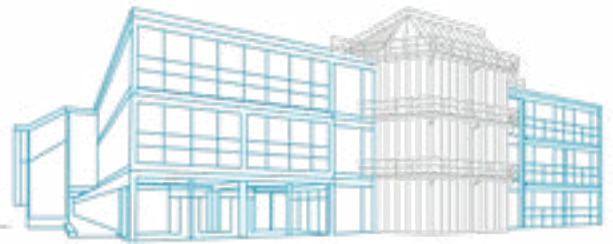


UNIVERSITY OF TWENTE.



CONTENTS

Cover image: Gijs van Ouwerkerk



4 DOSSIER Gravitation programme brings philosopher and engineer together	18 ENTREPRENEURSHIP Switching between skills	34 ON CAMPUS Prominent player in the field of medical technology
8 IN BRIEF	20 INTO THE LAB	38 DEPARTURE POINT TWENTE Vice President at Dell
10 PHD RESEARCH Preventing falls	22 DREAM & DEED Never done learning in Brussels	40 STUDENT HOUSE A glorious view and a great atmosphere
12 FUND NEWS Making a difference	25 BUSINESS SCHOOL PLD	42 MY JOB Energy from efficiency improvements
14 INTERVIEW EDUCATION UT lecturer of the year	26 IN BRIEF	44 SPIN-OFF Injections with bubbles
16 ACTIVE STUDENT	28 ALUMNI NEWS	
	30 FUND NEWS	
	32 WHERE YOU THERE?	

FIRST OF ALL

“People-first technology” was the theme of our 58th dies celebration. People first and technology second, it said. That certainly goes for the Technical Medical Centre, which our King opened that day. When developing new technology, we want to listen to people and to society as a whole: what do they need? Not that long ago, there was a machine developer from Twente, Robin Koops, who asked himself: “what do I need?” He has diabetes and decided to develop an artificial pancreas. He was not deterred by the physicians who laughed in his face. Now, fifteen years later, his device is almost ready for market – all thanks to his perseverance and a regional ecosystem that includes the University of Twente and its spin-offs. Robin Koops was recently elected as a “national icon.”

“People first” is most evident in the healthcare sector. For example, I was impressed by the story told by Petra Hes during the dies celebration. She suffered a stroke at the young age of seventeen. She got her quality of life back as a result of not only the rehabilitation robot that was developed at the UT, but also because of her powerful will. She has now dedicated her life to helping other patients. Another growing development is asking citizens to actively participate in research and help us make our choices. This is known as “citizen science.”

With regard to the second pillar of research, that of digitisation and connected communities, we also realise that the human dimension is important. There are myriad technical challenges before us, for example with regard to cyber-security and questions such as who owns the data we make available? Is this transparent enough?

If you think that all this makes for a very strong focus on people and that science should rather be about developing useful technology to benefit society, I would agree entirely. That is why protecting our planet and therefore protecting future generations is one of our new fields of research.

As Robbert Dijkgraaf said recently, science is “the most systematic way of understanding the world, people and our own thought processes.” Even a people-first approach raises such research questions. Lastly, let’s not forget we conduct this research in communities – in “the last reserves of the optimists,” as Dijkgraaf calls them. Science requires optimism and there are plenty of reasons to be optimistic. ●

“PEOPLE FIRST AND TECHNOLOGY SECOND, IT SAID”



SINCE 25 NOVEMBER 2016, **THOM PALSTRA** HAS BEEN RECTOR MAGNIFICUS OF THE UNIVERSITY OF TWENTE.

GRAVITATION PROGRAMME BRINGS PHILOSOPHER AND ENGINEER TOGETHER

New technology does not only represent progress; it also leads to new ethical and social questions. The Gravitation programme “Ethics of Socially Disruptive Technologies,” lead by UT professor Philip Brey, is working on better methods for responsible and sustainable innovations. “We are training a new generation of researchers.” BY Marco Krijnsen



NEW
TECHNOLOGY
CREATES
ETHICAL
DILEMMAS



As a result of the rapid development of technology, a growing number of scientists are currently focusing on the ethical side of innovations. The new Gravitation programme that Brey supervises has colleagues from Twente, Delft, Utrecht, Eindhoven, Wageningen and Leiden working together. The Ministry of Education, Culture and Science has made 17.9 million euros available to fund the ten-year programme. This is the first programme concerning philosophy to receive a contribution from the Gravitation programme. The programme was born out of the 4TU Centre for Ethics and Technology that was founded by the four technical universities. In addition to scientific colleagues from other universities, businesses are now also taking part in the consortium. Among the industrial partners are Philips, Google, IBM and the Netherlands Oil and Gas Exploration and Production Association.

The ethical side of biotechnology, the impact of the internet on our society, the risks of new technologies to the climate or our health, the dangers of social media to democracy. John de Mol suing Facebook for fake ads.

The current public debate makes it clear that the innovations of the past twenty years have a downside as well. What is and is not allowed? How far can a business or the government go? "Politicians and businesses do not have all the answers to the questions that new technologies raise," says Philip Brey, professor of philosophy and the ethics of technology. "Innovations may lead to a clash of values. Privacy versus security or sustainability versus freedom. These are not only ethical but also political

choices. We want to clarify and direct these issues. It is then up to the politicians to make the right choices."

"These past years, our field was mainly focused on applications and solving various concrete problems for policy makers and businesses. Think of e.g. how to garner more social support for sustainable energy or how to utilise big data in a responsible manner for the well-being of employees. There is not enough coherence between the various research projects. That is where our new programme comes in. The multidisciplinary collaboration of the scientists involved in the programme has to result in the necessary deepening over the coming years."

Ethics committees

The central belief of the Gravitation programme is that new technology impacts our values and standards. The focus on sustainability, for example, is a response to the growing use of fossil fuels as a result of new innovations, says Bray. "Many people don't know this, but the whole concept of privacy was only developed in the nineteenth century after the introduction of cameras and binoculars. We are therefore looking at how ethical concepts change or should change as a result of the introduction of new technology. We are also studying how innovations impact the distinction between man and animal or man and robot."



THE VALUE OF EMOTIONS

How does technology impact our representative democracy? What other notions in our society need to be reconsidered? The Gravitation programme's "The future of a free and fair society" research line will focus on such questions in the years to come.

Sabine Roeser, professor of ethics at Delft University of Technology and one of the coordinators of the research line, sees the tension between our current democratic system and new technology. "Think of the use of geoengineering as a solution to climate change. In doing so, you make a choice that will impact future generations for the next century. At the same time, our administrative system has a short-term focus and relies on elections held every four years. We will have to revise this system, but how? How do we substantiate our democracy?"

In the past, Roeser conducted research into the misunderstanding of moral dimensions and emotions during the development and implementation of technology. "The notion of emotions is still limited. There should be a stronger focus on concerned citizens. Emotions should not be seen as a hindrance, but rather as a source of insight. Administrators have a tendency to say that people do not understand all the facts. Perhaps the reverse is true, however. Perhaps these administrators and technology developers do not account for the value of emotions enough."

Roeser hopes that the Gravitation programme will have another effect as well. "Philosophy of technology is a relatively new research field, especially outside the Netherlands. When I started my career eighteen years ago, traditional philosophers did not view it as real philosophy. It is high time for them to start thinking more about the implications of technology for our field."

"The multidisciplinary collaboration of the scientists involved in the programme has to result in the necessary deepening over the coming years"



More than ever, the industrial sector is aware of the ethical impact of an innovation. They have no choice. Concerned citizens and governments will make sure of that by complaining to the IT giants of the 21st century about privacy violations and threats to our democracy. Businesses are therefore forming ethics committees, appointing ethics officers and formulating strategies with regard to corporate responsibility. The ethical aspect is also being incorporated more and more into the ISO standards for businesses.

Killer robots

In light of this development, a large insurance company approached Brey's research group in Twente to explore the responsible use of its insured clients' data. This concerns the combining of data pertaining to e.g. clients' medical history and household effects for commercial purposes. Brey: "An insurance company wants to play it safe and desires guidelines that govern the use of certain data. The last thing they want is a scandal." Another current research theme has to do with autonomous weapon systems, the so-called killer robots. Brey: "Should we or should we not allow a robotic system to independently identify its targets and use lethal force? This problem has to do with responsibility. Many people believe only members of the military

should be allowed to make such life-or-death decisions, not a machine. How can we introduce the necessary degree of meaningful human control? As ethicists, we were asked to give our recommendations."

Redesigning humankind

According to Brey, our society is currently going through a crucial period. Key technologies that were developed in the second half of the previous century, such as biomedical technology, IT, nanotechnology, neurotechnology and new materials, are becoming increasingly integrated. Think of e.g. brain-computer interfaces and nanomedicine. "We are working to redesign humankind. People are getting different bodies and minds. At the same time, mankind's environment is also changing. Everything is becoming a technical artefact; we can even control our climate these days. This far-reaching technologisation raises myriad new ethical challenges and concerns."

Ethicist and engineer

The Gravitation programme brings three fields together: the ethics of technology, ethics and philosophy in a broad sense and the technical sciences. The collaboration with the technical scientists is mainly focused on the integration of ethics into the technical design process. This should happen sooner rather



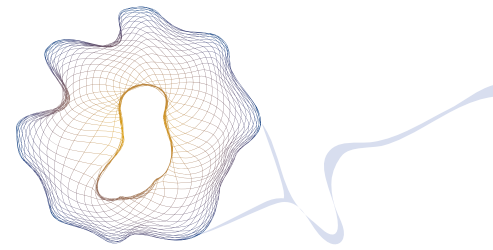
than later, Brey believes. That is, during the very first stage of the design process. "Twenty years ago, ethics did not come into play until after products were placed on store shelves. That is too late, however. At that stage, implementing any changes will require a ton of money and effort. It is better to tackle this issue early on: have ethicists and engineers sit down together at an early stage to avoid problems altogether, instead of fixing them later."

Brey does not find it surprising that the UT plays a leading role in the Gravitation programme. "Twente has a tradition of collaboration between philosophers and technicians. Just look at our unique Philosophy of Science, Technology and Society master's programme that has been around for more than twenty-five years. Many of our students completed a technical bachelor's programme before choosing a philosophical master's programme."

"Twenty years ago, ethics did not come into play until after products were placed on store shelves. That is too late, however"

INNOVATION

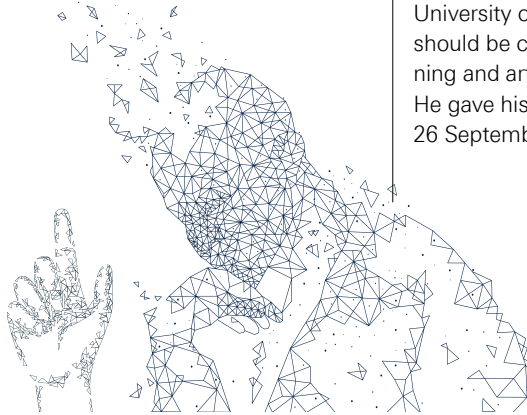
IN BRIEF



BE CAREFUL WITH MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

Johannes Schmidt-Hieber (34), the youngest professor working at the University of Twente, warns that we should be careful with machine learning and artificial intelligence (AI). He gave his speech on Thursday 26 September.

