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The bachelor's programme in Medicine at Maastricht University is undergoing a major overhaul. Not only will its curriculum be brought into line with the latest social and medical developments, but its teaching method will also change. The students who started the English track of the Bachelor of Medicine last year were the first to be introduced to the new system. The Dutch-language programme will follow later, explains programme coordinator **Sylvia Heeneman**.



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www.arjenschmitz.com

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Alumni Carolin Muschalik and Lukas Figge

They met in 2014, when he was doing a PhD and she was finishing her master's at Maastricht University. One year ago **Carolin Muschalik** and **Lukas Figge** left on a trip around the world, intending to explore new places, enjoy life and satisfy their curiosity, but also to contribute to a more sustainable world. Exactly where it would take them, they didn't know. And they still haven't returned. "We're going with the flow, going with the slow. We'll see where we end up."

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<u>Foreword</u>

Maastricht University Executive Board Rianne Letschert, Pamela Habibović and Nick Bos

Internationalism is in the DNA of our region and university

Limburg is home to more kilometres of international border than any other Dutch province; borders that have, over the centuries, shifted on many occasions. Little wonder the region has developed strong ties with neighbouring countries and with internationalisation in general. This interconnectedness is reflected in major social transitions in its history. In pre-industrial times, agricultural workers crossed borders without a second thought, heading to areas where their labour was needed. The factories in early-industrial Maastricht attracted workers from Liège and its surrounding area. And the Limburg mining boom would have been impossible without the constant influx of workers from the rest of the Netherlands and abroad.

Our region, with its shrinking and ageing population, is currently facing economic and social issues such as digitisation, circularity and the energy transition. At the same time, it must not lose sight of the principles of broad-based prosperity. Responsibility for this will fall to various stakeholders in and outside the region not least in education, which will have a twofold task. First, to train (or retrain, as the case may be) residents as efficiently as possible for the future labour market. And second, to address shortages and bottlenecks in key sectors by capitalising on our location in the heart of Europe to both attract international talent and direct our own talent abroad.

Limburg boasts an international orientation, highquality educational institutions and the relatively new Brightlands campuses, where education and research go hand in hand with the labour market. As such, the region is a natural drawcard for talented Dutch

students aspiring to an international career, as well as talented international students who end up seeking employment on the regional, Euregional or Dutch labour market. One good example of a project reducing the gap between education and the labour market from the outset is KE@Work. Thanks to this honours programme, both Mane Minasyan and Husam Abdelqader quickly found rewarding jobs in the region (look for their interview in this UMagazine). This is one way in which Limburg and UM are staying true to the international DNA of the region. <



Photography Hugo Thomassen



Collaborativelearningat the heart ofthe revisedBachelorofMedicine

Education

Text Jos Cortenraad

Photography Harry Heuts The bachelor's programme in Medicine at Maastricht University is undergoing a major overhaul. Not only will its curriculum be brought into line with the latest societal and medical developments, but its teaching method will also change. The students who started the English track of the Bachelor of Medicine last year were the first to be introduced to the new system. The Dutchlanguage programme will follow later, explains programme coordinator Sylvia Heeneman.

Every year, 320 students start UM's Bachelor of Medicine after a selection procedure. A maximum of 60 are admitted to the English track. These students are serving as the guinea pigs for the new version of the programme.

Diligence

Sylvia Heeneman protests the use of the term 'guinea pigs', which she feels has negative connotations. "This has been in the works for years", she says. "You can't just up and change a curriculum or the teaching method. Many disciplines and experts are involved; diligence is paramount. The goal is to adapt the programme to new insights in the field of educational methods and design, and based on our experiences of teaching and assessment in other programmes. We update the curriculum every 10 years to place more emphasis on latest developments in prevention, for example, or new disorders and treatments. In this latest revision, we've also reviewed the teaching method itself."

Profound

Heeneman studied Health Sciences and obtained her PhD at UM. She was involved in the design of the Physician–Clinical Investigator (A-KO) master's programme in 2007 and has over 25 years of experience as a teacher and researcher. Together with her colleagues Judith Sieben, Loes van Bokhoven and the curriculum board, she reviewed the teaching method used in the medical programme. "The changes are quite profound", she says. "That's why we implemented the new system in the English track first. As it has about 50 students, it's easier to organise and evaluate. If all goes well—and we're all working hard to ensure that it does—the Dutch-language bachelor's will follow in one or two years."

