Oh well, during the annual appraisals at least my colleagues will know where I'm at right now,' he laughs. •



'A FUTURE WHERE ALL WASTE IS PROPERLY RECYCLED'

'WE HAVE ONE WORLD AND WE SHOULD KEEP IT,' SAY TYRELL PANTOPHLET AND VICTOR OKORO, CO-FOUNDERS OF START-UP PLAEX. THE UT ALUMNI DEVELOPED A SMART RECYCLING BIN WHICH USES ARTIFICIAL INTELLIGENCE TO AUTOMATICALLY SORT WASTE. ITS GOAL: CONTRIBUTING TO A MORE SUSTAINABLE FUTURE.

Throw your trash in and the bin will do the rest. Garby the Garbage Bin, as the young graduates call their waste sorting device, identifies the object and places it into the correct compartment. Recycling made easy. Or as, the company's CEO Tyrell Pantophlet puts it: 'It's not complex, it's PLAEX.'

The two founders came together in 2020 thanks to their joint passion for sustainability. 'We want to promote sustainable transition,' says Pantophlet, graduate of Advanced Technology. 'I'm really bothered by incorrect recycling. I was born in Saint Maarten, where we have a lot of problems with sustainability. There are landfills that are constantly burning, which I really hated. I want to contribute to a future where all waste is properly recycled. I want to create a better tomorrow, so that my kids don't have to suffer.'

'Recycling is a fascinating world,' adds Victor Okoro, PLAEX's CSO who studied Psychology at the UT. 'The more we look into it, the more we see that only a couple of changes can have drastic consequences. What we are doing can have an immense social and environmental impact. Would I choose to co-found another company? Probably not. This is a great thing we are working on.'

OBSTACLES AND ACCOLADES

Garby indeed seems to be working. It recognizes the 'trash', which it then moves into one of the four compartments based on the Dutch waste stream – organic, plastic, paper and residual. All within a few seconds. The functional prototype has brought PLAEX a fair share of success, including an array of prizes such as the Prototyping Award at UT Challenge 2020, CSU Innovation Award 2020 and making it to the Top 5 Ideas at Philips Innovation Awards 2022.

However, despite these accolades and successfully completed pilot studies within companies, the start-up has had difficulties with bringing Garby to the market. 'This was partly due to personal circumstances,' explains Tyrell Pantophlet. 'I was diagnosed with cancer last year and was in treatment for nine months. I'm doing much better now, but this naturally slowed things down.'

This wasn't the only obstacle, though. From the beginning, the start-up aimed to provide services mainly to companies and businesses, as they produce more waste than households. 'Unfortunately, we've learnt that the waste management market is not set up in our favour,' says Okoro. 'At the moment, it is cheaper for companies to only recycle paper and put everything else into residual waste. The financial incentive to get a fully recycled stream was therefore too low and our invention was not useful for the market.'

As of 2023, this could all change. Thanks to new national rules, it will be more attractive for companies in the Netherlands to separate plastic, metal cans, drink cartons and glass waste. 'This should provide a lot more welcoming landscape for our solution,' adds Okoro. 'However, convincing clients that waste separation is a problem that they need to solve is also a challenge. Some organizations just want to involve people and teach them how to separate, but that is not easy. You may indeed ask: why not just throw everything in one bin and separate afterwards? That is not ideal because of cross contamination. The materials come in contact and pollute each other, making it impossible to recycle them. Why not educate people? Even the most educated person will make mistakes and that will inevitably lead to cross contamination. At that point cleaning and recycling of the materials becomes too expensive for companies and the waste gets burned or landfilled.'

'KEEP GOING'

Even though, the journey has been far from easy, the alumni duo is most certainly not ready to quit. 'It has been challenging, but our enthusiasm hasn't faded away,' says the CSO. 'We are exploring different ways to get to the market. We are hoping to acquire a launching customer and raise more funding. We have secured several good collaborations, such as with Oost NL, and we are close to starting a pilot with a large customer. We are ready to move from a prototyping phase to the revenue phase and actually make a change.'

'We have heard a fair amount of 'no' in this process,' says Pantophlet. 'But as I heard in a TED talk recently: when you are going through hell, keep going. Why would you want to stay in hell? I agree. When it feels the hardest, that is when you need to keep going.'

THE HEAD

'If people wouldn't think anything of it, why should I even start with it?' is the credo of artist Joep van Lieshout. He created The Head, the newest artwork on campus. During the 60th Dies Natalis of the UT, the meters-high head was officially unveiled in between the passing storms. From 'a totem for our university tribe' to Squidward from the cartoon *SpongeBob SquarePants*: everyone sees something in the copper statue. The artwork is also 'reviewed' in this Campus Magazine. Columnist Hiska Bakker calls it 'a statue of freedom of choice'. Further on in the magazine, Head of Security Benno Kiers is especially afraid of visitors falling down – after all, The Head can be climbed. In short, the newest work of art makes people express themselves, just as artist Van Lieshout likes to see it. It almost sounds like an invitation. Come to campus, watch The Head from afar, climb it if you will. But above all: think something of it! •



COVID-19 RESEARCH: FROM THE LAB TO THE CLINIC

AS HAS BECOME TRADITIONAL IN THE LATEST YEARS, THE UPCOMING AUTUMN BRINGS THE FEAR OF ANOTHER COVID-19 WAVE. IN SPRING 2020, MANY UT SCIENTISTS DROPPED THEIR USUAL RESEARCH TO FOCUS ON CORONAVIRUS RELATED PROJECTS. HAVE THEIR SOLUTIONS MADE IT TO PRACTICE OR DID THEY NOT LEAVE THE LAB (YET)?

'SOMETIMES INVENTIONS ARE NOT SUCCESSFUL DUE TO POLITICAL AND SOCIAL REASONS'

Ruud Verdaasdonk, Professor of Health Technology Implementation, and lung physiologist Frans de Jongh have worked on quite a list of COVID-19 projects: new types of ventilators, a breathing hood, a modified snorkel mask for COVID-19 patients and a facemask alternative known as the 'beekeeper hat'. While some of their solutions never made it to the clinic – often due to 'either regulations or political reasons', as De Jongh says -, others are available to the public.

RESPIRATORY EQUIPMENT

From the get-go, the UT scientists' projects were driven by the current problems caused by the pandemic. When there was a lack of respiratory equipment in the beginning of the crisis, the researchers investigated how to use one ventilator for two patients at the same time. 'We worked long days and eventually we were able to find a solution,' says Frans de Jongh. 'At the UT TechMed Centre, we had artificial lungs we could use to test anything we needed and we prepared a report for the Intensive Care Association. Our solution worked but we warned it should only be applied in case of emergency because it couldn't be made patient specific. Luckily, the solution didn't need to be applied in the Netherlands, because enough ventilators were supplied by then.'

'Around the same time, there were a lot of companies aiming to design and produce simple ventilators – basically balloons squeezed by artificial hands that press the air out,' adds professor Verdaasdonk. 'Several companies asked us to validate this solution, but by the time we were done testing and had one solution that actually worked well, there was no need for these devices here. However, the company actually sold some of the devices to countries in Africa, where real ventilators are too expensive to use.'

DECATHLON MASK

Their next projects followed a similar path. The scientific duo made prototypes of a 'hood' to support breathing of COVID-19 patients. 'These hoods were being used a lot in Italy, but they didn't export them, since they were all needed there, and so we were essentially trying to replicate their solution,' explains Verdaasdonk. 'We did the full risk assessment and fulfilled all the requirements, but when it was ready for clinic it was not needed anymore. The same goes for the Decathlon mask.'

The 'Decathlon mask', alias a snorkel mask modified into a breathing support for COVID-19 patients, made quite the splash in the national media. The UT scientists developed a prototype ready to be tested on patients. 'But we didn't get the ethical approval, because the mask didn't have a medical certification,' says the professor. 'However, we showed that the mask could also work as protection for health workers. It is air tight. The mask is equipped with a little ventilator that refreshes the air all the time. The ventilator runs on battery that can be easily recharged by the same power bank you use for your phone. I could imagine bringing it to the market in the future, but we'd need to get medical approval which could take years.'