He admits that the possibilities are amazing, but also believes that AI cannot solve all our problems. "Our expectations of the future of AI are too positive. Scientists have to manage these expectations better," says Schmidt-Hieber. The mathematics professor from Twente analyses the theoretical properties of machine learning and is part of the expert group for the Netherlands' national AI strategy.



ABRUPT ENDING FOR SOLAR TEAM TWENTE

For three days, Solar Team Twente was racing at the head of the pack in the Bridgestone World Solar Challenge, held from 13 to 20 October in Australia, when its car, Red E, was hit by a strong cross wind that pushed it off the road and caused it to flip upside down. The accident abruptly killed any hope the solar team from Twente had of winning the title. Driver Evert van der Hoek was unharmed. The solar-powered car was unable to reach the finish line on its own.

To conclude the team's grand ad-

venture in suitable fashion, the Red E did drive across the finish line in Adelaide on the final day of the race. The team was met with loud cheering and applause. "Our feelings are mixed; we didn't officially complete the race, but it did feel good to drive across the finish line," race leader Annelies Dekker said. "Afterwards, everyone sprinted to the fountain as hard as we could. Despite everything that happened, that was a great way to end this adventure."



ECSENS WINS 4TU CHALLENGE

This past November, ECsens won the 4TU Impact Challenge.

The start-up develops highly sensitive sensors that are used to more quickly diagnose cancer. The goal is to offer every patient a tailor-made treatment. "We had to seize this opportunity," says Pepijn Beekman, who founded the company together with fellow researcher Dilu Mathew. "It is amazing that we pulled it off."

Next year, the winners, along with representatives from the Ministry of Foreign Affairs and a number of businesses, will go on a trade mission to the World Expo in Dubai.

UNIQUE INNOVATION PROGRAMME FOR EATHLETES

The eDivisie and the University of Twente have launched a unique innovation programme to improve the performances of eAthletes. The football gamers of Feyenoord and Heracles Almelo took part in the pilot. In a special lab on campus, the project members are working to improve reaction times, insight, stress levels and spatial awareness, among other things. The first measurement session was held on Wednesday 30 October. With this project, the UT and the Eredivisie are exploring new ground in the field of combining eSports and science.



VICTOR VAN DER CHIJS PASSES ON 4TU CHAIRMANSHIP

This past November, Victor van der Chijs, president of the University of Twente's Executive Board, passed on the chairmanship of the 4TU.



Federation to Louise O. Fresco, chairwoman of the board at Wageningen University & Research (WUR). 4TU is the cooperative alliance between the four technical universities in the Netherlands. Van der Chijs has worked hard to improve and bring together technical expertise in this country. "The 4TU has become a close-knit federation and I am proud to have been part of that. Training a sufficient number of top-quality technicians will continue to be a daunting task in the future. I have no doubt that Louise will do her very best to achieve that goal," says Van der Chijs.



UT ONCE AGAIN IN SECOND PLACE IN HIGHER EDUCATION GUIDE

According to the Higher Education Guide 2020, which was published in November, the UT is once again the second-best university in the Netherlands. With six top programmes and an average score of 68.5, the UT is second only to Wageningen University & Research. The score of 68.5 is one point higher than the UT's score in last year's Higher Education Guide. Besides the higher average rating, the UT does have fewer "top programmes." This year, there are six programmes with a total score

of 76 points or higher, compared to eight in last year's Guide. None of the UT's study programmes received a failing grade. The UT bachelor's programmes Applied Physics (90), Communication Studies (80), University College ATLAS (80), Industrial Engineering and Management (78), International Business Administration (76) and Chemical Technology (76) were all awarded the title of "top programme."

Applied Physics is actually in joint second place out of all university

study programmes in the Netherlands that were assessed for this edition of the Guide.

Another notable fact is the number of social-science programmes that earn high scores in the Guide. Half of the UT's top programmes are part of the BMS faculty. The UT's Psychology programme improved its score from 56 to 70 points, making it the best psychology programme in the Netherlands, according to the Higher Education Guide.



More information about these items can be found at www.utwente.nl/en

“For many people, losing the ability to ride their bike is a real sacrifice”

PREVENTING FALLS

Dutch people love to ride their bikes. Even people over sixty still like to use their bike: it is good for their health, mobility and quality of life. However, the elderly are more prone to falling and getting injured while cycling. Carola Engbers researched whether technology can make cycling safer and more comfortable for the elderly. In September, she was the fiftieth doctoral candidate at Roessingh Research & Development. BY Frederike Krommendijk PHOTOGRAPHY Frans Nikkels

50TH DOCTORAL CANDIDATE AT ROESSINGH RESEARCH & DEVELOPMENT

Carola loves to ride her bike. The great thing about her doctoral research was that it concerned a socially relevant topic. She obtained her bachelor's degree in psychology at the University of Twente and her master's degree in Groningen. "A lot of research had already been conducted into how to make driving a car safer, but very little was known about technical solutions to improve the safety of cyclists. I just happened upon this topic for my doctoral research. Almost everyone in my environment knew someone who had had an accident with their bike. It is a pressing concern," Engbers explains.

Keep cycling

In September, she obtained her PhD with her doctoral thesis "Keep Cycling, how technology can support safe and comfortable cycling for older adults." For one of the studies, more than eight hundred people over 65 filled out a survey, which enabled her to determine the most common causes of accidents. From these data, she identified the factors that play a role in a self-reporting fall. The result? Elderly people living in rural environments are more likely to fall off their bicycle. Other factors include reduced self-confidence, mental limitations and advanced age. "For example, we discovered that safety is not only about physical factors that have an inhibiting effect, but that it is also about mental aspects. If you feel comfortable on your bike, this may contribute to a more comfortable riding experience and fewer accidents."

From displays to LED lights

Technology can lend a helping hand to improve people's self-confidence. "My role as psychologist was not to develop technology, but to determi-

ne what people need, how they felt about technology and how it affected their mental workload. The technology was developed by TNO and/or Indes and we conducted many experiments in collaboration with the University of Groningen." A test group of elderly people tried out the new inventions, from displays to LED lights and vibration signals. "They started out on a bike on a stand in a lab environment, before moving to a relatively quiet test location. This was done to ensure the testers' safety."

Rear-view assistant

The rear-view assistant, which issues a warning when someone is behind you, was highly appreciated. "You could achieve the same effect with mirrors, but the target audience does not always find those practical. They are not very useful on bumpy roads, in the dark or in fog. Mirrors can also get in the way when you are trying to park your bike and they can break if your bike falls over. Furthermore, elderly people do not like to use such mirrors because everyone will know they need assistance to ride their bike."

Various warning systems for the rear-view assistants were tested, including a display and a light signal on the handlebars. Beforehand, hardly anyone indicated that a vibration might be an effective warning system. In practice, however, that proved to be the solution most people preferred. "If the system issues a vibrating signal via your seat whenever someone approaches from behind, you'll feel it right away. You do not have to pay attention to anything else and there is nothing to distract you, which can make for a safer ride."

Grateful

The technology still needs to be

developed further, but Engbers already sees various possible applications. "It can not only be used to help the elderly, but also people who e.g. have trouble sticking out their arm." It was clear from the many responses she got during and after her doctoral research that she had picked out a socially relevant topic. "People were truly grateful. Almost every week, people would ask me if the system was available yet and where they could order theirs. For many people, losing the ability to ride their bike is a real sacrifice. I interviewed some people who were no longer able to cycle for health-related reasons and they all felt it was a real loss. The bicycle is more than a means of getting around; it also gives people a sense of independence and freedom."

"If the system issues a vibrating signal via your seat whenever someone approaches from behind, you'll feel it right away"

Socially relevant

These days, Carola's work concerns the treatment and reintegration of people who have lost their jobs because of personal injuries or absenteeism. "Once again, it is clear that having a job means much more to people than simply getting paid at the end of the month. That feeling of independence and being part of society is just as important." It is not surprising that she is once again working on a socially relevant theme. "It suits me. I want my work to truly matter. My choice for the UT was partially inspired by the fact that the research conducted in Enschede is often application-oriented. I was also drawn to the small-scale nature of the campus."

Your donation to the Twente University Fund can make a real difference for a student or alumnus, as well as for the university and the region. For these four board members, that is the main reason behind everything they do for the fund. BY **Marco Krijnsen** PHOTOGRAPHY **Gijs van Ouwerkerk**

HELPING TO MAKE A DIFFERENCE



GÉ KLEIN WOLTERINK

UT ALUMNUS ELECTRICAL ENGINEERING
| INDEPENDENT CONSULTANT HEALTH-
CARE & IT | BOARD MEMBER OF THE
TWENTE UNIVERSITY FUND SINCE 1993

THE IMPACT OF A STUDY TOUR

“During my studies at the UT, I personally benefited from the University Fund. For example, we got funding for our study tour to Brazil. That trip left an enormous impact on myself and my fellow students. We visited twenty to thirty local businesses. This is part of the reason why I ended up working in international sales at Akzo Nobel after my graduation. I spent twenty years with that company. During my studies, I was a member

of sailing club Euros and study association Stress. We received support from the Fund to organise activities. For me, these activities were just as important as my actual studies. I want the same thing for today’s students. They should be able to develop themselves at the UT. That was one of the main reasons why I joined the University Fund’s board. I now serve as the jury chairman for the Marina van Damme Scholarship, among other things.”

FOR THE STUDENT FROM NEPAL

“The fund was established in 1948. Our goal has remained the same all those years: supporting the university. The manner in which we do that changes over time. The fund has financed many unique chairs. We also facilitate a large number of cultural and athletic activities on campus, as well as scientific conventions.

The fund also acts as an intermediary for private persons and businesses who support the UT with named funds. One of them is the Kipaji Scholarship Fund, which supports talented engineering students in countries with emerging economies. I love being involved in the process of selecting these students and talking to them. One example is the student from Nepal who is working on renewable energy. These are invariably smart and highly motivated people for whom I love to go to bat. Our hope is that the things they learn here in Twente will ultimately benefit their native country.”



ILONKA DE BEER

UT ALUMNUS INDUSTRIAL ENGINEERING AND
MANAGEMENT | OWNER OF SANDALFON
SUSTAINABILITY | BOARD MEMBER OF THE
TWENTE UNIVERSITY FUND SINCE 2016



WILMA VAN INGEN
DIRECTOR-GENERAL MANAGER OF
HOUSING CORPORATION DOMIJN |
CHAIRWOMAN OF THE BOARD OF THE
TWEENTE UNIVERSITY FUND SINCE 2017

PUSH

“During my time as director of the Chamber of Commerce, during the early years of this century, I was already a board member of the University Fund. I saw just how close the ties between education, the government and entrepreneurs are here in Twente. Together, we can help the University of Twente grow, which is essential to the appeal and the economic climate of the region. That explains why our fund and the University itself were established by people from the education, government and business sectors in 1948.

One of my tasks as chairwoman is to hand out the awards and scholarships that we give to students and alumni every year. It is great to see how big of an impact that can have. The tears in the eyes of the winners. The fire that is stoked inside the other students in the room. That is what we want. I often hear that it makes the recipient want to work even harder. No matter how talented you are, there comes a time in everyone’s career that you find yourself struggling. An award or scholarship, plus the attention that comes with it, can be the push you need at that moment.

I think we should be more open about what we do with the donations we receive and the fact that students can come to us for support. We are sometimes too modest in that regard. It would be great if the University Fund was clearly visible on campus in some way. Students would see that we are there for them. When students think back fondly on their time in Twente, it will be for the good of the region. Perhaps that will allow us to create a braingain, rather than a braindrain.”