Better teams

What does she mean by 'profound'? "In the new system, learning teams of 10 students work together with the same coach for a year. Teaching is based on an authentic professional task, like how to take care of a person found unconscious on the street. Learning teams meet weekly to work on all possible aspects and learning outcomes of the task, supported by teaching and learning activities such as skills labs, workshops and assignments. The students are new to working with the same group for a whole year. They're used to course periods of eight weeks, each focusing on a specific topic and taught by a different tutor. We've seen that working together over a longer period helps students become well-functioning teams, as they come up with solutions together if things aren't running smoothly. The contact with their coach is more intensive. And they must address conflicts that may arise; they can't just wait it out for eight weeks."

Assessment

The second profound change concerns the assessment method. Usually, each eight-week course period ends with an exam. "In the new system, students are responsible for collecting information and feedback on their performance in a portfolio. They receive feedback from peers, teachers and their coach. There are selfevaluation tests they can take to identify any gaps in their knowledge. The emphasis is on learning, rather than studying for a grade, and they have to adjust their learning trajectory themselves if they need to pay more attention to this or that skill, for example. The Progress Test is still part of the portfolio; it's a good way of measuring knowledge. The coaches play an important role in supervision, self-management and professional development. They get to know their students well and have a good sense of their progress. >

At the end of the academic year, they give an advice to the assessment committee who decides whether students have achieved the learning outcomes."

Coaches

In sum, Heeneman says, it's all about collaborative and self-regulated learning. "These are two important principles of Problem-Based Learning—the teaching method that has proven its worth in Maastricht—and taken one step further. And not just for the students. Coaches will also have more contact with one another. The medical programme currently has many tutors. In the new system, we'll have a smaller, core group of coaches, whom we can train and support, and who can learn from one another."

Evaluation

In June, the students of the English track will complete their first year of the new and revised Bachelor of Medicine. The initial feedback from both students and coaches has been constructive and positive, Heeneman says. "Obviously, we've been conducting evaluations. I think we're making good progress towards a great programme." < Svlvia Heeneman studied Health Sciences at UM and spend over 15 years at UM doing biomedical research, including a PhD in Vascular Pathology. Ten years ago she completed the Master in Health Professions Education and made a transition to educational research and management. Currently she is a professor in Health Professions Education, and programme coordinator of the Bachelor of Medicine.



Mirthe van Puijenbroek had the opportunity to choose between the Dutch bachelor's programme and the new Bachelor of Medicine-English track. She chose the latter, "mainly because English is the language of instruction", she says. "I spent a year in the US, and I feel this English track will give me more opportunities abroad at organisations like Doctors Without Borders. It will make it easier for me to communicate with colleagues and pick up the medical jargon."

Van Puijenbroek's enthusiasm has only grown since the programme began. "We work in teams of students with different backgrounds and nationalities. We're learning a lot about health systems in other countries.



Region

Paul van der Vee

Mane Minasyan

Husam Abdelgader

The curriculum is also very practical and we're assessed on the basis of our portfolios. Presenting, writing essays, acting in real-life situations everything is so interesting, and I think this method helps us retain more information than studying for exams. I'm happy with my decision."

Jonas Flöter

International character After completing a bachelor's in medical engineering, Jonas Flöter applied for the Bachelor of Medicine-English track in Maastricht. "During my studies, I realised that a purely technical job isn't for me. There's nothing wrong with staying put and working on innovations with a couple of colleagues, but it isn't what I want to do for the rest of my life. I wanted to stay in the medical field but go out into the world, meet lots of people. I was already considering studying medicine in Groningen when I came across this programme. I applied immediately. We have students from something like 15 different nationalities. Everyone has their own background and their own story. I find that fascinating."



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Frank Thuijsman is professor of Strategic Optimisation and Data Science and a member of the management team at the Department of Advanced Computing Sciences. He wanted to offer the best students from the Faculty of Science and Engineering programme the chance to work on real-world challenges. KE@Work was born of that desire: a recipe for synergies between UM and industry, and a way to keep talented international graduates in Limburg.

Regional companies can propose suitable projects and are matched with students according to mutual preference. The students work two days per week during course periods and full time for the rest of the year. The contract with the company lasts two years, and includes academic supervision by UM professors. For their efforts, students receive 36 ECTS, an honours degree and a monthly internship allowance.

Impressively for a programme with almost 80% non-Dutch students, nearly half of the Data Science and Artificial Intelligence graduates stay in the Netherlands to start their career. Among them is Husam Abdelqader. After his parents fled Palestine, Abdelqader was born and raised in Jordan. He completed his A-levels specialising in STEM subjects and developed an extracurricular passion for computers.