FACE MASKS

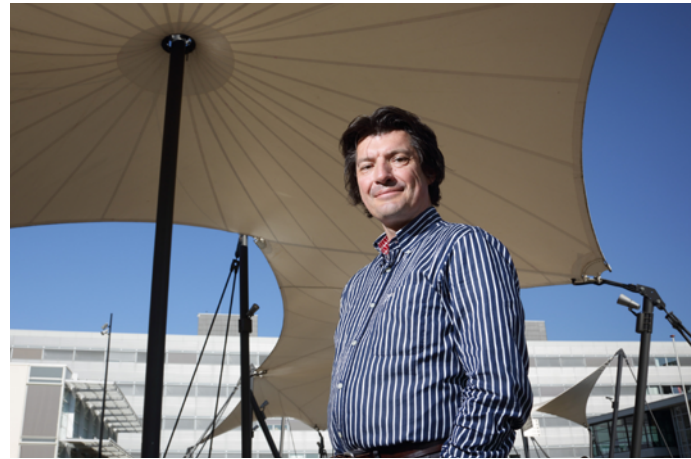
Ruud Verdaasdonk's special face-covering, the 'beekeeper hat', actually made it to the market. It was mass produced and accessible to the general public. 'But there were challenges as well,' says the UT professor. 'We started using the mask with choirs who could use it to practice and sing together. It worked well, but due to regulations they weren't allowed to get together anyway. If they couldn't come together, even with the masks, why would they buy the masks?'

'Sometimes inventions are not successful due to political and social reasons,' adds De Jongh. 'Public wasn't really open to wearing masks. In the Netherlands people simply weren't willing to wear the better and more restrictive masks like in Germany, for example. After our research into effectiveness of masks, we therefore suggested that it was better to ask people to use the simpler masks, which they were more likely to wear. I hope these insights helped to improve the government regulations. We were in media a lot and sometimes media is more powerful than science.' •



Scientists Frans de Jongh (wearing the 'Decathlon' mask) and Ruud Verdaasdonk (wearing the 'beekeeper hat')

'THE RESULTS WILL REALLY HELP TO MAKE HEALTHCARE BETTER'



Richard Boucherie, Professor of Stochastic Operations Research, and his team are experts on healthcare logistics, specifically on models to optimize logistical processes in hospitals and homecare. At the very start of the pandemic, they decided to relocate all capacity and fully focus on issues caused by the corona crisis.

TOOLS FOR HOSPITALS

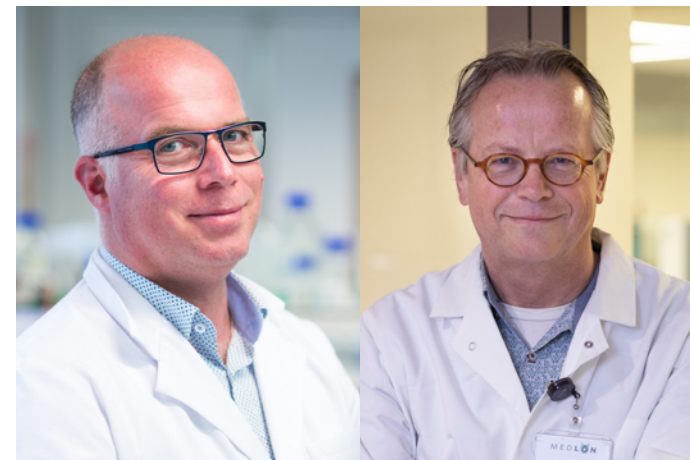
'We developed software and models to optimize appointment schedules for hospitals,' says professor Boucherie. 'For example, Sint Maartenskliniek in Nijmegen used our ideas to optimize their care during the pandemic. One of their key problems was balancing appointments under the 1.5-meter distancing rule. If patients had several appointments a day, they'd often wait in the hospital, resulting in too many people in the waiting rooms. We also built a tool to predict the number of patients hospitalized in the COVID-ICU and other wards a few days ahead of time. This was implemented in several hospital capacity management systems.'

HIGH PRESSURE

All of this was done under very high pressure, stresses Boucherie. 'Hospitals did use our ideas, but not necessarily our software. We wrote papers on our models and scientifically we learnt a lot, but there was simply too much pressure on healthcare organizations to improve their logistical processes while struggling with the daily challenges during this really difficult period. It was very tough on everyone.'

Because of the enormous strain on healthcare, not all solutions developed by the UT team could be applied (yet). 'We also developed a model to restart hospital care during and after the pandemic, which has not been used in full capacity yet, because hospitals devoted all resources to the daily care,' says Boucherie. 'I'm very proud of our team that kept going and helping hospitals. I think the results will really help to make healthcare better, which motivated us a lot. Hospitals didn't have the space to change their software systems, but I hope we will continue these developments to be prepared for the next pandemic.' •

'THIS TECHNIQUE PROVIDES DETAILS ON QUALITY AND TYPE OF ANTIBODIES'



Professor Marcel Karperien and Richard Schasfoort first started working on COVID-19 related research independently. As soon as the novel coronavirus emerged, Schasfoort started working on a test that measures the presence of antibodies and therefore determines the exact stage of the disease. At the same time, professor Marcel Karperien's team was developing a test for measuring immune response of severely ill COVID-19 patients. As their work was closely related, the two UT scientists soon decided to join forces.

'We have been working on using surface plasmon resonance (SPR) for detection and profiling of COVID-19 antibodies in patients,' says Schasfoort, researcher at the Medical Cell BioPhysics group. 'And we have been quite successful. We have used this technology

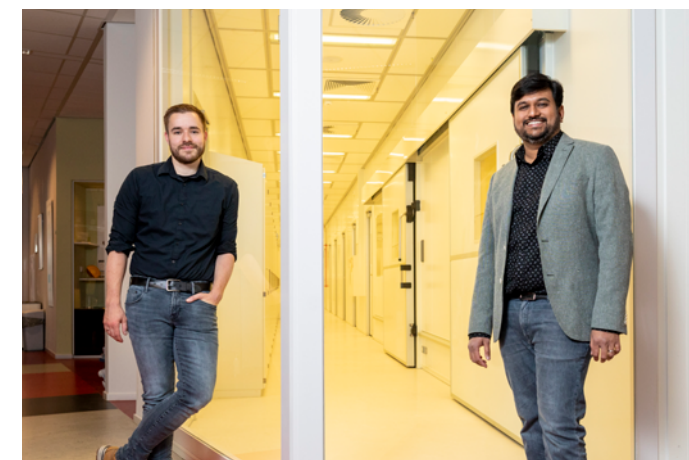
to get a lot of data and we have been able to detect antibodies affinity. There is no other technique that can do it as well as ours.'

CLINICAL DEVICE

'We have collaborated with MST, which allowed us to collect data from COVID-19 patients since the start of the pandemic. We have discovered that critically ill patients have a lot of antibodies, but of low quality,' explains professor Karperien. 'We were able to introduce SPR to hospitals for the first time. We have shown that using this technique is possible and reproducible. It could be developed into a new measuring technique which could be useful in context of other diseases as well. We have obtained powerful data that allow us to move forward with this. We can demonstrate that this technique provides details on quality and type of antibodies, information that we cannot get with any other method.'

The scientists are currently working on a clinical SPR device to be used in hospitals. 'It is in development and we have asked for subsidy to be able to continue with that,' says Schasfoort. 'However, once that is available, this pandemic will be over. We can of course use this method for the future pandemics. We will definitely continue with the development of this instrument for the clinic. We were able to write three papers on the topic and we have shown that we can measure patient samples – and that the technique can be used for other diseases than COVID-19.' •

'IT PUSHED US FORWARD'



During the very first lockdown in 2020, (now former) UT researchers Pepijn Beekman and Dilu Mathew came up with an ambitious plan: to develop a fast (corona)virus detection system that shows results within a few minutes and that can be used at airports, festivals and other locations where people gather. And they aimed

to have it on the market within one year. They were confident that they could use their patented nanosensor, originally intended for detection of cancer biomarkers, for detection of viruses.