OP ZOEK NAAR DEZELFDE SKILLS

“Seventy years ago, TKH was one of the founders of the University Fund. The region had to move ahead, which required an institution like a technical university of applied sciences. These days, the industry is going through another development and has to take new steps. This happens hand in hand with the university and with people’s personal development. We try to attract donors to make things happen, ranging from major research programmes to supporting a student who is giving a presentation at a convention. During our fundraising activities, we remind businesses of

their responsibility. For them, a scholarship is also a great opportunity to come into contact with new talent. There are shortages on the employment market and everyone is looking for people with the same skills. If we all work together to make the university stronger, businesses will benefit as well. In the end, this will have a positive impact on the entire region, including the TKH Group. Although our organisation operates on a global scale, our head office is still right here in Haaksbergen.”



ELLING DE LANGE
CFO AT TKH GROUP |
BOARD MEMBER OF THE
TWEENTE UNIVERSITY FUND
SINCE 2017

Go to steunutwente.nl for more information and an overview of all projects.



SUPPORT AND DONATE!
Visit www.utwente.nl/Ufonds

UT LECTURER OF THE YEAR IPEK SEYRAN TOPAN

It was her mother who showed her how to grab the attention of an entire room full of students. Her little girl encouraged her to compete for the title of UT Lecturer of the year 2019. Ipek Seyran Topan is proud of the title.

“It is a great honour and a great responsibility.” BY **Frederike Krommendijk** PHOTOGRAPHY **Frans Nikkels**

Her colleagues Erwin Hans and Elke van der Veen encouraged her to compete for the title of UT lecturer of the year after she had been selected as the best lecturer of the International Business Administration programme. At first, Topan did not want to take on that additional challenge, until her daughter saw the big, shiny trophy in her office. “Can you win another one, mummy?” she asked. It was just the encouragement she needed to throw her name in the hat for the UT-wide title.

Together with her husband Engin, Ipek first came to the UT three years ago. Before that, they had both worked in Eindhoven for four years. She had never dreamed of winning this title. “After the encouragement from my colleagues and my daughter, I decided to sign up after all. First, we had to write an essay, after which there were seven candidates left. After a miniature ten-minute lecture, there were only three left and I was in the finals. We were asked to teach a brief lecture and the jury ended up choosing me. I was incredibly happy.”

She has learned that there is also a downside to her new-found fame. “Students expect more from me now. However, I will keep doing my job just like I have always done it. Some students get nervous and think they have to work harder now. That is not necessary at all. I am still the same person.”

The secret

Colleagues ask Ipek, who works as a guest lecturer, about the secret of her success. “Apparently, I am the first guest lecturer to ever win this title. What makes a good lecturer? I always think about who my audience is.

What are their backgrounds, what pre-existing knowledge do they possess, what are their interests? I put myself in their shoes: how would I like to be taught? I also try to inject some humour and avoid repeating myself. That keeps things fun for me as well. Most importantly, I care about my students.”

She has inherited her love of the job from her mother, who worked as a chemical engineer in Turkey. “When I was young, she brought me along to the university of applied sciences where she worked and told me to sit quietly in the back. I would watch her and hang on every word. Confident, full of conviction, her voice, her body language. She was the best lecturer I have ever seen. Later in life, I wanted to become an industrial engineer myself. During my master’s programme and my PhD, I got a job as a teaching assistant. I grew so much as a person during those eight years. It motivated me to see every seat filled with enthusiastic students during my tutorials.”

Compared to the students in her home country, she finds the students in the Netherlands to be positively critical. “They do not blindly accept your every word. They think for themselves and are independent. When I give them feedback, they process it and sometimes go one step further. Some people might call it stubbornness, but I think it is a good thing that they are slightly critical.”

At the UT, she now spends three days a week teaching and two days on her work as a post-doctoral researcher. After they have put their daughter to bed for the night, Engin and Ipek often return to their work. “There is never enough time. It is hard to find the right balance between education and research. The workload is quite high at universities as well. We sometimes work up to sixty hours a week. I don’t mind that much, though. I love my job. If I can inspire even a single student in every group and they go and inspire another, my work will have been meaningful.”



I CARE ABOUT

"I always think about who my audience is, put myself in their shoes and try to inject some humour"

UT MY STUDENTS

“I think I joined a different association every year or so”

I WANT TO MAKE THE MOST OF MY STUDENT YEARS

What Jiska Chang does when she isn't working on her Industrial Engineering and Management studies? A better question would be what she doesn't do.

The twenty-four-year-old was and is a member of various committees, she is the president of the party for The Ambitious Student and she organised the Kick-In and TEDx. This past October, she received the “More Than a Degree Award” for her activism. BY Frederike Krommendijk PHOTOGRAPHY Eric Brinkhorst

When Jiska, now a seventh-year student, walked around the UT's campus for the first time, she was sold. “The whole atmosphere, the small-scale nature of it all. I am from Alphen aan de Rijn, so Enschede was perhaps not the most logical choice, but everything felt right here. I also loved the fact that there are so many opportunities available to you in addition to your studies. You can truly do anything you want here.”

To help her meet new people, she immediately joined a study association and a committee. “Almost all first-year students do that. It is a great way to get involved and make new friends.” Before long, her enthusiasm inspired her to join two other committees as well.

It marked the beginning of an impressive list of positions that she held over the years. “Many students join one study association and stay with that group for the rest of their student years. I think I joined a different association every year or so. I like getting to know a lot of different

people at the university.” She also plays hockey with the Drienerlose Hockey Club and dances at 4 happy feet.

In her third year, she opted for a full-time administrative year. She organised the Kick-In for bachelor students and the winter edition for master and exchange students.

“During my fourth year, things got a little out of hand. We wanted to organise a festival, Taste of Summer, to bring businesses and students closer together. That didn't work out, probably because our plans were too ambitious. At the UT, it can be hard to get people excited about something new. That was a learning experience for me.” Not to worry: Jiska joined the new daily management team of the Borrelbeheer Zilverling Foundation, a time during which the drinks rooms were heavily remodelled. The year after that, she helped organise TEDxTwente. “I thought that would be my last event and a great way to wrap it all up.”

In reality, things turned out quite differently. DAS asked her to join the

University Council and Jiska accepted, of course. She was involved in the discussion about the abolition of the 0-15 EC regulation of the Twents educational model. “That model requires students to earn fifteen ECTS credits every quarter. If they fail to do so, they end up with nothing. It led to enormous workloads and kept people from getting involved in committees in addition to their studies. Now that the regulation has been scrapped, the programme's curriculum has to be updated. We are currently discussing that issue in the Industrial Engineering and Management programme committee. I simply like being involved in things and protecting students' interests.” She is also still involved in the Kick-In as part of the Advisory Board and the transport crew. “No women had ever joined that crew because it is such hard work. After the first time, the men had to admit that I had done a better job than they had expected.” It should come as no surprise that Jiska is now head of this crew...

Nevertheless, she is taking it relatively easy this year. “My other activities never really got in the way of my studies, but there were some years where things got a bit out of hand. I am passionate about organising things. I am not doing this because it will look good on my CV or anything. I just love trying out new things.”

THE MOST SOCIAL UNIVERSITY

Next year, the University of Twente will start a new experiment that has to do with bringing science and society together. In collaboration with Saxion University of Applied Sciences, we are opening a CitizenLab. This lab will be a home base for Citizen Science: scientific research conducted in collaboration with citizens.

Initially, the focus will be on questions concerning healthcare, well-being and health, using the facilities available in the recently opened TechMed Centre and the DesignLab. For the TopFit project, which involves six people from the UT and six from Saxion, citizens will conduct research into "positive health." Patients will, for example, take part in research that concerns their own illness and treatment, employees will examine their employment conditions and the social and ethical questions pertaining to the research will not be introduced by experts in a top-down manner, but are instead studied in a bottom-up fashion in close collaboration with citizens.

Citizen Science represents a new phase in the socialisation of science. The classic view of science as an Ivory Tower, raised high above society, has long since been abandoned. These past decades, science communication, the utilisation of knowledge and economic impact have become standard terms in the debate about science. Even the programming of the research is opening up. The National Research Agenda, which was inspired by society, is clear evidence of that. Citizen Science represents the next step of this development. Citizens are not only

informed about science or given the opportunity to think about the big picture from a distance. Instead, they are actively involved in the execution of the research itself.

In late November, I got to give the opening lecture of the World Science Forum in Budapest, where I stated that this development towards Citizen Science is essential for the sustainable future of science. After all, the relationship between science and society is quite paradoxical. On the one hand, science requires independence: in order to uncover the truth and open up critical perspectives, scientists must be given the freedom to pursue their curiosity without being held back by outside influences. On the other hand, science demands involvement: education and research impact our society and we must take responsibility for that impact.

Together with Responsible Design, Citizen Science is an important answer to this paradox. There are two hearts beating in the world of science, which can be united by bringing together society and scientific practice.

There is a reason why the University of Twente plays such a central role in this development. Uniting science and society has always been an important aspect of our university's identity. Our new slogan is therefore "People First," which complements the familiar "High Tech, Human Touch." People come first in everything we do. I think it is a wonderful ambition to also include our planet and all its inhabitants in this. ●



"THERE ARE TWO HEARTS BEATING IN THE WORLD OF SCIENCE, WHICH CAN BE UNITED BY BRINGING TOGETHER SOCIETY AND SCIENTIFIC PRACTICE"



PROF. DR. ENGR. P.P.C.C. (PETER-PAUL) VERBEEK (1970) IS PROFESSOR OF PHILOSOPHY OF MAN AND TECHNOLOGY AND UNIVERSITY PROFESSOR AT THE UNIVERSITY OF TWENTE.

SEASONED CHIP DESIGNER AND HIGHTECH ENTREPRENEUR

He runs chip manufacturer AnSem in Enschede. He teaches workshops about *emotional strength development*. He visualises technology with his artwork. Alumnus Clemens Mensink about personal development, looking ahead and making sculptures. BY Wiebe van der Veen PHOTOGRAPHY Eric Brinkhorst

SWITCHING BETWEEN SKILLS

At AnSem, located at Kennispark Twente, around fifteen people work hard on the development of chips. "If I could, I would hire ten more," Clemens Mensink says. Good designers are hard to find. That explains why he pushed so hard to get the Leuven-based company to open a new location in Twente a few years ago. It is located at walking distance from UT professor Bram Nauta's Integrated Circuit Design department and therefore close to that scarce talent. "To find good chip designers, you have to go to Twente or Leuven," Mensink says. "Everyone else is lagging behind."

Dynamic world

AnSem is a so-called "fabless design house:" an agency that designs chips, but does not produce them. Its designers are working

on e.g. transmitters and receivers for the Internet of Things and on medical electronics. As an independent consultant, Mensink is in charge of the design team. "I don't do any actual design work myself anymore, but I still know enough about it to supervise my people. I spend the rest of my time on myriad tasks, from HR to operational matters and interacting with clients." Mensink studied Electrical Engineering at the UT and obtained his doctoral degree there in 1996. AnSem is his ninth employer. In the past, he worked for several major corporations – including Philips Semiconductors, Thales, Ericsson and Agere Systems – before choosing the world of design agencies. He was the co-founder of Axiom IC, which won the Van den Kroonenberg Award in 2012. Since then, the company has

been taken over by the American organisation Teledyne DALSA, although it is still based in Enschede. The region is now home to several of such design agencies. Mensink has either worked there himself or he is intimately familiar with them: "It is like a big family."