KE@Work a drawcard

"I taught myself to code, but also read up on related fields; I found AI really interesting," he says. Despite having family in the UK, he decided to study in the Netherlands. Being based in the EU would allow him to travel more easily, and experience more of Europe. KE@Work was one factor in his choice for UM. "I wanted to gain some work experience, and this was an interesting way of doing it without delaying graduation."

Abdelqader was delighted with the experience. "I got lucky. In retrospect, I think I actually got the best project. I'm biased, of course." For Integrin, a mentalhealthcare company in Geleen, he developed a machine-learning programme that would help the company make business decisions. The programme was so successful that he presented his findings at a European conference on machine learning.

"The data team consisted mostly of people with immigrant backgrounds. They spoke Dutch, but switched to English with me." One colleague was a fellow KE@Work graduate, whose supervisor was part of the same UM department. "It was really easy to settle in. Working at home during the pandemic made things a bit more difficult, but once I was in the office, I got to know more people."

In the KE@Work programme, students solve a complex, realworld problem while working at a local company. An honours track of the bachelor's in Data Science and Artificial Intelligence, KE@Work provides ambitious students with valuable work experience. Moreover, it contributes to keeping bright minds in the region.

The work experience was just as important as getting good grades.

Abdelqader continued to work for the company for another year after graduation. "I knew the people and had heard about the other interesting things they do, so it made a lot of sense. I really enjoyed it." He is now about to embark on a new challenge at Energy Essentials, a consultancy firm in Maastricht. Opportunities abound for data engineers, and while Abdelqader is not averse to moving to the Randstad, or even the UK, "I've grown to like Maastricht, the people, the lifestyle."

Staving for the lifestyle

Non-EU nationals have to be sponsored to work or study here. "If you're a student, it's quite easy: UM takes care of everything. But if you work, you need to meet certain visa conditions." Starting his new position at Energy Essentials before the end of his orientation-year visa meant the required income criteria was lowered, making it easier for his employer to keep him on.

Real-life skills

His fellow KE@Work alum, Mane Minasyan, also started looking for work locally on an orientation-year visa. She found a job just two days later, and is now eligible for the highly skilled migrant visa. A native of Armenia, Minasyan moved to Maastricht for the Data Science and Al programme. Her KE@Work project took her to APG, the Netherlands' largest pension fund, where she used machine-learning models to predict phenomena such as the rate of early retirement over time.

"The work experience was just as important as getting good grades. I really got to apply and deepen the skills and knowledge from my studies. I also learnt how to communicate what data science actually is to people with a business background," she says. "Juggling everything was definitely demanding, but it also gave me a lot of self-confidence."

Charming Maastricht

By the time she graduated, Maastricht had grown on her, partly thanks to the positive associations from her time as a student. "It's not too big or loud. It feels cosy, but it's still very international, and I don't feel judged for not yet speaking Dutch." Minasyan now works on automation and innovation at DHL Express. Some of her colleagues are fellow UM graduates; only a quarter of them are Dutch. Still, she intends to learn the language and stick around for several more years.

"I really like the work culture here. People take responsibility and communicate openly." Minasyan credits the KE@Work programme with what she considers her dream job at this stage of her career. "It was a good use of my time. Thanks to the quick, helpful responses from my professors and the company supervisor, I gained so much experience and many skills during my studies. I'm not sure I could have got this job and stayed here without having done that." <

Husam Abdelqader and Mane Minasyan graduated from the bachelor's in Data Science and Artificial Intelligence in July 2022.

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Endowed professor of the Practice of International Law Liesbeth Lijnzaad

News

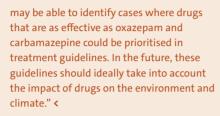


High concentrations of **psycho**tropic drugs in **Dutch surface** water

Scientists from Maastricht University and the National Institute for Public Health and the Environment (RIVM) have for the first time systematically investigated the presence of psychotropic medications in presence of psychotropic medications in surface water in the Netherlands. They found **tissue:** Simple but that the concentrations of oxazepam and carbamazepine appear to be so high that they may pose a risk to aquatic life. The study also showed that these drugs mainly come from households rather than hospitals. The researchers call for greater awareness among prescribing doctors and other health professionals.