PANDORA'S BOX

Realization of this plan has come with a few challenges. 'Starting this project was a bit like opening a pandora's box. We took three steps forward and two steps back,' says Dilu Mathew, who – just like his colleague Beekman – is now fully focused on their start-up ECsens and no longer works at the UT. 'We have a partner in Hengelo, a high-tech biosensing lab, where we need to run our measurements. That means our measurement system needs to be taken to their lab. However, our usual setup is huge and cannot be transported. It therefore needs to be scaled down. That has been a challenge for us. Essentially we had to develop a new system from scratch and there have been many logistical problems along the way.'

'It is a technical challenge, indeed,' adds Pepijn Beekman. 'We would love to run the measurements in our facility at the UT, but that is not allowed. We naturally can't bring infectious samples to the university. We are considering starting our own lab, but that would require a big investment. Another challenge has been getting enough people to help us in the lab. Recruiting has certainly been a hurdle, but we have recently acquired substantial funding, and so we are confident we can soon get more people and move faster. Our project is progressing, and we're dealing with these challenges one at a time. It was crazy ambitious to begin with.'

GOOD OPPORTUNITY

Despite these obstacles, the scientists don't regret switching gears and moving towards coronavirus research. 'It has been a good opportunity for us,' says Beekman. 'It allowed us to go through all the steps of bringing an invention to the market. We now have a prototype that is much closer to a real product than anything in an academic lab. We are confident in our results and want to run the measurements this year.'

'It was still a nice opportunity,' agrees Mathew. 'It pushed us forward. We now have a scalable system and we aim to use it also for other pathogens and other viruses than only COVID-19.' •



ESPORTS TEAM TAKES GAMING A STEP FURTHER

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THE UT HAS MASSES OF CLUBS, ASSOCIATIONS AND SOCIETIES. THIS COLUMN THROWS THE SPOTLIGHT ON SOME OF THEM. THIS TIME, WE'RE TAKING A LOOK AT ESPORTS TEAM TWENTE, WHO WANT TO MAKE GAMING MORE PROFESSIONAL. THE ASSOCIATION IS EVEN LINKED TO A MINOR. 'IN FOOTBALL, THERE ARE THOUSANDS OF STRATEGIES OUT THERE, BUT THERE HAS BEEN RELATIVELY LITTLE RESEARCH CARRIED OUT ON GAMING.'

The Chair of Esports Team Twente, their Research Manager and a top gamer come together to talk about their association. The team has several rooms that are located on the third floor of the Bastille. There's one large room, but also smaller spaces that lead directly into other rooms and behind the last door, the trio sits around a table bearing several computer screens.

TOP-LEVEL SPORTS STATUS

Developing esports as professionally as possible, in conjunction with the university: according to Ivo Jeeninga (21), Chair of the team, this is the association's most important goal. The fact that esports has now gained top-level sports status at the UT has therefore been a major triumph. 'That's great news for us and something we should celebrate. A top-level sports status means a top player can access many more opportunities to become better.'

Esports is a young sport. So that means there are plenty of opportunities for growth. And growth, according to the team, can only be achieved through good research. Jeeninga: 'In football, there are thousands of strategies and tactics out there. But relatively little research has been done on gaming. We want to change that. We are the only student team in the Netherlands that conducts research and relates it to a UT minor.' He is referring to the Esports minor taught by Assistant Professor Guido Bruinsma.

DATA ANALYSIS

Jennifer Schulze (24) is particularly interested in the development of esports. She is the Research Manager for the association and she focuses on areas that can be improved for gamers. 'We want to know how both individual gamers and teams can improve. We look at the things that can be analysed within the games themselves, but also in the behaviour of the gamer. Does the person communicate clearly? Where and how do they train? What is the best thing to eat before gaming? Does a physical warm-up make a difference? We are trying to carry out data analysis to look at this.'

Someone who has benefited from this within Esports Team Twente is Finn Tempelaar (21). Although he is rather more modest about his role, Chair Jeeninga describes him as the club's standard bearer. Tempelaar is a member of the League of Legends team. This is a very popular game on the international stage, which sees groups of usually five players compete against each other, trying to beat their opponent. Tempelaar: 'In the Netherlands, we almost always come out on top, and we are also doing well on a European level. For me as a player, research into esports has added an extra dimension to gaming. I would like to delve further into that, so I share as much of my life as possible: my routine, how I eat, exercise and game. It is a common misapprehension that to become good at gaming, you have

to spend hours doing it every day and night. We'd like to demonstrate how you can become good at gaming, but also integrate it into your life in the right way.'

FC TWENTE

The team from Twente excels in League of Legends, but also plays numerous other games. Tempelaar: 'Counter-Strike, for example, where we have a partnership with the Marine Corps. With this, we demonstrate how we can communicate with each other as efficiently as possible. We gave a demo on that at the Invictus Games last year.' Jeeninga goes on to give an even more famous example. 'We also play the football game FIFA, and our team is FC Twente, of course.'

Esports Team Twente, or ETT for short, has only existed for two years, making it the youngest student team at the UT. Generally speaking, the team has similar activities to Blueshell Esports, but Jeeninga says there is a subtle difference: 'At Blueshell, the focus is on gaming in general, but we prefer the focus to be on gaming in competitions. The dividing lines are sometimes a bit blurred, but we want to take gaming a step further. All of our players take part in gaming tournaments. For people who like gaming but are less driven to do it professionally, Blueshell is the right club.'

Gamers are subject to a lot of stereotypes: unhealthy people, slumped in their desk chairs, consuming nothing but pizza, chocolate bars, coffee and energy drinks. These are prejudices that, at first glance, don't match up with the reality of the esports team. The three team members sit sipping large cups of tea during the interview and on the refrigerator, there is a bottle of beetroot juice.

Schulze has also focused in on nutritional aspects when researching gaming. 'Caffeine can improve gaming performance, but an athlete needs to think about protein, because this is a top sport. Feeding your brain is even more important in esports than feeding your muscles. Top-level gaming primarily takes place on a mental level and less so on a physical level. Hand-eye coordination is the main skill required, along with a good reaction time. That is where you make the difference.'

Jeeninga hopes that the team will be able to progress over the coming years. As he well knows, the gaming industry is now bigger than the film industry, so developments can follow on from each other in quick succession. 'We're very much looking forward to the arrival of the Esports Lounge. We can then finally organise more events and show everyone what we've been up to. That's something we'd really like to happen because the pandemic has diluted face-to-face gaming culture a bit.' •

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CHRISTY AIKHORIN

'WOMEN ARE A FORCE OF CHANGE'

IT TOOK A NEAR-DEATH EXPERIENCE FOR CHRISTY AIKHORIN TO FULLY REALISE HER PASSION. AFTER HER 'BEAUTIFUL CRISIS', THE UT ALUMNA STOPPED A SUCCESSFUL CAREER AS A CHEMICAL ENGINEER AND PROJECT MANAGER AND, INSTEAD, STARTED FOCUSING ON SUSTAINABILITY AND GENDER EQUALITY. SHE IS NOW THE NETHERLANDS' DIRECTOR OF 'WOMEN ENGAGE FOR A COMMON FUTURE' (WECF), AN INTERNATIONAL NGO DEDICATED TO A GENDER JUST AND HEALTHY PLANET.