Sharing one's vision

In the evening, we encounter Clemens on campus in the Vrijhof. He is teaching a workshop on ESD. Has he returned to the world of technology? Doesn't ESD stand for "electrostatic discharge," like what happens when you take off a wool sweater? The kind of discharge that can be very harmful to a chip? No, the workshop is about "Emotional Strength Development." That is curious to say the least for such an experienced chip designer



Clemens Mensink (right) presents his artwork to director Wolter Hoekman of Elect Hightech Electronics from Weerselo.

and high-tech entrepreneur. “I was interested in this even when I was still a student. I try to look far ahead into the future, preferably twenty years or more. I consider personal development to be a prerequisite if you want to achieve something. Doctoral research, for example, was not a way for me to enter the world of science, but rather a means to create a better starting position for myself. At an early age, I decided to eventually - once I turned fifty or so - share these insights so they might help others. That time has now come. I have already given lectures and am now experimenting with a series of three workshops.” He opens the first of these three workshops with a quote from Albert Einstein, which ties in well with the UT’s own “people first” approach: “We are men and women, serving

men and women. What else can it be?” He also makes good use of the work of Stephen Covey, about one’s “personal voice.” The workshop is structured in an almost systematic manner that is well suited to a designer’s mindset. Although Mensink does not like to talk about “soft skills,” he does go into drive, passion, vision and goals. Mensink wants to convey that, as long as you have your own long-term vision and are aware of the choices you make, everyday concerns are unlikely to get the better of you. “I implement that same philosophy on the work floor. Of course, things might go wrong, but does that really jeopardise your goal?”

Imagination

Besides the workshops, Mensink creates sculptures with which he

seeks to convey his love for technology. Sometimes, he works together with the UT’s Creative Technology students. He has just finished a kind of demo table. The plexiglass

“To find good chip designers, you have to go to Twente or Leuven”

tabletop is not supported by any old frame of black tubes: it is shaped like the symbol for an MOS transistor, the most important building block in electronics. Elect Hightech Electronics from Weerselo decided to buy the piece from him and give it a prominent position near their building’s entrance. A co-worker coming to check out the installation recognises the inside joke right away.

In the lab, students from different study programmes lose themselves in so-called collaborative games. The goal is to learn to collaborate, not to win. That is a form of team building that suits the DesignLab well, says Van der Voort, who is running the meeting. She is one of the people behind DesignLab, which was established five years ago. "It is related to my Human Centred Design chair. The primary question is how to involve stakeholders in order to address and resolve social issues. The answer is bringing them together and letting them think and talk about what needs to be done, each from their own perspective."

In DesignLab, users go through various stages of the design process together, from formulating the problem to developing and evaluating ideas. These users are not only the UT's own students and researchers, but also outside parties: representatives from businesses, governments and NGOs.

The DesignLab is more than a physical location. It is an ecosystem in which researchers and students from all faculties work on social issues. DesignLab also offers cross-faculty education in the form of the new master-insert "Shaping Responsible Futures," an extra six-month programme that complements a regular master's programme. Van der Voort: "Here, students acquire the skills and attitude they need to become responsible leaders of societal change."

BY **Marco Krijnsen**
PHOTOGRAPHY **Frans Nikkels**



"All disciplines come together in DesignLab. Philosophers sit next to industrial designers, civil engineers and Business Information Technology experts. We also have psychologists"

CREATE CONCEPT SELECT




Name	Mascha van der Voort
Age	45
Position	Professor of Human Centred Design (Engineering Technology faculty) and scientific co-director DesignLab
Lab	DesignLab, in the The Gallery building

DREAM
AND DEED

OLD DEMONS ARE RETURNING TO THE DEBATE

CHERISH TH

A man with grey hair, wearing a dark suit, light blue shirt, and a dark blue tie with white polka dots, is smiling and looking towards the camera. He is standing in a city street with modern buildings and a blurred background.

"We must all make sure
together that we can recognise evil
when we see it"

In his youth, he wanted to become a fighter pilot and baseball player, but today he is a member of the cabinet of Frans Timmermans, the European Commission's First Vice President. UT alumnus Tony Agotha feels like a fish in water in Brussels. "It's a completely different environment, but I learned so much here." BY Ditta op den Dries PHOTOGRAPHY Uli Schillebeeckx

E F F R E E D O M

No, his move to Brussels was not planned. Twenty-two years ago, Tony Agotha believed he would end up in the Ministry of Foreign Affairs' International Security department, but he chose the EU instead. "That's how it goes in this business. Without you even realising it, one position leads you to the next. I had been home from Brussels for a year and was getting ready for the new season at the Ministry of Foreign Affairs' European Integration Department (DIE). When I came back from holiday in 2014, my director called me into his office. 'You are team C,' he said. 'You must handle Frans Timmermans' transition to the European Commission.' I was surprised, but it sounded like an exciting job and an opportunity to work with an interesting politician. Of course, I knew Frans Timmermans as a state secretary and Minister of Foreign Affairs and we had worked together a few times already."

Now, years later, Agotha finds that he is still learning a lot in Brussels. "I was familiar with the Belgian capital as a result of our Permanent Representation in the EU, but now I get to see how the European Commission operates from the inside, like a political crow's nest. The Commission table seats twenty-

seven colleagues, but they all have a national shadow hanging over their heads, including the political colour of their Commissioner. When a vital national interest is at stake, you try to make sure your cause is heard and considered as fairly as possible. Everyone does that. It can therefore take a while for the Commission to draw up a new law. However, once that law has been written and accepted by the Parliament and the Member States, the decision will apply throughout the entire EU, thereby impacting the lives of five hundred million people. That never ceases to amaze me. My time at the Ministry of Foreign Affairs and now with the Commission have also taught me how democracy develops. It is rarely a straight line up; there are sideways and sometimes downward movements as well. To someone who grew up when the Berlin Wall came down, it is a revelation that democracy is not an inevitability in the 21st century."

Green Deal

He has limited time set aside for this interview, because he still has so much work to do. They are in a transitional period and waiting for the European Parliament to approve the new Von der Leyen Commission. Meanwhile, work continues and

deadlines are steadily approaching. He says they have all been working as fast as they can since Frans Timmermans was appointed as the new European Commissioner for Climate. Timmermans will be in charge of overseeing a new Green Deal for Europe. It will be about protecting the environment, improving people's well-being and preserving a healthy planet for future generations. They also want to live up to the promise of making Europe the first climate-neutral continent in the world by the year 2050. Timmermans will be responsible for climate, but he also oversees policies pertaining to e.g. agriculture, transport, energy and environment and oceans.

It is up to Agotha and his colleagues in the cabinet to give Timmermans the relevant information he needs to help him set these policies. "Timmermans has a relatively small and highly diverse group of people behind him. "We have many different nationalities and backgrounds, yet we all share the passion and energy to help bring this Green Deal to fruition. We prepare dossiers, urgently appeal to the Commission services, write talking points, maintain contacts with the European Parliament and the Member States and interact with the media."



For a top European politician, it can get lonely at the top. This is Timmermans' second top position within the EC and he needs people to help him perform his duties. "Frans Timmermans has a clear vision of his own; he does not need us for that. On top of that, he has an unrivalled ability to express this vision. We often spar with him to get the focus right and sharpen the blade, as it were."

In early October, Tony Agotha briefly returned to the UT, where he studied Public Administration from 1990 until 1995. He was invited to give an AlumniTalk. He did not write his speech on paper. He didn't need to. "I started by painting a picture of global politics. What does Europe stand for, what values and standards does the EU employ and what does Europe have to offer in the future? For me, that kind of speech needs no preparation," he says.

"I did not leave the UT with a single hammer, but with a toolbox full of invaluable tools"

Public Administration

To Agotha, his recent return to the UT felt a bit like coming home. "The feeling and the atmosphere were still the same and the environment looks just like the old days, but I hardly recognised the modern Vrijhof with its new appearance near the entrance and the cafeteria. Luckily, the large theatre room and the small room where Broodje

Cultuur was always held have all remained exactly the same." In the 1990s, Tony Agotha often got on stage for Broodje Cultuur, together with a band made up of several other students from the UT and the Conservatory. "The UT and Enschede always had a lively band culture. Music is a great hobby. It shapes you. You learn to feel comfortable on a stage, interact with the audience, be a soloist, but also work together. In many ways, that is similar to what I do today."

The old band still gets together sometimes. Their most recent performance was last summer in Scheveningen, where they played at a party organised by the Ministry of Foreign Affairs. "It warms my heart to see my friends from the UT again and make music together. 'Hell,' I think when I look behind me on stage: 'It's been thirty years!' Our children are almost as old now as we were back then. Our hair is greying and thinning. We have put on a bit of weight, become a bit more serious, but our capacity for bad jokes remains as strong as ever."

It was his mother who first suggested that he study Public Administration. "I was young and naive and mostly focused on baseball and girlfriends. What I really wanted was to become a fighter pilot. I had already gone through the various selection procedures. However, I was prone to nausea in the air, so I was rejected. For a brief moment, I thought about going to the conservatory. When I look at my own four child-

ren, I see they are much more serious, realistic and conscious when it comes to their choice of study programme and their future." To this day, he is still glad that his mother gave him that tip. "The European Commission is home to many excellent lawyers and economists. They are specialists. When you are dealing with specifics, they cannot be bested. However, with my background in Public Administration and my experience as a diplomat with the Ministry of Foreign Affairs, I like to see the big picture and the connections. I did not leave the UT with a single hammer, but with a toolbox full of invaluable tools. That has paid off countless times throughout my career."

Dream

A while back, Agotha gave a talk at his eleven-year-old son's school. He told them that they have things to do in this world. They have to stand up against injustice wherever it rears its ugly head, whether it concerns the climate, women's rights or world peace. He conveys that same message to the young students who visit him at the European Commission in Brussels. "Cherish what you have. Cherish the freedom. Do not allow evil to gain the upper hand. It is our responsibility to keep doing that, because old demons are returning to the debate. Hate speech. Illiberalism. Discrimination. Anti-Semitism. The generation who lived through the Second World War is almost gone. We must all make sure together that we can recognise evil when we see it and then rise up against it and let our voices be heard."

Agotha asked his son's classmates if they got the message. "Yes, now it's our turn," said one girl. That piece of wisdom gave Agotha hope. His biggest dream is that his own children – no, all children everywhere – can find their way in this hard world and make it a better place to live. "There is nothing I want more for them than that."

Professional Learning & Development is about applying scientific expertise in practice and combining it with your own issues and experiences. Acquiring new knowledge and inspiration, exchanging experiences and expanding your network are the foundation of our study programmes for professionals and managers. Our programmes are centred around the specialisations of Public Management and Risk Management. TEXT & PHOTOGRAPHY PLD

PROFESSIONAL LEARNING & DEVELOPMENT

“Almost all modules resulted in practical knowledge and recommendations that I was able to put into practice immediately”



Frank van der Knaap, manager business operations metropolitan region Rotterdam The Hague.