UM researcher and psychiatrist Jurjen Luykx says doctors should be more alert to the dosages of the medicines they prescribe. "We have to take a critical look at how we prescribe medication, including the question of whether and how quickly we can start lowering the dose. We also need to advise patients on what to do with leftover medication so they don't just flush it down the toilet. Given the results of this study, we





The key to mimicking human impactful

Hydrogels are a special type of material that can support the growth of human cells, forming tissues such as skin or ligaments. While they exist naturally in the human body, hydrogels can also be made synthetically. Researchers at Maastricht University have fine-tuned these synthetic hydrogels to closely mimic the dynamics of human soft tissue, creating the ideal conditions for cells to grow as they would in the human body. These hydrogels can be printed in 3D, opening up opportunities to improve cell therapies, test medicines and grow small tissues in the lab. The researchers published their findings in the renowned scientific journal Advanced Materials. <



Ann Vanstraelen appointed to KNAW

Ann Vanstraelen, professor of Accounting and Assurance Services, was appointed as a member of the Royal Netherlands Academy of Arts and Sciences (KNAW). Together with 17 colleagues from around the country, she joins the KNAW's 600 existing members from various academic disciplines. She is the 20th Maastricht University academic to be appointed to the KNAW.

Vanstraelen is a leading researcher and an important innovator in auditing and accountancy. In recent decades, this field has developed into a thriving international research area, responding to the growing demand for reliable data and control in the business and public sectors. Vanstraelen's research focuses on financial reporting and governance issues. Her work on the reliability of sustainability reporting opened up an entirely new area of research. <

Negotiating in a floral dress



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<u>Portrait</u>

Text Annelotte Huiskes

Photography Arjen Schmitz

She was the first woman in the **Dutch Ministry of Foreign** Affairs to be appointed Legal Adviser, the chief civil servant in its International Law department. She relished negotiating between parties at a global level. Now she serves as a neutral arbiter in another international legal setting, as a judge at the Tribunal for the Law of the Sea in Hamburg. And as endowed professor of the Practice of International Law, Liesbeth Lijnzaad also teaches students the tricks of the trade. Here she discusses the secret to successful negotiation, a feminist interpretation of international law, and the Scout Movement.

→ Liesbeth Lijnzaad studied

International Law at the University of Amsterdam. She obtained her PhD in 1994 from the Rijksuniversiteit Limburg (later Maastricht University) on reservations to UN human rights treaties. From 1994 to 2017, she worked for the Dutch Ministry of Foreign Affairs, the last 11 years of which as Legal Adviser. In 2017 she became a judge at the International Tribunal for the Law of the Sea in Hamburg. She has held an endowed chair in the Practice of International Law at UM since 2011.

Liesbeth Lijnzaad worked for the Ministry of Foreign Affairs for 23 years. For 11 of those she served as Legal Adviser, the head of the International Law department. It was a dynamic period, with countless negotiations and endless travel. The work was addictive, especially negotiating. "One of my areas of expertise is the law of war, which is still very much a man's world. Conference rooms were usually set up such that each state had a desk with a name plate on it and two chairs, one for me and one for a member of my delegation. Behind us would be two empty chairs used by representatives from other states when they came over for a chat. You'd lean back a bit as they whispered their take on the meeting in your ear. That way, you could view what was happening from a different state's perspective. Often someone would sit down there and strike up a conversation with the man next to me, attempting to make a deal, and he'd say, 'You should be talking to her, she's the leader of our delegation.' I enjoyed those moments," she says with a broad smile. "I'll write an autobiography one day. I've already come up with a title—Negotiating in a Floral Dress."

Negotiation course

To Lijnzaad, it never mattered whether she was negotiating with a man or a woman. "Maybe I'm just a very macho negotiator?" Either way, it's a misconception that those who know everything about the subject are also the best negotiators. "A good negotiator knows enough about the subject, but enters into negotiations with an attitude of 'I'm nice, reasonable and open-minded—and I'll get what I want.' That's psychology. It's important to be friendly and courteous, to earn a bit of goodwill, but at the same time, you have to exude a sense of 'our position



Maybe I'm just a very macho negotiator? is the most reasonable position.' Negotiation courses teach you how to negotiate one-on-one, but that's not how international negotiations work. If I couldn't get the French on board, I'd put out feelers to other French-speaking countries. I'd talk to Senegal, and Cameroon, and a Francophone member of the Canadian delegation: 'Don't you agree that our position is sensible? And if so, tell France, won't you?' That always gave me a thrill."