Running a non-profit organization was certainly not the plan when Christy Aikhorin arrived at the University of Twente in 2003 to study Chemical Engineering. 'This is a very new journey for me,' she says, while giving a tour of WECF's Netherlands office. It's a practical, unassuming space tucked right in the heart of Utrecht. And it is one of many worldwide. The network consists of over 150 women's and civil society organisations in 50 countries. 'In short, we believe that women are a force of change and need to be included at all levels of policy and decision making,' explains Aikhorin, who joined the NGO in March 2022.

FROM NIGERIA TO TWENTE (AND BACK AGAIN)

The path to her new role as a director – *'although I'd say I steer more than I direct'* –, was far from straightforward and lined with coincidences (or faith, depending on your philosophical bent). Christy Aikhorin grew up in Nigeria and studied in South Africa, where she accidentally saw a poster promoting the UT. 'I chose to come to the Netherlands simply because I wanted to explore Europe. I didn't fully realize where I was going until I was on the train from Schiphol to Enschede. It felt like I was leaving civilization,' she says with a laugh. 'The UT is in its own secluded space, which I came to love. It was the first time I was surrounded by so many different cultures. It was like a melting pot of nationalities.'

During her Master studies in Twente, the alumna did an internship at Shell, where she worked on liquified natural gas research.

When asked if she'd liked to stay on in the company, she refused. 'I didn't want to be a tiny speck in this giant running machine. I didn't feel that I could contribute enough,' says Aikhorin. She embarked on her own journey, first in Nigeria and later back in the Netherlands. 'I switched from engineering to project management because I wanted to work with people and see the bigger picture. For many years, it was a wonderful time.' Until unexpected events interfered.

SLOW DOWN

In 2015, Christy Aikhorin's world changed. Her appendix ruptured, causing serious health problems and forcing her to stay home for several months. Having a 'real downtime' allowed her to look into the topic of renewable energy. 'This woke me up,' she says. 'Before my crisis, I was working on projects that, to put it nicely, were not sustainable. Suddenly I was thinking: what am I doing? Why am I contributing to burning of oil and gas? At that point, I saw the other side of technologies I had been working with.'

Knowing that she wanted to do something more aligned with her values and personal convictions – and not wanting to wait for someone to give her a job –, the alumna 'created her own space'. She founded UnikBlends, a slow clothing brand that combines her love for colours, sustainability and Africa. 'But I would not call myself an entrepreneur,' she adds quickly. 'Or maybe a reluctant entrepreneur.' Christy Aikhorin sees UnikBlends as a social enterprise, which aims to educate people about the dangers of fast fashion. 'After oil and gas, fashion is the second most polluting sector,' she stresses.

'I really liked the idea of creating something new out of something old. If you go to a Nigerian wedding, ladies wear this fancy headgear called 'gele'. But once you wear it, you should not wear it to the next wedding. By the time you are forty, you might have a room full of these headgears. I hire women to use old fabric from 'geles' and turn them into new functional pieces. Like these earrings I'm wearing!' She points to the pink accessory that doesn't even remotely resemble a used piece of fabric. 'The fabric was pressed and solidified,' she adds in explanation. With UnikBlends, Aikhorin also provides workshops and training to victims of human trafficking. 'We help them get vocational skills, so they can hopefully find a decent job later.'

ALMA MATER

Even though she is not actively using the chemical engineering knowledge that she acquired at the University of Twente, her alma mater has played a big role in Aikhorin's work and life. 'Being on campus was an amazing experience. It was the first time that I took walks in a forest. Until then, forest was something I could not be bothered with – definitely not without an experienced nature guide. Here, I could just go there, think, reflect. Twente is where I fell in love with nature.' It was also where she met the man she'd later fall in love with. 'I met my husband on campus. In the corridor! He was visiting because of his PhD research. We became friends and our friendship later turned into a marriage proposal.'

COVID CRISIS

'Another crisis!' the alumna answers the question of how she eventually ended up at WECF. 'Covid brought me here. Crisis is a beautiful opportunity to re-evaluate yourself and your situation.' Aikhorin did exactly that. 'I was working long hours and was approaching a burnout. It was madness. You need time to think and reflect, the time to ask why things are the way they are and Covid provided me the downtime to do just this. I took courses, I read books, and also got engaged in a number of NGO's. Slowing down is a part of sustainability. We are human beings, not human doings. We should be just able to 'be'. I truly believe in the power of independent thinking. The quality of your thinking influences the quality of life. And good quality of life – that is sustainability.'

'Upon reflection, I realized that it was mainly women who gave me positive energy and encouraged me to do the impossible,' says the alumna. 'I didn't get that same level of creativity and enthusiasm while working with male engineers. And at one moment, the WECF vacancy popped up on my screen.' She'd never heard about the organisation before but it spoke volumes to her. 'I saw a lot of problems such as poverty, unemployment, climate change, modern-day slavery and mental health issues that could not be solved with technology alone. Many societal issues stem from inequality and I see WECF as an opportunity to close the gap.'

WOMEN ENGAGE FOR A COMMON FUTURE

According to WECF, sustainable development and gender equality go hand in hand. 'I didn't fully realize the connection of gender and climate change until I started working here. Sustainable future truly requires feminist solutions. We are really committed to creating a healthy and gender-just world for everyone,' Aikhorin highlights the main purpose of WECF. The non-profit network is involved in policy advocacy, providing recommendations to governments as well as the UN. It's also active in capacity building in renewable energy solutions in the Global South and Eastern Europe.

'We believe women should be more involved at all levels and we facilitate their voices,' says the director. 'Take war or a similar humanitarian crises. After the fighting is done, it will be women who are left and need to rebuild. Yet, they were not involved in any critical decision making. Women need to participate and be heard.'

*'We are human beings,
not human doings'*

'IT'S A MAN'S WORLD'

Christy Aikhorin has experienced gender inequality herself. 'When I worked in engineering, I recognized how underrepresented women were. The higher I climbed on the career ladder, the less women I saw. Sometimes I was the only woman at the table and I felt how lonely it was, but it also felt like the norm. We live in a man's world and we have become so gender blind that we don't see it anymore. I wanted to be surrounded by women who remind me that I'm wonderful and unique.'

And so the alumna co-founded SheSustains, a platform focused on women sharing stories that matter for personal, professional and business development. 'It does something to you when you know others have your back. Having this community has cheered me on.'

Thanks to this support and Christy Aikhorin's willingness to walk the paths less taken, she is now excited to guide the Dutch branch of WECF. 'Where I am now, it is a beautiful opportunity and I'm really committed to it. I want to act as a bridge that connects generations and continents while closing the gap between academia – where technology is developed -, policy makers and practical application by cultivating spaces for multidisciplinary engagement. Because everyone is part of the solution. Can WECF solve all the problems? Absolutely not. Can we contribute? Yes! And that is what I always wanted to do.' •

TRUTH AND FACT

The academic year is starting again and brings with it a new season of scientific education and research! Meanwhile, scientists have different opinions on what it is that they actually do. Minister Dijkgraaf, a brilliant former scientist, sees science as the most proven way to discover the truth, and regards scientists as people who bring the facts. Whether this is the case perhaps remains to be seen, but first let's enjoy a short story.

In our country, we have little respect for famous Dutch scientists. Think about Hendrik Casimir, who was an eminent 20th century Dutch physicist. Near Zwolle, there is a dirt track bearing his name: the Professor Casimirweg. A dirt track! I discovered this when I once cycled in a straight line (or as straight as possible) from Enschede to Nuenen and I ended up crossing over it.

I believed this for a long time, but is all of the story true? Yes, I did take that bike ride. And you may have to look hard, but Zwolle is roughly in line with the Enschede to Nuenen route, and Hendrik Casimir was a famous physicist. Our respect for famous Dutch scientists does seem to have diminished recently, but what possessed the former municipality of Eibergen (because it was them who were responsible for the deed) to name a dirt track after Casimir?