We offer the following types of study programme:

- Part-time master's with a duration of 2.5 years
- Master classes of eight to twelve weeks
- In-company programmes

Public Management master's programme

The Public Management master's programme is the perfect part-time programme for (prospective) managers, supervisors and administrators in the public sector. The goal of the Public Management master's programme is to offer you up-to-date knowledge at an academic level and challenge you to acquire new insights and skills. This will optimally prepare you to successfully perform a strategic and supervisory role in the public sector.

Risk Management master's programme

For professionals and managers, it is essential to be familiar with the comprehensive field of risk management. This Risk Management programme enables you to develop and implement a successful vision at the strategic level. This master's programme offers up-to-date and integral insight into how to deal with corporate and social risks.

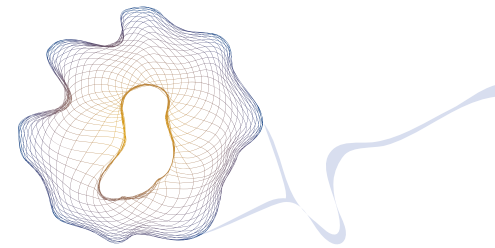
How well are you protected against cybercrime?

Cybercrime and cybersecurity have become deeply embedded in our modern society. Learn effective and realistic ways to deal with relevant uncertainties that may get in the way of your organisational goals and ambitions - or reinforce them.

This master course consists of six two-day seminars, spread across a six-month period. The focus of the programme is on concrete cases brought in by the participants. With the help of analytical modelling (SARA, Diamond model) and risk modelling, measures are drawn up in a preventative manner, which participants can then utilise in their own professional context.



IN BRIEF



“MORE EXTREME WEATHER CONDITIONS DO NOT HAVE TO LEAD TO MORE EXTREME DISASTERS”

In the years to come, governments and businesses will invest hundreds of billions of euros in the development and implementation of measures designed to protect us against the effects of climate change or to slow down or even reverse said climate change. Climate scientist Maarten van Aalst is researching how best to use this money. On 13 September, he gave his inaugural speech.

Van Aalst performs a double role. As a professor with the ITC Faculty of Geo-information Science and Earth Observation at the University

of Twente, he holds the Prinses Margriet chair, where his mission is to “increase the resilience against natural disasters and climate change.” As director of the Red Cross Climate Centre, a global team of thirty-five experts, it is his job to support the Red Cross with its efforts to provide (climate) disaster relief to vulnerable people all over the world, for example by linking global science to local practice. “When I look back later, I hope to see that my efforts actually helped reduce mortality rates and human suffering.”



ARTIST WANTED

The UT is soliciting applications for an “iconic artwork” to commemorate the University’s sixtieth anniversary in 2021. The new creation will be placed in an as-yet undetermined yet prominent location and there is a “serious budget” available for its design.

The Campus Art Advisory Committee (CAAC), established in 2018, will oversee the art project. The committee’s goal is to add a major outdoor art piece to the campus every anniversary year. In its open call, the CAAC has asked artists to submit their project proposals before the end of this year. The artwork is intended to make the anniversary year of 2021 even more special. Artists have to keep one thing in mind: a reference to or connection with technology is preferred.



MASTER'S PROGRAMME CELEBRATES ITS TWENTIETH ANNIVERSARY

They are this century's biggest environmental issues: water, clean energy and climate change. At the University of Twente's Frisian campus, students are trained to develop and implement new solutions for those exact issues. In September, the graduation of the twentieth generation of students was celebrated: the students who successfully completed the Environmental and Energy Management master's programme this past academic year were given their degree certificate.

"We train students to become e.g. Environmental Officers or Water Governance Officers," Maarten Arentsen explains. He is a university associate professor of energy innovation in the Governance and Technology for Sustainability (CSTM) department. "With this master's programme, we try to educate the students in such a way that they are capable of initiating and executing complex change processes with a technological component. You might call it change management from a sociotechnical perspective."



NEW MEMBER OF THE SUPERVISORY BOARD

The Minister of Education, Culture and Science has appointed Nienke Boersma as a member of the University of Twente's Supervisory Board. Nienke Boersma will succeed Eef Bos, whose appointment is coming to an end. Boersma is a UT alumna who obtained her master's degree in Applied Physics in 1997. She started her career at Arthur D. Little as a strategy consultant in the field of telecommunication and internet, after which she obtained her MBA from the IESE Business School in Barcelona. Next, she worked as a management consultant at the ING Group, before holding various management positions at NN-Group in the pension and insurance division. These past seven years, she worked at Group Finance as Head of Payments & Reporting and head of the Service Centre Finance. A few years ago, she also became an active board member of the UT's ambassadors network. From 1 November, Boersma will continue her career as director Reporting at Achmea.



FIRST 3D-PRINTED METAL BRIDGE TESTED AT THE UT

This autumn, the first 3D-printed metal bridge in the world is being tested on campus. In early 2020, the bridge will be moved to its permanent location in Amsterdam. The bridge was produced by the Dutch company MX3D. The design was made by Joris Laarman Lab in collaboration with lead engineer Arup. For this project, a groundbreaking robot technology for 3D printing was used. In addition to the revolutionary production

method, the bridge also stands out because of its innovative design process. Together with the Imperial College London, the University of Twente is conducting the final construction tests, including an assessment of the bridge's total load-bearing capacity. Using special transport, the bridge arrived on campus on 3 September and was placed near the De Horst building.



More information about these items can be found at www.utwente.nl/en

UT COMMUNITY REACHES MILESTONE OF 50,000 ALUMNI

The University of Twente's alumni network has reached a milestone: 50,000 UT graduates have now joined the network. Three of them graduated on the very day that this magical number was reached. Who are they and how do they feel about a network of alumni? BY **Frederike Krommendijk**

"I know a little about the alumni network"



JOB DELFGOU (24)

BACHELOR MANAGEMENT, SOCIETY & TECHNOLOGY

"I completed my bachelor's in July and am now working on my master's degree in European Studies. I know a little about the alumni network. When I did my administrative year, a colleague was involved in it. I think it will definitely be useful in the future, but at the moment I am fully immersed in my studies. That will keep me plenty busy for the next few years. I got a room on campus 3.5 years ago. I like that a lot. I also liked the small-scale

nature of the programme, especially at first. In my first year, there were only seventeen of us. That means you can actually have a personal bond with your fellow students. I also enjoyed the fact that we worked on so many projects, since working together is more fun than working by yourself. In a group setting, everyone depends on each other. If you don't do your part, someone else cannot proceed either."

MAJORIE VAN HELVERT (25)

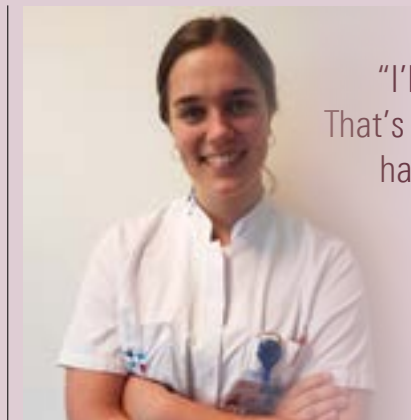
OBTAINED BACHELOR'S AND MASTER'S DEGREES IN TECHNICAL MEDICINE

"I started at the UT in 2012 and finished this past July. Now, I work as a Technical Physician in the vascular surgery department of the Rijnstate Hospital in Arnhem. I still feel a strong connection to the UT. I supervised first-year students during a project on vascular surgery and in the future I will assist master's students with their surgical skills and perhaps echography. It is great to be on the other side for once. Students look up to you and are curious about what I am doing these days. During my

time as a student, I used to worry about that as well. However, I saw so many students doing their internships in such great places that I thought: I'll be fine. That's exactly what happened.

I do believe the alumni network can be useful to me in the future, but I'm not too worried about it right now. I read the magazine and the emails and some of the items do interest me. For now, though, the network of Technical Medicine is enough for me."

"I'll be fine. That's exactly what happened"



"The network informs you about great opportunities sooner"



IRIS VAN DER LOO (21)

OBTAINED HER BACHELOR'S DEGREE IN TECHNICAL MEDICINE AND IS NOW WORKING ON HER MASTER'S DEGREE IN THE SAME FIELD

"Once I had chosen the Technical Medicine programme, I went to Delft and Enschede. I love this study programme because it combines aspects of medicine with the latest technology and innovations. What I like about the UT is that it is a very active university. There are myriad opportunities for extracurricular activities. For example, I have been part of various committees and completed the Honours programme. Afterwards, I worked as a student assistant

in the Honours Office. One of my colleagues was busy contacting former Honours students to keep them up to date if any interesting positions opened up. I had never really thought about how a network like this can inform you about great opportunities sooner. I believe it may come in handy eventually, but I have not looked too far into it yet. I'll be too busy with my master's degree for the next few years."



CERN GENEVA AND GOOGLE ZURICH

You run into UT alumni all over the world, working amazing jobs at interesting organisations. Last November, the alumni working at CERN in Geneva and Google in Zurich opened their doors for the alumni community. These events, jointly organised by the alumni agencies of the UT, Delft University of Technology and Wageningen University, attracted more than 180 participants.



THT REUNION

"We were not studying, we were students". Under this motto, memories were collected from the 'Technische Hogeschool Twente', on Friday, November 29. For over 200 alumni (1964-1986) it was a happy meeting. After the end of the reunion, visitors went to the dies natalis and the opening of the TechMed Centre.

Would you like to invite the UT alumni to your company or is there a company where you would like to have behind-the-scenes access?

Then let us know via alumni@utwente.nl

With 50,000+ alumni spread all over the world, there is always an entrance!

COLOPHON ALUMNI NEWS

Questions, comments and suggestions:
alumni@utwente.nl
 Tel. +31 (0)53 489 2104
 Twitter: @alumniUTwente

www.utwente.nl/alumni
 - Changes of address
 - Subscribe or unsubscribe digital
 - newsletter
 - Email forwarding request