But the work was also difficult at times, especially when sensible legal advice was ignored. Given the lack of legal justification for the Iraq War, her department repeatedly advised against getting involved. But the government decided otherwise. "We regularly fielded questions from the Dutch legal field—were we aware that it was unlawful? Of course we were, but our internal discussions were confidential." Six years later, our memo on the war made the front page of the national newspaper NRC when it was leaked by somebody whose identity remains unknown to this day. "It showed that we'd given the right advice."

All on the same page

Lijnzaad speaks with such passion and enthusiasm, drawing listeners into her story, that it is easy to see why she is a born negotiator. She attributes many of the social skills she uses to get everyone on the same page to Scouting. She was a member for no fewer than 52 years, climbing the ranks from Brownie all the way to World Scout Committee member.

She was eight years old when her family moved to Sèvres, near Paris, for her father's work. "My parents thought I was lonely, and because the church had a Scouting group, they figured I should join. That's how it started. Every two weeks, I spent one whole Sunday there. It was amazing. In Scouting, you go on adventures you'd never have with your parents: experiencing the joy of climbing a tree and falling into a ditch. You also learn to work together and be independent."

Lijnzaad is the eldest child. When she was not yet five years old, her mother died giving birth to her youngest brother. "It had a huge impact on us. Suddenly she was gone. First an older aunt babysat us, then housekeepers, and one fine day my second mother arrived. All three of us were very happy with her; she was a perfect mother to us. Thanks in part to her, we all landed on our feet."

Unbeschreiblich weiblich

According to her second mother, she was the most difficult of the three children. "I've never been as feminist as I was when I was 14. I read *The Second Sex* by Simone De Beauvoir, my heroine was Joke Smit, and I adored Nina Hagen. In high school, we did a lot of protesting. I used up all my mother's old bedsheets making banners. We demonstrated against the nuclear reactor in Petten, against cruise missiles, in support of abortion rights. I was very outspoken back then." She smiles. "That wore off a little during my time at the Ministry of Foreign Affairs."

She may have become less outspoken, but she certainly hasn't lost her feminist streak. Alongside the law of war and the law of the sea, one of her areas of expertise is the feminist interpretation of international law. A lot of work remains to be done in this area. "It deals with questions like how the law takes women into account, the role of gender patterns in law, and how the law deals with diversity. The law of war initially saw women primarily as victims. This victim narrative was useful for putting the perspective of women on the agenda, but you don't want to dwell on it. > I'm involved in writing a major commentary on the 1949 Geneva Conventions, which are used not just in academia but also by the armed forces. The current edition dates from the 1950s and 60s, so we're updating it with today's knowledge in mind. For example, there's a rule stating that the occupying power must ensure that the population in an occupied territory receives essential goods. This was always understood to mean water and food, but that's too limited; we now include menstrual products. Unfortunately, we have to spell out the things that are important to women—this is not only a man's world. It's good and meaningful work."

Business trips

In 2017, she became the first Dutch judge to be elected to the International Tribunal for the Law of the Sea. As judges are not permitted to have ties to the state, it marked the end of her career at the Ministry of Foreign Affairs.

"I was Legal Adviser for 11 years, which is a relatively long time. I was quite young when I took the job. It's normally seen as an end-of-career position, so there was no logical next step for me. I briefly considered becoming an ambassador, but my wife had no interest in being an ambassador's wife. She has her own career as a structural engineer. And given the choice between a generalist or a specialist position, I feel comfortable with the latter. So the election came at exactly the right time."

Her years as a top civil servant were exhausting. "My record was 28 business trips in one year. After I stepped down, I spent about two months catching up on sleep to be able to start afresh at the tribunal. It's a lot more relaxed—although I looked at my calendar yesterday and saw that I still have four trips scheduled between now and July. Then again, I'd hate to sit at home twiddling my thumbs for three months."

Helping young people find their way

Her work is clearly her passion. She combines her job in Hamburg with an endowed chair at Maastricht University. "I enjoy working with students and PhD candidates. And I think I have interesting things to share with them." Under the banner of the American Society of International Law, she also mentors a group of young women at the start of their legal careers. "It's a small club of five women, from France, Lebanon, the Netherlands, Korea and Colombia. One works at the International Court of Justice, another at the European Patent Office. We sit at my kitchen table and talk about things they come up against in their careers. How do you deal with a boss you can't stand? What if you want to have children? How do you structure your CV? It's a lot of fun."