I took some time to look into this. The word 'dirt track' was specifically chosen to strengthen the meaning behind my story. I could also have called it a 'quiet country road', which would have sounded very different. And anyway, who is this Professor Casimir? I only know of one, and that is Hendrik the physicist. His story lives within my bookcase, as part of my book bubble. In his autobiography Haphazard Reality – Half a Century of Science (Het toeval van de werkelijkheid), he doesn't even mention Eibergen, Groenlo or Zwolle. So what does Wikipedia say then? Also nothing. But hey, Hendrik's father Rommert was a professor as well, in pedagogy. It's fair to say that I'm less familiar with pedagogy than physics, but Rommert also appears to be well-known enough to warrant his own Wikipedia page. 'He spent the famine struck winter of 1944-45 in his country



house of De Holterhoek near Groenlo. There, he taught students from closed minor seminaries, who were in hiding, mainly farmer's sons...' So there you go, perhaps the riddle is solved, because the hamlet of De Holterhoek borders the hamlet of Zwolle. Rommert did good work helping people who were hiding out in this remote corner of the Achterhoek. At the time, the road ran – and still does run – right past the house; the 67-year-old white-bearded scholar must have been seen walking there regularly. The notion of him walking is from my imagination, but there are eyewitness accounts of that white beard. It's possible that people in the region spoke with awe of 'Professor Casimir' and certainly not of 'Rommert'. So naming that road after him now seems to be a respectful gesture, and one which exonerates the former municipality of Eibergen. And now perhaps I'll have to change my story.

Back to the Minister. I would actually make the somewhat bold assertion that when we use the words 'fact' or 'truth', we always mean a description resulting from a complex mishmash of – hold tight, it's a long list! – prior knowledge, prejudices, preferences, opinions, goals, hopes, models, hypotheses, observations, analyses, self-criticism and more. Good science is all about making these things explicit and removing as much subjectivity as possible. A fact, however, does still remain a provisional description and therefore open to vulnerabilities, while the truth is something we are perpetually moving towards. The brilliant thing is that we, as scientists, can disagree over this and yet still continue to make progress. Let's make this a great academic year! •

Wiendelt Steenbergen
Professor of Biomedical Photonic Imaging



AMMONIA:

'A TRUMP CARD FOR THE ENERGY TRANSITION PROCESS'

During his internship as a Chemical Technology student at Danish company Haldor Topsøe, UT PhD researcher Kevin Rouwenhorst realised the many opportunities offered by ammonia. At the moment, it is principally used to manufacture artificial fertiliser and therefore has a bad name. But ammonia is also one of seven chemicals that form the basis of all chemical products, and it helps to feed around 50% of the world's population.

Ammonia – NH₃ – as a compound of hydrogen and nitrogen, is an ideal carrier of energy, particularly hydrogen. Rouwenhorst, under the supervision of Louis van der Ham, wanted to investigate this concept during his final research project in the town where he was born, Haaksbergen. Would the village in Twente be able to abandon fossil fuel and only use energy generated by wind turbines, solar panels and sustainably produced ammonia?

The thesis gave him an appetite for more. He came across a PhD position with the S&T research group Catalytic Processes and Materials. Over the past four years he has specifically focused on plasma-enhanced catalytic ammonia synthesis under the supervision of Leon Lefferts. 'Around 80% of our air is made up of nitrogen. This nitrogen has to be broken up during the process in order to create ammonia,' explains Rouwenhorst. 'To this end, you need a catalytic agent. But the connections are so strong that you need industrial temperatures of between 400 and 500 degrees Celsius. Plasma helps to realise the same process at temperatures of between 200 and 300 degrees Celsius.'

But, as is so often the case in science, the route to the final destination is anything but straightforward. This was soon realised by the PhD candidate. 'In practice, the process was not the best option for converting nitrogen to ammonia. But the plasma process did seem to be useful for other applications, such as the production of nitric acid, which is also used in the manufacturing of artificial fertiliser.'

These experiments on a small scale, in the laboratory, are one thing. But Rouwenhorst has found developments outside these walls to be far more interesting. Or, rather, it is the combination that really appeals to him. 'I'm fascinated by the translation from fundamental science to the scale of enormous chemical factories. And also how

people will respond to this type of development.' That is why Rouwenhorst is not only a PhD candidate; he is also working for the Ammonia Energy Association and is an Innovation Engineer for the company Proton Ventures. 'It helps to view developments from various perspectives. I am energised by the combination of doing something that is useful and also realistic.'

And that is precisely what has been going on over the past few years. Rouwenhorst adds that there has been technology for producing renewable ammonia on an industrial scale since 1920. 'But the focus diminished and more recently only a handful of scientists have maintained their faith in the concept.' But the tide has turned in the past few years. 'At the moment, factories on a gigawatt-scale are being built to run on renewable ammonia at numerous locations around the world. According to the International Renewable Energy Agency, ammonia is the cheapest option for transporting hydrogen across continents. Also, if you have hydrogen, you can make ammonia and vice versa. Ammonia can therefore function as a carrier of hydrogen. Moreover, the shipping industry views ammonia as the primary option for cleaner fuel.'

This would mean that the world would need far more ammonia. According to a recent report that Rouwenhorst wrote, we could need four times as much by 2050. And this must involve the lowest possible levels of CO₂. If this succeeds, Rouwenhorst believes – on the basis of a 'scrap of paper' calculation – that global CO₂ emissions could be reduced by 5% simply as a result of the broader usage of ammonia. It then immediately becomes a trump card within the energy transition.

Nevertheless, he hesitates to say that ammonia is a genuine holy grail. 'You must focus on the added value for both mankind and nature. Within continents, for example, it may be more beneficial to use the existing gas network to produce hydrogen.' His thesis demonstrated this too. In the end, Haaksbergen was not the ideal environment for a complete conversion to renewable ammonia. 'But, during my PhD, I worked alongside Victor Sagel and Jimmy Faria on similar research in Curaçao, where there is a lot more wind. There, it is potentially a useful solution. But, even with respect to the climate crisis, you have to be realistic and consider the local context. Otherwise you might lose sight of your goal.' •

UT'ERS ON THE MOVE



2019

VINCENT VERHAGEN

Vincent Verhagen, who graduated from the UT in 2019 in European Studies, took on the role of Manager IT Change & Service Management for JustEatTakeaway.com/Thuis-bezorgd.nl in April 2022. Verhagen previously worked as a Team Leader of Pre-U at the University of Twente, as a Project Leader at Concordia and as a Customer Relationship Management Consultant for the Municipality of Enschede. •



2018

AMIT DAS

Amit Das has been working at FrieslandCampina as an Internal Control Specialist since May 2022. Das completed his Master's degree in Business Information Technology in 2018 at UT. He specialised in Data Science and Business. After his Master's degree at UT, Das worked as a System Engineer for Tata Consultancy Services, a Data Analyst at La Place Restaurants and a SAP GRC Consultant for KPMG Netherlands. •



2017

PIA LOEPER

As of April 2022, Pia Loeper has been working for Airbus Defence and Space as a Supply Officer in Supply Management. Airbus Defence and Space is responsible for defence and space travel products and services. Before this, Loeper worked for about a year at Gorillas as a Commercial Operations Analyst and Inventory Controller. In 2017, she graduated from the University of Twente in International Business Administration. Since then she has completed her Master's degree in Business Administration at the University of Vienna. •



2016

SVENJA POLST

Svenja Polst has become a User Researcher at Siemens Healthineers in Erlangen (Germany) as of May 2022. Polst graduated in Psychology in 2016, then completed a (Pre-) Master in Communication Science and Marketing & Communication. Before the graduate started working at Siemens, she worked for six years at Fraunhofer IESE. Alongside her work, Svenja also offers an online course on creating surveys on an e-learning platform. •



2016

MARTIJN HOOGESTEGER

Martijn Hoogesteger became Head of Cyber Security at S-RM as of March 2022. They help customers respond to cyber attacks, strengthen their resilience to cyber threats and make strategic decisions. Hoogesteger is now setting up the Dutch branch of S-RM. As well as S-RM, the graduate can also be seen on television as a digital detective in the programme Hunted. Hoogesteger completed a Bachelor's and Master's degree in Computer Science at UT, and then worked for six years at cyber security firm Northwave. •