UT ALUMNI ON THE MOVE

- > Since September of 2019, **Mick Beekhuizen (TBK'99)** has been working as Chief Financial Officer of Campbell Soup Company. Before this, he spent thirteen years at Goldman Sachs, among other things.
- > On 1 October 2019, **Nienke Boersma (TN'97)** was appointed as a member of the University of Twente's Supervisory Board. She also started her new job as director of Reporting at Achmea on 1 November 2019.
- > Since October of 2019, **Leonard van Bokhorst (TBK'07)** has been working at KWF Kankerbestrijding as Strategy & Transformation Lead. Prior to this, he spent nearly twelve years at The Boston Consulting Group, where he advised healthcare clients.
- > In November of 2019, **Tjeerd Bosklopper (BIT'99)** was appointed as CEO Nationale-Nederlanden ad interim. Before this, he worked as Chief Transformation Officer and member of the Management Board at Nationale Nederlanden.
- > After completing his master's in Educational Science and Technology, **Jagvir Brar (EST'16)** returned to Canada, where he now works as Senior Content Strategist at Slack.
- > In October of 2019, **Henk Geveke (BSK'89)** was appointed as a member of the Nationale Politie's police management, where he is in charge of Technology & Innovation. Prior to this, he worked at the Ministry of Foreign Affairs for six years and served as the general director of TNO Defence, Safety & Security for nine years.
- > Since October of 2019, **Gelareh Ghaderi (GEO'15)** has been working as Medical Data Analyst at Cirque du Soleil Entertainment Group. During her studies in Enschede, she was involved in UniTe and worked to make international students feel more at home here.
- > After working as Head HR at Nationale Nederlanden for several years, **Suzanne Jungjohann (TBK'95)** started her new job as director of HR at Albert Heijn in October of 2019. Suzanna is also a member of the executive board at Enactus Nederland and the Supervisory Board at Deltares.
- > Since November of 2019, **Lowie Kok (BSc COM'12)** has been working as a press officer for GroenLinks Europe in the European Parliament. Prior to this, he worked as press officer at Milieudefensie and was involved in GroenLinks Amsterdam.
- > Since October of 2019, **Hauke Kramm (BSK'12)** has been working as Senior Communications Manager at the Deutsche Kreditbank. These past four years, he held a number of positions at FleischmanHillard.
- > In addition to being on the boards of Studielink, SURF and the Feyenoord Foundation, **Marcel Nollen (BSK'87)** also joined the board of the VU University Amsterdam in October of 2019.
- > Per September of 2019, **Can Okur (PSY '15)** has been working as HMI & UX Engineer at Volkswagen Commercial Vehicles. Prior to this, he served as the CEO and co-founder of Neonamic, where he also held the position of UX Researcher.
- > In May of 2019, **Federico Ongaro (PhD'19)** obtained his doctoral degree in the field of Surgical Microrobotics. He now works as a Senior Robotics Software Engineer at iRobot in London.
- > Since October of 2019, **Remko Stam (TW'06)** has been working as Data Lead Platform Operations at bol.com. In the past, he worked at the ANWB, Prorail and as a Management Trainee at ORMIT Nederland.
- > After working at Bayer in Leverkusen for four years, **Luisa Suren (IBA '14)** got a new job in the IT Procurement department at Porsche AG in October of 2019.
- > Since November of 2019, **Henk Swarttouw (BSK'88)** has been serving as an ambassador for international organisations ad interim at the Ministry of Foreign Affairs. Previously, he worked as ambassador at the Dutch embassies in Finland and Denmark, among other things.
- > In October of 2019, **Evert Westerhof (WB'02)** started his new job as Director of Operational Excellence APMEA at ARYZTA in Melbourne. In the past, he worked at Procter & Gamble in Brussels and London.
- > Since September of 2019, **Jeroen Wiebolt (TBK'93)** has been working as Services Sales Program Manager, Hospitality at NCR Corporation. Before this, he spent a decade at HP, where he also worked on Service Management.

ANNUAL CAMPAIGN 2020: YOUR GIFT COUNTS EVERY YEAR

The new annual campaign will start in December. As before, we are asking you to support four unique causes. Support Eline Mos-Oppersma with her research of COPD. Help the newest UT student team A3T to get their innovative drones into the air. Give elementary-school children the chance to enjoy technology lessons in their classrooms and give students like Zakir Farahmand from Afghanistan the opportunity to study in Twente. On behalf of the students, researchers and children: thank you very much! www.steunutwente.nl



UFWO **stichting universiteitsfonds twente**

DONATE WITH TAX BENEFITS

Do you already donate to the campaign every year or are you thinking about doing so? You can easily enjoy a tax benefit by turning your donation into a periodical gift! Doing so will allow you to raise your contribution without spending any extra money. For more information: www.utwente.nl/doneren-met-voordeel.

If you have any questions about donating with tax benefits, Josine Meerburg can help you. You can contact her via j.e.meerburg@utwente.nl.



WORKSHOP CAMPUS CARILLON

The carillon on the Drienerveld (Carillonveld) has been a real eye-catcher on campus since the UT's opening. However, the carillon in the tower is rarely used these days. According to Cultuurkoepel Apollo, it was high time to change that. During a "Campus Carillon" workshop led by the carilloneurs of Oldenzaal and Enschede (alumni Hylke Banning and Esther Schopman), an interest in playing the carillon was awoken in several students.



ARAGO STUDYTOUR HIGHWAY ONE

This past summer, twenty-six students of Applied Physics spent three weeks travelling along the west coast of Canada and the United States. This visited Boeing, Google, the University of British Columbia, NASA JPL, LIGO Hanford Observatory and Stanford University, among other places. The trip also resulted in a number of internship positions. Of course, the group also visited several major cities, including Vancouver, Seattle, San Francisco and Los Angeles.



STRESS STUDY TOUR SUSTAINABLE INNOVATIONS SINGAPORE

In total, twenty-seven students visited Singapore to learn more about the world of innovation management and sustainability. They focused on the government, energy and water, education, finance and food and waste. In total, they visited eighteen companies in eight days, including ING, Siemens, the National University, TNO and FlowTraders.

They also visited the Dutch embassy, studied the sustainable cooling system of the famous Marina Bay Sense Hotel and paid a visit to the start-up Positive Energy Ltd, founded by UT alumnus Vincent Bakker (IEM'14).

CHUAN LI WINS PROFESSOR DE WINTER AWARD

During the 58th dies natalis, the Professor De Winter Award was given to Chuan Li, university lecturer with the Engineering Technology faculty and researcher at the MESA+ institute for Nanotechnology.

Chuan Li is a pioneer in the field of superconductivity and quantum transport in materials that remain unaffected by distortions. She was the first person in the world to realise superconductivity in Dirac semimetal. This could be a new way to create the so-called Majorana particles. Her discovery was rewarded with a publication in Nature Materials, the prestigious journal in the field of materials science. The editorial commentary was full of praise: "The missing steps identified by Li and her colleagues represent an important step towards the realisation of topological superconductivity. Their results are much needed and inspiring." The article attracted attention from all over the world and led to many requests for collaboration.



The Professor De Winter Award, named after the professor who passed away in 2005, is an international publication prize for outstanding female talent. It is intended as a recognition of excellent scientific research and to stimulate the winner to further develop her scientific career. The prize, which consists of a sum of €2,500 and a certificate, is paid for by the Professor De Winter Fund, a named fund that forms part of the Twente University Fund. This fund was established by the late Mrs De Winter. After her passing in 2013, her heirs, UT alumnus Henk Hoving and his partner Thijs van Reijn, decided to continue the annual donation to the University Fund. This year marks the thirteenth time that the prize was given out.



NEGOTIATION CHALLENGE WITH PETER RIEZEBOS SCHOLARSHIP

With help from a Peter Riezebos Scholarship, three students took part in The Negotiation Challenge (TNC) in the Japanese city of Kyoto in late March. Eighteen national teams took part in this annual tournament, which brings together master's students and professionals from all over the world to test their negotiation skills.

After four qualification rounds, UT students David Charles van der Griend, Henrike Fitschen and Sami Sercan Findik earned a respectable second place.



WOULD YOU LIKE TO ENDOW A NAMED FUND?

You can support the University of Twente by making a one-off donation, a regular contribution or by naming the University Fund as a beneficiary in your will. It is also possible to endow a 'named fund', provided its purpose is in keeping with the general objectives of the University Fund. You decide the fund's name and how its resources are to be spent. The minimum donation required to establish a named fund is € 10.000,-.

More information

See www.utwente.nl/ufonds or contact Maurice Essers on +31 53 489 3993, email m.l.g.essers@utwente.nl

Universiteitsfonds Twente

Postbus 217, 7500 AE Enschede
Bankrelatie: IBAN NL09 ABNA 0592 7191 89
T.n.v. Stichting Universiteitsfonds Twente, Enschede

WERE YOU
THERE?



SWIPING KING OPENS



By swiping on a tablet, King Willem-Alexander opened the new TechMed Centre on Friday 29 November during the dies natalis.

Afterwards, the king was given a tour of the new centre and he spoke to students and staff.

TechMed Centre is the go-to hotspot for innovation in the healthcare sector, says rector Thom Palstra. His dies speech was about people-first technology. It all starts with the question of what that one particular patient needs, what society needs. That is what people-first technology is all about. As long as we're putting people first, says rector Thom Palstra, why not take things one step further? "We want citizens to think along about the choices we make and be actively involved in our research. TechMed has already started a project that involves citizen science."

Petra Hes made for an impressive example. She suffered a stroke at the age of seventeen and ended up in a rehabilitation facility, which felt to her like being sent to a retirement home far too soon. She did not give up her exploration of the technical

WERE YOU
THERE?



PHOTOGRAPHY Fokke Eenhoorn & Annabel Jeuring

TECHMED CENTRE



possibilities, was the first person to have a chip implanted and made her recovery with the robotic legs from LOPES, developed by the University of Twente. These not only restored her mobility, but also her inner strength. She now coaches people who find themselves in similar situations. "Always put people first," she pleaded.

Several awards were given out during the dies natalis. The Overijssel PhD Award for the best doctoral thesis of the year was given to Tom Kamperman. He builds things, using living cells as building blocks. The spin-off lamFluidics, for which he serves as Chief Technology Officer, is developing a special in-air printing technique. The Professor De Winter Award was given to Chuan Li. Read more on page 31.





PROMINENT PLAYERS IN THE FIELD OF MEDICAL TECHNOLOGY

A CLOSER LOOK AT TE

Roughly forty percent of all research and education at the University of Twente is related to the healthcare sector in some way. A significant number of those activities are conducted at the Technical Medical Centre. On Friday 29 November, King Willem-Alexander officially opened the new centre.

BY Marco Krijnsen PHOTOGRAPHY Frans Nikkels

The Technical Medical Centre (TechMed Centre) is the meeting ground for scientists, students, professionals and entrepreneurs who are working on the medical technology of today and tomorrow. At the TechMed Centre, they can find the facilities and expertise to develop and test innovations and train with them in simulation centres. "There is nothing else like the TechMed Centre in the Netherlands," says business director Remke Burie. "The building and all its facilities also serve as clear evidence of the UT's prominent position in the medical technology sector."

Education

The UT's three healthcare-related study programmes (with a total of

1,600 bachelor's and master's students) all make use of the new TechMed Centre. These are: Bio-medical Technology, Technical Medicine and Health Sciences. The building also houses Paradox and Sirius, the study associations of these fast-growing programmes.

The simulation centre in particular is essential to students, Burie says. "It prepares them for the practical reality of the job. This is done in combination with lectures and interactive working groups."

The centre also offers education in light of the UT's focus on lifelong learning. Every year, more than five hundred medical professionals come to the TechMed Centre to train with the latest medical

technology. "For example, every vascular surgeon in training in the Netherlands comes to us for the mandatory four-day training and assessment." Two regional hospitals, MST and ZGT, also make use of the simulation centre. They train their medical professionals in collaboration with the UT. Then there is the collaboration with businesses such as Siemens Healthineers, who use the centre's facilities for the development and testing of innovations and to train with new equipment.

Research

Six of the more than thirty chairs that make up the TechMed Centre are housed in the new building:

- Multi-Modality Medical Imaging
- Magnetic Detection and Imaging
- Clinical Neurophysiology
- Cardio Respiratory Physiology
- Health Technology & Service Research
- Health Technology Implementation

There are also several translational, semi-clinical chairs and chairs



“From the outset, we also take the social aspects of technology into account”

subjects. Researchers watch from the control room and record everything that happens for video analysis.

Furthermore, the TechMed Centre contains physiological laboratories, robotised operating theatres, an Intensive Care unit where resuscitation scenarios can be trained, an imaging lab with both a low-field and a standard MRI scanner, advanced echosystems and a photoacoustic mammograph. There are also simulation rooms with state-of-the-art equipment, including angio, endoscopy and ultrasound simulators, designed to be used by medical professionals for research and training purposes.

CHMED CENTRE

from the Behavioural & Management Sciences (BMS) faculty. “The presence of behavioural scientists makes the centre even more special,” says its scientific director Nico Verdonshot. “From the outset, we also take the social aspects of technology into account. Think of e.g. ethical concerns or the user-friendliness of a device. How does certain technology impact the behaviour of the end user, the patient or the surgeon? What problem does it solve? At the same

time, these integral aspects are also incorporated into the available facilities, such as the eHealth House, where new technologies for home use are tested.”

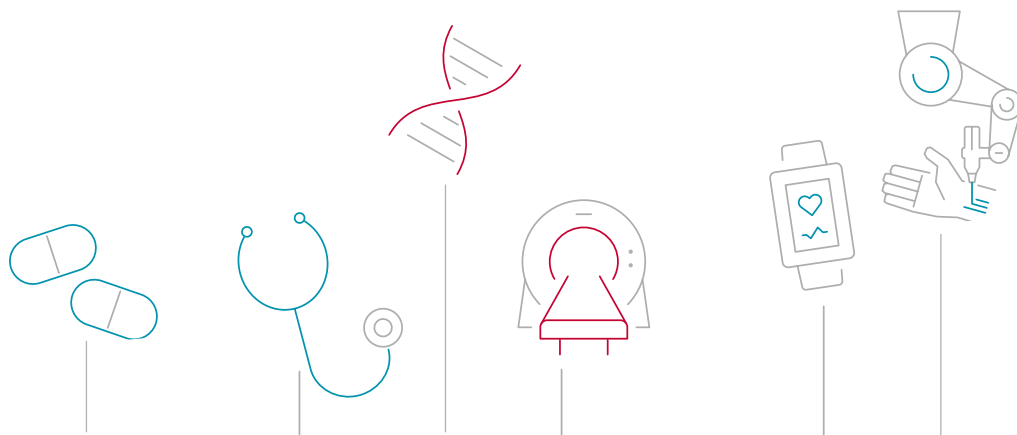
Facilities

The eHealth House consists of a replica of a living room with a kitchen and a bedroom with a shower and a toilet. The house is packed full of home automation applications and it is designed to help test new medical devices on

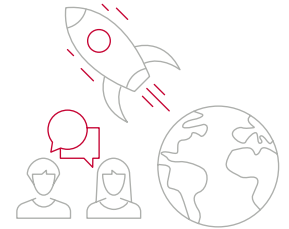
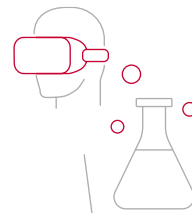
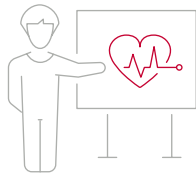
The hybrid operating theatre contains equipment that can be used to quickly generate a 3D image of a patient from any angle. These images can be linked directly to surgical robots and are used to e.g. guide catheters, capsules and such to the right position inside the patient’s body.

Innovation hub

The TechMed Centre is an innovation hub that helps businesses – SMEs in particular – develop new medical technologies and bring them to market. Businesses can make use of the TechMed Centre’s many facilities, which are often too costly to purchase, as well as its network, which includes hospitals, research institutes, healthcare insurance providers, specialised laboratories and the services of Novel-T. All this increases the chance of a successful implementation of innovations in the healthcare sector. At the moment, the UT serves as the coordinator of the network of sixteen innovation hubs in Europe (DIH-HERO) that specialise in the field of biomedical robotics.



UNIVERSITY OF TWENTE



RESEARCH PROJECTS



The TechMed Centre serves as a meeting ground for top medical professionals, researchers, students and entrepreneurs. They literally run into each other in the large Atrium, the heart of the building. Activities are frequently organised here to further increase the interaction between the various groups. Only recently, there were the TechMed workshop series concerning the implementation of technology in practice and the international Medical Devices Meeting.

Personalised eHealth

“Personalised eHealth” is a prominent research programme at the

TechMed Centre. As our society ages, the healthcare sector is put under increasing amounts of pressure, while the staff shortages in the sector are mounting. The provision of healthcare is gradually moving from the hospital to people’s homes, where patients are remotely monitored using the latest technological developments, thereby allowing them to live at home independently for longer.

Digital twin

As a professor of orthopaedic biomechanics, Nico Verdonchot work concerns, among other things, the digitisation of musculo-

skeletal systems. This technology predicts how an individual patient will move with the help of their digital twin. It comes in handy when making decisions during surgery. The system is used to e.g. calculate the remaining leg function of a cancer patient with a tumour in their femur if this tumour and part of the surrounding muscle tissue were to be removed. Will the remaining muscles be able to compensate enough to allow the patient to walk again or is that not the case and will the patient be better off with an amputation? How quickly will the cancer patient’s bone break off under the influence of the metastasis

developing inside? Verdonshot has created a database of his predictions, which turn out to be fairly accurate in practice. The next step is to collaborate with neurologists. They can add a nervous system to their musculoskeletal models and direct the body's compensation processes. This can help with a patient's recovery after e.g. a cerebral haemorrhage. A robot designed to help the patient recover will know exactly what it needs to do.

Exoskeleton

For the Symbitron+ project, UT researchers are working together with colleagues from the Roessingh

Centrum voor Revalidatie and Delft University of Technology to develop an exoskeleton that helps paraplegic patients walk. The project mainly focuses on improving the symbiotic interaction between the exoskeleton and its user.

The team also took part in the Cybathlon Experience in Düsseldorf, where the exoskeleton was tested in various scenarios, e.g. on a slope and a staircase. This served as an initial test case on the road to Cybathlon 2020, the biggest competition between technological aids. The underlying goal is to continue the development of an exoskeleton.

Diabetic foot

The Power4FitFoot research programme focuses on diabetic patients with an elevated risk of developing a diabetic foot. In individual patients, this condition results in a deteriorating state of health and a higher mortality rate. Better early detection can prevent a diabetic foot and ultimately its amputation. Patients must also receive better support to help them manage and maintain their own health. Researchers, biomedical experts, IT technologists and behavioural scientists are working with patients, healthcare providers and industrial partners to develop new methods and monitoring techniques that make use of big data.

The TechMed Centre, formerly known as Technohal, used to house the AKI art programme. In late 2012, when the rental contract ended, ArtEZ University of Applied Sciences relocated to the Tetem building in Roombeek. In 2015, it was announced that all health programmes would be housed under one roof in the former Technohal. In 2016, the interior demolition process began. The industrial appearance was preserved by leaving pipelines, wires and construction elements exposed. The old lamps from the AKI building also got to stay, as did the yellow cranes.

AND ACTIVITIES



TOP MANAGER AT DELL, DEVELOPED HERSELF IN THE WORLD OF BUSINESS



Sometimes, your career does not go as you expected beforehand. If someone had told Jeannine Peek (50) that she would end up working in sales, she would have laughed in their face. Now, she works as Vice President & Regional General Manager at computer giant Dell Technologies. BY Frederike Krommendijk PHOTOGRAPHY Eric Brinkhorst

TECHNICAL UNIVERSITY

When Jeannine Peek had to choose a study programme in 1987, an open day made all the difference. The information given at the Chemical Technology programme in Eindhoven disappointed her and it rained terribly there, so she opted for Industrial Engineering and Management in Enschede instead. "I wanted to do a technical study, but I had not decided on what or where. That is how you make your choices at that age," she says. She has never once regretted her decision: after graduating, her career took flight. "I spent a year in the US working for the company that produces M&Ms and Mars bars. I did my final thesis project there. After that, I spent a few years at PTT as a project leader. I can still remember the first feedback I ever got there. My supervisor told me I was a terrible project leader. Luckily, he added that he thought I would be better off in the world of sales.

That position suited me much better."

She transferred to sales and eventually became sales manager. At Dell, she was hired for a leading sales position. She left the company at some point to become the director of the employment agencies Unique and Content, but eight years ago she returned to Dell as general director for the Netherlands. She got promoted a year ago and is now responsible for the company's development in seven European countries.

"It just happened. If someone had told me way back when that I would one day work in sales, I would not have believed them. It didn't interest me. It wasn't until later that I discovered you have to enter the world of business with an open mind. If you graduate and then get a job with the government

or in education, your career path is far less flexible. There are so many things you can do in the world of business that you will eventually discover your qualities."

Was her study programme a waste of money, then? Jeannine laughs. "No, I wouldn't put it like that. I ended up in the IT business eventually, where I can let my passion for technology run wild. However, I might also have been good at this job if I had gone to law school. In any case, it is important to choose and finish a study programme, because it gives you a solid foundation and a certain level of knowledge and skills. With that, your career is off to a great start. You should be open-minded about whatever happens next. I still keep in touch with some of my peers. Their career paths are widely diverse and entirely different from my own. What we have in common is that solid foundation."

“There are so many things you can do in the world of business that you will eventually discover your qualities”



WAS A GREAT START

Adaptability

According to Jeannine, the most important thing she learned as a student was how to think. “You acquire new knowledge and skills and learn to pick things up quickly. Of course, the programming language I learned at the UT has since become outdated, but it has taught me to quickly catch up with the latest developments. You learn to adapt quickly - and how to collaborate, that is also very important.”

During her student years, Jeannine was an active member of study association AIESEC and a member of the Commotion and Poison societies. “I was an active student and I took part in all kinds of things. “Since I came from Veghel, I was automatically given a room on campus. After a year, a group of us found a room in the city centre.” Today, she is responsible for Dell’s plans to become bigger and more

profitable in seven European countries. She spends three days a week abroad to discuss issues such as investments, future plans and teams with the various management teams. On the other two days, she works from home.

It is important to her that Dell not only achieves impressive revenue figures, but was also selected as one of the most ethical corporations in the world. “Working for a great brand is one thing, but there is more than simply making a profit. Dell also wants to contribute to human progress. We focus heavily on sustainability, for example by using recyclable plastic whenever possible. In our staff policy, inclusiveness and diversity are key concerns.”

The company also hires recent graduates via its Graduate Programs. She has not really felt the effects of scarcity on the employment market.

“We are based in Amsterdam, where there are skilled employees aplenty. Our good reputation also helps.” From personal experience, she knows that ambition and drive are just as important as having the right certifications. “Whenever I hear

“There is more than simply making a profit”

someone hem and haw between international management or management and law, I think: They are both MBA programmes. Just get that qualification one way or another. Once you get a job in the business world, you’ll find out where your talents lie soon enough. That’s what happened to me. It all worked out in the end: I am a manager and I work at a tech company. In any case, a study at a technical university ensures you are off to a great start,” she says with conviction.

AT NGTV21, THEY KNOW HOW TO PARTY

Trees decked out in golden hues and an undisturbed pond: there are worse views you can have from your student house. Inside, the atmosphere is just as great. The residents of Niet Geheel Toerekenings Vatbaar 21 on the Campuslaan often eat their meals together, go on annual weekend outings, organise fancy Christmas dinners and throw great parties. So great, in fact, that they recently placed a cover around the TV to protect it from airborne beverages...

BY **Frederike Krommendijk** PHOTOGRAPHY **Eric Brinkhorst**

STUDENT HOUSE CAMPUSLAAN: GLORIOUS VIEW AND GREAT ATMOSPHERE

Anouk Elderhorst (20) is a new resident of NGTV21. For this first-year student of biomedical technology, the introductory party is over. It was a big success. A quiz with wine and shots, an escape room, getting more beer from the neighbours, popping balloons filled with a mixture of glitter, flour and beer and then running off into the bushes and swimming across the pond. "After taking a shower, it was time to party. I survived and it was a lot of fun," she says with a big smile on her face. "I still run into people on campus with glitter in their hair."