2008

JAN-WILLEM OOSTERBROEK

Jan-Willem Oosterbroek, who graduated in 2008 from the UT in European Studies, started working for the Ministry of Infrastructure and Water Management as a Strategic Adviser in May 2022. In this role, he develops strategy with respect to the circular economy in order to contribute towards a more sustainable and liveable world. The graduate has previously worked for the Netherlands Enterprise Agency as an International Business Strategic Adviser and Business Development Coordinator for South Korea/Taiwan, and at the CBI as a Programme Manager. •



2006

PAVAN CHILUKURI

As of May 2022, Pavan Chilukuri has become Head of CCUS for Holcim. He is thus bringing to an end his eight-year tenure as the Director of Decarbonization at Shell. Pavan studied Chemical Engineering at UT from 2004 to 2006. Pavan has also worked for Shell as a Consultant, as a Business Development Manager for Behr Process Corporation in California and as a Business Solutions Engineer at Foster Wheeler Energy in China and in the United Kingdom. •



2003

LISETTE VAN LITH

Lisette van Lith has been working as the Chief Commercial Officer at lamFluidics since May 2022. Prior to that, she worked as the Chief Commercial Officer at Bambi Medical. Van Lith graduated in 2003 from the UT in Industrial Engineering & Management. She then completed the Darling Management Development Program at the TIAS School for Business and Society. Van Lith has gained a great deal of experience in various roles with different companies. These include Corbion, Rousselot and LyondellBasell. •

THIS WAS THE ALUMNI DAY 2022

A TOUR OF THE CAMPUS, SITTING IN THE LECTURE HALL OF THE WAAIER AND HAVING A DRINK IN THE VESTINGBAR WITH FORMER FELLOW STUDENTS. SOME THREE HUNDRED ALUMNI REMEMBERED WHAT IT WAS LIKE TO BE STUDENTS AGAIN DURING THE ALUMNI DAY HELD ON 21 MAY 2022.

The day was organised to mark the 60th anniversary of the University of Twente. From all corners of the Netherlands, and even further afield, alumni travelled for a day full of lectures, tours and, of course, student-like fun. They were welcomed to the campus with a tasty lunch. A special THT lunch was organised for the graduates of Twente Polytechnic Institute and took place in the Atrium of the TechMed Centre. These pioneers of the university were able to easily meet up with each other and look back together on those very first years of the UT.

The day then kicked off with a plenary session with University President Vinod Subramaniam, who had just enough time to welcome alumni before boarding a plane to San Francisco where he was due to visit UT alumni. Peter Timmerman, director of Studium Generale, then enthralled his audience by discussing the history and development of the UT campus, while university professors Albert van den Berg, Peter-Paul Verbeek and Vice-Chair of the Student Union, Godelieve Brasz, led a panel discussion. Camiel Lemmens of Solar Team Twente 2021 also took the floor to share with the alumni about how they won their race in Morocco.

After the plenary section, there was a choice to be made. Various interesting lectures on UT research areas such as membrane technology, needle-free injections and robotics were on offer, as well as the option to take a guided tour of the campus and the History Collection. Some of the most popular choices were the lecture on 'Risk Management and Algorithms' by UT professor Mariëlle Stoelinga and a tour of the simulation centre within the TechMed Centre.

Various study associations also attended the campus, providing alumni with the opportunity to see if their old association's room still looked the same. Stress, Arago and Isaac Newton, among others, were present, as well as Scintilla, Abacus and Inter-Actief, who even decided to organise joint drinks in the Abscint. By the end of the afternoon, the Alumni Day programme came to an end and the alumni had migrated to the sunny terrace of the Vestingbar to enjoy a final talk.

COME TO ALUMNI TALKS ON 7 OCTOBER 2022!

Friday 7 October 2022 is the date set for the fifth edition of Alumni Talks: an anniversary edition! During this annual event, leading alumni will take the stage in the atmospheric Amphitheater to tell graduates and students about their careers and their thoughts on the future of their field. And it goes without saying that there will be a traditional informal end to the day in the Vestingbar.

Previous speakers have included Cees Links, Ank Bijleveld, Jonathan Bennink and Peter Riezebos. The line-up for the next edition is still in progress. So make sure you follow us on social media!

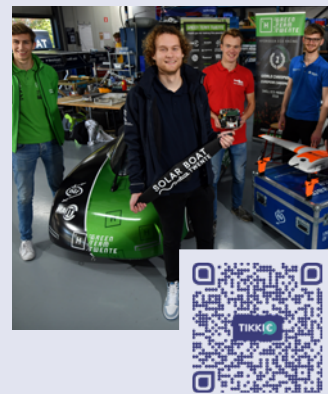
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SUPPORT OUR ANNUAL CAMPAIGN 2022!
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WATER LAB

Donate for clean water without pharmaceutical residues
Professor Wiebe de Vos



FUTURE FACTORY

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Team leaders student teams



KIPAJI SCHOLARSHIP

Donate towards talent in developing countries
Alonso Martinez, Chemical Engineering student



FIRST GENERATION FUND

Donate towards equal opportunities for all students
Sterre Mkatini, Diversity, Equity & Inclusion Officer

40

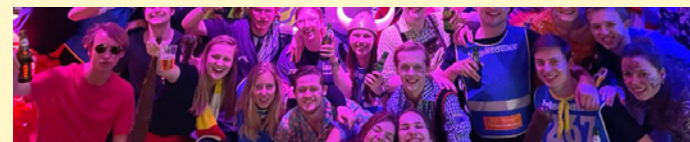
POWERED BY UNIVERSITY FUND TWENTE



Kronos – Campusloop 2022. On Wednesday 6 April, 16 runners opted for the 3 km, 99 for the 5 km and 47 for the 10 km routes. The winning team 'Wij zijn zwemmen' ('We are swimming') missed the medal ceremony; they were in the pool. •



The Sky is the Limit. To celebrate the end of the Covid-19 crisis, six former managers of the Isaac Newton study association organised a huge festival on Twente Airfield. Seven hundred students enjoyed different artists in Hangar 11 •



Student Union – Board Weekend. In February, the Student Union united 130 board members from the 150 or so associations for a meet-up in Brabant. After a pub quiz, the following day included various training courses, workshops and board-sharing sessions in order to exchange expertise and experiences. •

INCLUDE THE UNIVERSITY IN YOUR WILL

Even when you are no longer around, you could benefit future generations at the University of Twente. By leaving a gift to the University Fund in your will, you will enable new generations of students to flourish and our research to provide a valuable contribution to society. Considering leaving money to the University Fund in your will? We would be happy to discuss the possibilities with you. •

For more information: www.utwente.nl/en/universityfoundation/donate-folder/leaveagiftinyourwill/

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PETRA DE WEERD SUPPORTS FIRST GENERATION FUND

On 17 May, professor Petra de Weerd left the UT after 35 years. As of 1 June, she works as the Dean of the Faculty of Science at the Open University. As a parting gift, she asked for a donation to the First Generation Fund. This Fund supports students who are the first in their families to go to university. She was a first generation student herself and thus understands the challenges that this can bring. Women and girls in technical study areas, in particular, are and will remain an important focus area, in De Weerd's opinion. 'That is why I think a donation to the Fund set up by Mirjam Bult [UT alumna and former Executive Board member] is an appealing and suitable leaving gift.' Thanks to De Weerd's gift, the Fund received around €1,200. And you can still donate. •



JEROEN WISSINK (U-NEEDLE) WINS VAN DEN KROONENBERG AWARD 2022

This year, serial entrepreneur Jeroen Wissink was awarded the annual Van den Kroonenberg Award during the final of the UT Challenge on 16 June. Wissink graduated in 1997 in Electrical Engineering/Nanotechnology. He is the founder and was the CEO of Medspray, is the co-founder of Nanomi and is also the current CEO of U-Needle. He has shown excellent entrepreneurial skills in all of these businesses. Within these companies he has also provided substantial support, as a customer, to the development of the MESA+ Nanolab and the UT High Tech Factory. The award is also intended to value this aspect of his entrepreneurship.