The parties at NGTV21 can get a little wild from time to time. In May, for example, when the house organised a reunion. "There were around twenty people there, including some from the early years. We thought they would take it easy and go home afterwards, but it turns out they had booked a hotel. That non-alcoholic beer is still sitting there, untouched. During those early years, there were only men in the house. The atmosphere was probably different than today, with six women and nine men," says Ruben Roozendaal (22), a student of mechanical engineering. He is in a relationship with his housemate Lieke, so he'd probably be the last person to complain about the mixed population. Two other residents are also in a relationship together. The rest is fine with that. "We see and hear a lot, but no couples have broken up here so

far," says Stefan Vries (21), a student of applied physics.

Cooking

Ruben is today's head chef. The person in charge of cooking also has to get the groceries. Some minor mistakes were made in calculating the required amounts, so the house will end up with a pot of pea soup big enough to feed an orphanage. That's tomorrow's lunch taken care of, then. Most of the residents come home to eat lunch during the seventy-five-minute break they have, which is quite unique. Cooking is quite a hassle. After shopping and preparing the food, you also have to clean up the mess you made. Thank heavens for the dishwasher.

Bang or Bonanza

On Monday evenings, most of the residents are present and accounted for during the weekly house meetings. "If you have to study for an exam or want to go to bed early, that's fine too," Anouk says. Otherwise, you stick around for a cup of coffee and some games like Bang or Bonanza or guilty pleasures on TV like Chateau Meiland or Ex on the Beach. These days, the TV is protected by a home-made wooden cover. It is sorely needed, because two previous TVs were destroyed by flying beer. The residents had to throw out their last TV shortly after buying it, which became a bit too costly.



Folkert Prins (26), who will graduate this year as an industrial designer, calls the residents “a close-knit, fun group of friends. We all love being here.” They are certainly a social bunch, because when new people show up to check the place out, they do not all sit across from the prospective residents. Instead, they welcome them in groups and chat a bit, just like they always do. Those who join in are most likely to be accepted into the house. You have to love a bit of fun to fit in here. Once a year, the residents go away for a weekend. The first day is always filled with some kind of athletic activity, such as mountain biking, exploring a cave or sailing, while the second day is spent drinking and relaxing in the sun. Then there is the annual Christmas dinner. It is usually February before everyone can find the time to get together, what with family visits and other responsibilities around the holidays. That’s fine, a seven-course meal is just the thing to spice up a boring month. In addition to these annual events, there are plenty of spontaneous outings as well, like flying to Italy on a whim because the plane tickets are only ten euros each.

The residents have plenty of other plans for the future, like turning that keg that Stefan cut in half with a grinder into a barbecue. However, there will be plenty of time for that when the trees start turning green again.

HOW CHARLIE ENDED UP ON THE BAR...

The cubicle where the doorman was posted until 2011 was called Charlie; a reference to the historic Checkpoint Charlie between East and West Berlin. Martin Versteegh, a student of mechanical engineering since 2009, saw that abandoned booth and the letters C-H-A-R-L-I-E that adorned it. He was able to restrain himself at first, but after the C disappeared he gave in to temptation and took the H and the L, leaving the rest. The heist has been so easy that it wasn’t belong before he took the remaining letters back to his student house NGTV21 as well.

“Later on, I grabbed a C from the Faculty Club to make Charlie whole again. I kept the letters in my room for a while and we mounted them onto the bar later. When I visited the house for the reunion, I saw that they are still there to this day.” Martin had a wonderful time in the house between 2009 and 2016. “It was always a lot of fun. Even if you didn’t go home for the weekend, there was usually someone else there too, so you were never alone.” Over time, he outgrew his thievery. Today, Martin is an upstanding citizen who works for a company in Culemborg that develops machinery for the food industry.

“We all love being here”

As energy coordinator at Essity in Cuijk (a manufacturer of paper hygiene products), Mark van Schagen's ongoing mission is to improve the paper factory's energy efficiency. During his time at the UT, he acquired the necessary knowledge of both process technology and entrepreneurship. The Advanced Technology programme, which was quite new in his time, gave him a solid foundation for his professional career. BY Hans van Eerden PHOTOGRAPHY Fokke Eenhoorn

ENERGY FROM EFFICIENCY IMPROVEMENTS

Mark van Schagen liked all the exact sciences and had trouble choosing between them. In 2004, he chose the Advanced Technology programme. At the time, it was a brand-new multidisciplinary bachelor's programme. With a catalytic bachelor's thesis, he readied himself for a master's in process technology; he ended up combining two: Sustainable Energy Technology and Chemical Engineering. His internship also had everything to do with energy. Using membranes, he extracted hydrogen during the gasification of coal. This hydrogen can then be used for fuel cells. "I conducted a practical test in a South-African coal mine," Van Schagen says.

He completed his master's project in the UT's Sustainable Process Technology department: researching the reprocessing of pyrolysis oil from biomass to create fuel for combustion engines. After his graduation in 2012, shortly after the financial crisis, jobs in the sustainable energy sector were scarce. He ended up at the engineering firm CB&I in The Hague, where he made designs for the oil and gas industry. "It was a great introduction to the world of process engineering and I had great colleagues. Still, this was not where my ideals lay."

In 2017, Van Schagen moved to Essity Operations Cuijk, where he became an energy coordinator. "Making paper from wet pulp is an energy-consuming process. In order to dry paper, a lot of water has to be evaporated. We use natural gas and residual heat from the neighbouring bioenergy plant for this. My job is to reduce our energy consumption by optimising every aspect of the process

and making our operators aware of the importance of these efficiency improvements. Every morning, we hold a meeting to assess the previous day's score card, which also includes our energy consumption. If there are any deviations in indicators, we look for explanations and try to implement improvements. I can also propose small and medium-sized investments. I regularly exchange ideas with my colleagues from other Essity plants. Twice per year, there is an international benchmark that we can learn from as well."

The work energises him. "It satisfies me and I am involved in national discussions as part of a working group of energy coordinators in the paper industry. We are tasked with drastically reducing CO₂ emission levels and energy consumption. A lot has already been done, but we have to go the extra mile. In this line of work, you have to switch quickly and zoom in on technical details or zoom out to see the bigger picture. I learned that at the UT. During my time there, I also acquired the necessary knowledge of process technology and entrepreneurship, which I need to develop a proper business case for an investment in efficiency improvement. The entrepreneurial factor was already incorporated into the Advanced Technology programme, where we were tasked with drawing up a business plan for a spin-off. The social link was also included: how does technology innovate and how do people deal with that? The climate problem presents an enormous challenge. There are many technologies available, but which should we use to get humanity to stop using fossil fuels?"



"In this line of work, you have to switch quickly and zoom in on technical details or zoom out to see the bigger picture. I learned that at the UT"

AGENDA 2020

Wednesday 12 -Thursday 13 February
Career Fair, Bedrijvendagen Twente

Friday 1 May – Saturday 2 May
Batavierenrace

Thursday 28 May
Entrepreneurial Day

Thursday 9 – Tuesday 18 August
Summer School CuriousU

Monday 31 August
Opening Academic Year

Friday 2 October
Alumni Talks

Further information:
www.utwente.nl/evenementen

UNIVERSITY OF TWENTE is a modern, enterprising research university. We work to develop the technologies that will define the future of ICT, biotechnology and nanotechnology. We are already acknowledged as world leaders in several areas. We approach new technology in the context of its relevance to society, applying insights from the social sciences and management disciplines. The combination of 'high-tech' and 'human touch' is extremely important to us. We are known for a design-led approach that addresses the needs of the private sector, and for the creation of new, innovative companies. We work on groundbreaking solutions to the major societal issues of the day, such as energy scarcity, sustainability, safety and security, and health. The University of Twente has over 3.150 staff, more than 10.000 students, a network of 49,000 alumni and some 1.000 spin-off companies.

COLOPHON

University of Twente is the magazine for alumni and partners of the University of Twente. and an edition of Marketing & Communications

EDITOR
Atilla Kerpisci

EDITORIAL COMMITTEE
Maurice Essers, Joe Laufer, Ratna Toering, Laurens van de Velde and Wiebe van der Veen

COÖRDINATION
Sandra Pool

TEXT
Hans van Eerden, Marco Krijnsen, Peter-Paul Verbeek, Wiebe van der Veen, Frederike Krommendijk and Ditta op den Dries

PHOTOS AND ILLUSTRATIONS

Fokke Eenhoorn, Annabel Jeuring, Frans Nikkels, Eric Brinkhorst and Uli Schillebeeckx

CONCEPT AND DESIGN

Josta Bischoff Tulleken & Jan Mak
MagSite.nl, Wormer

PRINTED BY
SMG groep Hasselt

CONTACT

University of Twente, Marketing & Communications, Spiegel Building, P.O Box 217, 7500 AE Enschede, tel. +31 53 489 2212, e-mail: magazine@utwente.nl
Change of address (alumni): utwente.nl/alumni or alumni@utwente.nl
Change of address (others): magazine@utwente.nl

For an online version of this magazine in English please visit: www.utwente.nl/magazine/en

ISSN 2210-8173
CIRCULATION 36.000

Printed on FSC-certified paper



Rechten: Niets uit deze uitgave mag op enigerlei wijze worden overgenomen, gereproduceerd of vermenigvuldigd zonder voorafgaande schriftelijke toestemming van de uitgever. Ten aanzien van de juistheid kunnen wij derhalve geen enkele aansprakelijkheid aanvaarden.

BY Hans van Eerden

Photography Frans Nikkels

Twelve million syringes used every single day all over the world present as many opportunities for pain, skin irritation, dosage errors or even contamination. UT researchers David Fernandez Rivas and Lea Milovich therefore want to reduce that number drastically with their spin-off InkBeams. The alternative, needle-free injection, is not new, but the duo has now developed a comfortable solution that uses bubbles. They certainly know bubbles, since they also run the UT spin-off BuBclean together, which makes ultrasonic cleaning more effective with bubbles.

For InkBeams, they use a laser to heat a fluid in a channel, creating a growing bubble. This bubble propels a drop of fluid, e.g. insulin, giving it enough velocity to penetrate several millimetres into a patient's skin. This is a painless, clean and accurate way to administer medication. Clinical trials have yet to demonstrate its efficacy. An ERC Starting Grant from Brussels has allowed Fernandez Rivas to further develop the procedure. Another application is the creation of tattoos, hence the working title InkBeams.

In 2012, Fernandez Rivas obtained his doctoral degree with research of bubble phenomena in the UT Mesoscale Chemical Systems (MCS) department. Later, he became the co-founder of BuBclean and a researcher at MCS. "The UT's old slogan, 'the entrepreneurial university,' resonated with my own ideas of science benefiting society." UT alumna Milovich (BSc European Studies and MSc Business Administration) became CEO of BuBclean last year. Milovich: "To give our marketing a boost, we are building a network, 'The Future Under our Skin,' in which we explore realistic applications for our technology."

INJECTIONS WITH BUBBLES



"The entrepreneurial university resonated with my own ideas of science benefiting society"

For more information, visit
www.novelt.com/nl/successverhalen/inkbeams