U-Needle produces micro-needles that are used for therapeutic vaccinations but also for vaccinations against viruses. At the moment, U-Needle sells options on licences to use the needles for specific market segments. The customers therefore buy the right to use the product exclusively. U-Needle is thus bridging the time that is required for scaling up production capacity with the help of investors.

The Van den Kroonenberg Award honours the former Rector Magnificus Harry van den Kroonenberg. He was there at the birth of the 'entrepreneurial university'. The prize is intended to be awarded for excellent and proven successful entrepreneurship. •

NEW BOARD MEMBER TWENTE UNIVERSITY FUND



MIREILLE KINKET (CT'98)

Director IQ BLVD

Mireille Kinket studied Chemical Science & Engineering at the UT. After a career in education (HU University of Applied Sciences Utrecht), business (Unilever, Corus), government (Province of Overijssel) and civil society (Nature and Environment), she spent seven years as the director of the Polymer Science Park in Zwolle. Now, she is the director of IQ BLVD in Hardenberg, an expertise and innovation centre where entrepreneurs can join forces; she also has several supervisory roles. Sustainability and diversity policy are her focus areas. 'I left the UT many years ago but I am delighted to be coming back to the Netherland's most entrepreneurial university.' •

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The Twente University Fund has officially been classified as a charity by the Tax Administration. The Foundation has been given the status of ANBI (Public Benefit Organisation, PBO). This means that donations to the fund are tax deductible under certain conditions. Visit our website at www.utwente.nl/ufonds for more information.

Contact:

Maurice Essers, director:
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ARMAĞAN KARAHANOĞLU,
Assistant Professor in Interaction Design,
Faculty of Engineering Technology.



HÈLA VAN RIJSSEN-KLACZYNSKI
Projects Officer for Project Management, Analysis and
Monitoring (PAM) within the department of Strategy and Policy.



'WE WON'T GET ANYWHERE JUST BY RECYCLING CUPS'

WHAT DOES 'SHAPING 2030' MEAN FOR THE STAFF OF THE UNIVERSITY OF TWENTE? IN A SERIES OF DOUBLE INTERVIEWS, TWO PROFESSIONALS SIT DOWN TO TALK TO EACH OTHER ABOUT THAT. WHERE DO THEIR ACTIVITIES OVERLAP? HOW DO THEY DIFFER? WHAT CAN ONE LEARN FROM THE OTHER AND VICE VERSA? IN THIS EDITION: PROJECTS OFFICER HÈLA VAN RIJSSEN-KLACZYNSKI AND ASSISTANT PROFESSOR ARMAĞAN KARAHANOĞLU.

Hèla: 'First, it is lovely to meet you. On your profile page, I read that you come from Turkey. Could you tell me a little about your background and how you ended up in Twente?'

Armağan: 'Lovely to meet you too! But be warned, I sometimes talk too much so if I go on for too long, please feel free to interrupt. I was born and raised in Turkey. I studied Industrial Design at the Middle East Technical University, one of the better universities in the country. My Master's degree and PhD then followed, in the same field. In the meantime, I had also spent a short period in Delft and a year in the United States. After my PhD, I felt it was time to leave Turkey. I saw a vacancy at the University of Twente which sounded like it had been written for me. Then things moved really quickly. I have been working here since 2017.'

Hèla: 'You saw the vacancy, but did you know anything about Twente? And what were your first impressions?'

Armağan: 'I was familiar with the campus in Delft but I didn't know much about Twente. I arrived on the hottest day of the summer, during the Kick-In. I was very impressed right away; I thought it was always cold and rained in this area. My first working day was in February. At that time, the weather was cold, grey and wintry. Among the expats around me, I find

that the weather is often the biggest stumbling block in another country. I also noticed immediate cultural differences between the Netherlands and Turkey. That was quite a shock to begin with. I didn't know anybody here and I came here by myself. Nevertheless, I soon got used to things and settled into Enschede fairly quickly.'

Hèla: 'That's good to hear. What were the biggest cultural differences for you?'

Armağan: 'The directness of Dutch people. I thought I was direct but it's nothing when I compare myself to the Dutch. In the first few months, it was hard to judge: was someone being direct or just rude? But I soon got used to it. The freedom at the university also took a little getting used to but I find it harder to talk about that. I left Turkey just after the Turkish coup. So much changed in such a short period of time. Turkish universities had certain standards, but that all changed. You couldn't leave the country and there were all sorts of obligations and that's not ideal for the academic setting. I really value the freedom that you have here.'

Hèla: 'I can imagine. Would you like to go back to Turkey?'

Armağan: 'No. To begin with, I thought I would go back after two years in the Netherlands but I am so used to the freedom of expression here that I would find it extremely difficult to return. I have also applied for Dutch citizenship and can speak the language pretty well. I would still like to improve my language skills though. But enough about me. I'd like to know more about you. How did you end up at the UT?'

Hèla: 'In 1997, I was working as a secretary in the department where I am now the Projects Officer. I have worked in various departments and studied law along the way. This gave me an opportunity to make the move. I made a lateral move and became an intermediary for the Executive Board to the University Council. I am very curious by nature and I suddenly all kinds of things were landing on my desk. Over the years, I discovered that I needed to make a change every four or five years. I cannot work on automatic pilot and like to be thinking about my next move. In the end, I became the Projects Officer for Strategy and Policy. It's a fantastic role which allows me to write policy recommendations and also coordinate projects. I am also the Secretary for the UT Prizes and Awards Committee and take part in the Lifelong Learning team, focusing on which types of people we can use on a broader basis. In short, I am always learning and have been given enormous opportunities to help people.'

Armağan: 'That's a great career! And the projects that you work on, are they all university-wide?'

Hèla: 'Yes, they are. It also all fits within Shaping 2030. I really value that. I actually wanted to make this step fifteen years ago but, at that time, the UT wasn't ready for it. Now, things are different and roles overlap much more easily.'

CHANGE

Armağan: 'I only have a perspective of five years, half of which were dominated by a pandemic, but what changes have you seen at the UT in the past 25 years?'

Hèla: 'When I arrived, the UT was much smaller and it was also very hierarchical. I still respect the people in the more senior roles but there is a clear difference compared to back then. At that time, the professors were at the top and the support staff were below them. The Executive Board didn't speak to you; their doors were closed and you had to knock before you went in. That's really changed now and I see the changes as very positive. They also fit into the aims of the UT, towards 2030. The last two UT strategies were much more focused on our continued survival. The international trajectory that UT is implementing, for example, with English as the primary language had a huge impact. Simultaneously, I think that an organisation such as the UT must continuously adapt in order to maintain its position.'



Armağan: 'I can relate to two things in your story. I have never experienced that hierarchy between professors and lecturers. I always just walk in. That is one of the aspects that I really value. Things were very different when I was a student in Turkey. When I started in Twente, the study programme that I taught changed to English. There was a great deal of discussion about the change. "Why should we do it in English? Almost everyone is Dutch. Will we lose expertise if we translate everything?" Now, I don't sense that resistance at all.'

Hèla: 'It helps, of course, that young people are growing up with much more English around them as a result of films, games and their general environment.'

Armağan: 'I guess the UT will never stop changing. Look at Covid, how quickly we were able to adapt. Now, we can go back to normal and we are changing all over again. We are always in transition and thinking about what to continue doing and what to stop. I think that we will always find a pathway together at the UT.'

Hèla: 'I completely agree. That's why it is important to always listen to the students. If, for example, they would rather listen to a lecture at a time that suits them, why would you not offer this as an option? Then, you can come to the campus for collective lessons and projects. This also offers a solution to the lack of capacity. The opinions of students must always be taken into account. And we must check what our surrounding environment expects from us too. Even if Shaping 2030 is not the target: look to the region, to society itself. What do they need and how can we work towards it? We can do it!'

SUSTAINABILITY

Hèla: 'It's just occurred to me that I don't know much about your work as an Assistant Professor. What does your work involve?'

Armağan: 'My work is not as broad as yours but I also work in all sorts of areas. I give lectures within Industrial Design and Engineering. Innovative products are part of our lives but how people use them is just as important. In Interaction Design, we look at things like how we can better shape the interaction between product and user. How flexible, interactive and responsible is a particular product? I focus on the human side of this equation.'

Hèla: 'That sounds interesting. I guess sustainability plays a huge role in it too.'

Armağan: 'It certainly does. How can you avoid a product just being thrown in the bin? These are interesting subjects but sustainability is a tricky topic. If you want to work on your own individual health, you eat less sugar, do more exercise and immediately notice the changes. If you wish to do the same for the environment, you won't see an immediate result because it is a slow and difficult process. That is why I think we need better strategies so that people can see that we need to make changes quickly. And that this is a problem for the whole of society. There is still so much work to be done in this regard.'

Hèla: 'How do you think the UT could help?'

Armağan: 'More collaboration between various departments. As many research groups as possible working on topics relating to sustainability but also meeting and discussing how we wish to position UT. This is vital in the context of Shaping 2030, but there is a risk that we will focus on achieving something by 2030 when, in reality, we have to achieve things much sooner.'

Hèla: 'I totally agree, but even if we all work together we still need time. The Shaping Expert Group Sustainability is doing amazing things and bringing about genuine change. At the same

time, we can always do more. And visibility is also extremely important. Making sure everyone sees what we're doing. We won't get anywhere just by recycling cups.'

FINALLY...

Hèla: 'It's been really interesting finding out so much about you in such a short period of time. We do completely different things but on a professional level, we have a great deal in common.'

Armağan: 'I completely agree! I think we both do a lot of organising and are both engaged with a wide range of people, even though we work in different settings. But I'd also like to know what you do in your free time?'

Hèla: 'Of course! I have two big dogs and I love to play frisbee with them. At the weekends, I love to walk and also do embroidery. That's a hobby I learnt from my mother. I really enjoy both activities and they help me to relax and empty my head. What do you like to do when you're not working?'

Armağan: 'I absolutely love running. I trained this summer for the Berlin marathon. I have also run marathons in Amsterdam, Enschede and Frankfurt. So, I do a lot of training and, as a result, have got to know the Twente region really well.'

MORE STORIES

You can find more double interviews with various members of the UT community in the previous editions of Campus and online.

You can read more stories here:

www.utwente.nl/our-story



OUR OFFER



TACKLING GLOBAL PROBLEMS AT LOCAL, NATIONAL AND INTERNATIONAL LEVEL

The challenges society faces today are complex and far-reaching. More than ever, they call for the collaboration of many different, complementary stakeholders. At ECIU University, of which University of Twente is a partner, our vision is to help solve these complex challenges and make society futureproof by collaborating at local, national and international levels.

In order to realise this, ECIU University and University of Twente adopt a new approach to research, learning and innovation. We bring together students and scientists with government, businesses and citizens to identify urgent, definable problems across all societal domains, from transport and mobility to the energy transition or a smart circular economy. We then form international, multidisciplinary teams

and help to solve complex societal problems through a challenge-based approach. Do you work for a public or private organisation and would you like to make an active contribution to this new learning programme? Then we are looking for you! Marike Boertien (Novel-T, University of Twente): 'We see challenges as an opportunity to build long-term relations within our ecosystem. Students, researchers and stakeholders working together to solve a challenge is a powerful mix of creativity and innovation and we hope you want to join us.'



We would definitely like to get in touch with you as a challenge provider



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- 12 connected regional ecosystems of universities, businesses and civic society
- 12 partners offering countless combinations of education, research & innovation opportunities
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OUR OFFER

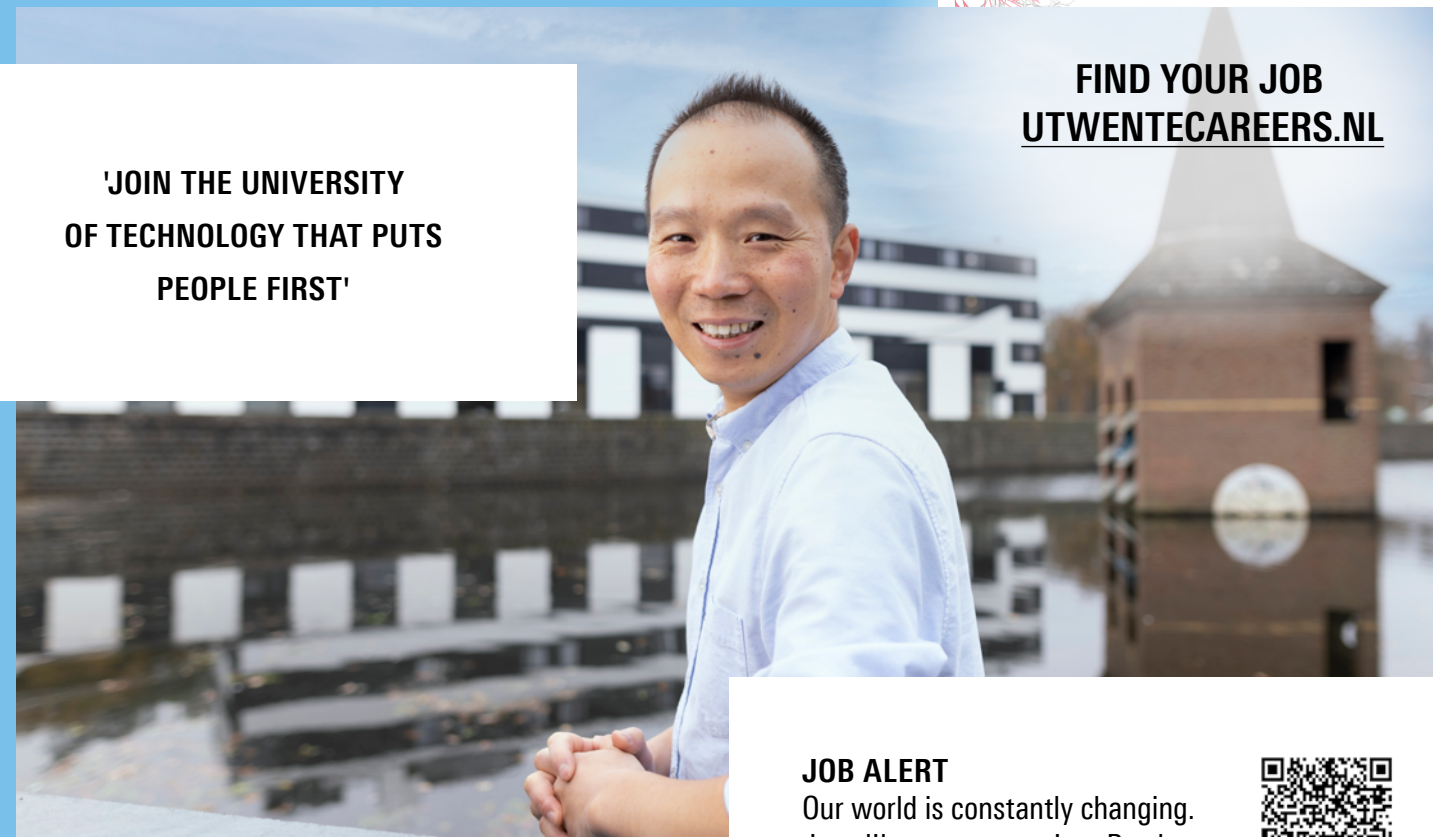
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