She feels privileged. "I've always felt explicitly valued by my employers. That boosted my self-confidence and independence. It's just a wonderful life", she concludes, beaming. And now it's time for her to go and prepare today's lecture. "It's about Hugo de Groot's ideas and what his opponents thought of them." Dense stuff, but the students will no doubt be hanging on her every word. <



<u>News</u>



NWO Vici grant for **Milene Bonte**

Milene Bonte, professor of Cognitive Neuroscience of Language and Literacy Development at the Faculty of Psychology and Neuroscience, received an NWO Vici grant worth €1.5 million. The money is earmarked for research into the timely identification of children in need of additional support to prevent reading problems.

Learning to read is more difficult for some children than others. Problems such as dyslexia are often diagnosed and treated only after a child has responded inadequately to reading instruction, around eight to nine years of age. Yet early intervention is crucial for optimal reading development and, in turn, a child's future prospects. To facilitate the prediction of reading problems at an early stage, Bonte and her team design tailored learning tasks and map individual differences in children's developmental trajectories by modelling their performance and brain activity. Using these insights, they are developing a digital learning test that predicts which children will learn to read easily and which will need additional support to prevent the development of reading problems.

Together with the Veni and Vidi grants, the Vici funding is part of the NWO Talent Programme. Vici is intended for senior researchers with a demonstrated ability to develop their own innovative research line. <



New facilities at Brightlands Campus Greenport Venlo

Three new research and demonstration facilities are set to open at the Brightlands Campus Greenport VenIo: the Food Concept Centre, the Experience Centre for Future Food, and a base for startups and spinoffs.

The Food Concept Centre will be an expertise centre for consumer research and product optimisation, expanding on the current Brightlands Test, Taste & Concept Centre, the Laboratory for Behavioural Gastronomy, and the Food Claims Centre Venlo. The Experience Centre for Future Food will offer visitors a multisensory experience of horticulture trends and developments, enhancing product understanding and market success. The third initiative will provide a physical base and workshop for startups and spinoffs on the Venlo campus.

The developments are funded by the provincial government through the second tranche of the Regio Deal Noord-Limburg. Co-initiators include BASF's vegetable-seeds division, Scelta Mushrooms and ZON Fruit & Vegetables. <

Subversive crime through high-value unique goods health

Crimes involving high-value unique goods, such as luxury items and works of art, have undergone a surprising evolution. The lure for criminals once lay in stealing or forging such objects. Now, it involves transforming them into financial assets in order to obscure illegal transactions, launder money, hide wealth or evade sanctions. A major new research project, PRICELESS, was recently launched to gain insight into this type of 'subversive crime' (forms of crime that undermine the integrity of society). The project is led by Christoph Rausch, associate professor at Maastricht University and affiliated with the Maastricht Centre for Arts and Culture. Conservation and Heritage (MACCH). With a budget of €1.3 million, PRICELESS is funded partly by the Dutch Research Council (NWO) and partly by public and private partners.

"The enforcement of international sanctions against oligarchs following the Russian invasion of Ukraine, but also during previous global conflicts, shows how the financing of terrorism is closely linked to the assetisation of high-value unique goods," Rausch explains. "The Netherlands is also struggling with subversive crime in the form of money laundering, financial fraud and tax evasion, in addition to social inequality and an increasing concentration of wealth. Our primary goal with this research is to prevent and detect subversive crime. This will help to reduce the burden on the public and protect society at large from subversive criminal practices." <



Tears of

scientific

happiness

Science

Ludo Diels

Photography Sem Shayne

Crocodile tears

"There's no such thing as crocodile tears," Gijs laughs as she contemplates the question: is the act of crying and the associated shedding of tears exclusive to humans? "Animals do have tears, but they don't cry like people. Although they have tear glands, we don't know for sure whether they're in touch with their emotions. What we know is that tear fluid, with the substances it contains, is gaining in importance in both diagnostic research and in predicting human diseases. We examine 'basic' tears, not tears of sadness or pleasure. Emotions belong to the scientific domain of psychology or the experiences of our daily lives."

Tears are daily fare for Gijs. Not only as a biochemist, but also as a mother of three who regularly finds herself wiping her young children's eyes with a handkerchief. "We don't associate tears with other bodily fluids, like urine, which smells much worse. Tears are lovely. Ultimately, however, they're just a form of excrement that protects our eye. Tears are made up of water, enzymes and proteins made by cells. They protect our eyes against external influences, such as viruses, and expel harmful substances. And they shield the cornea, the only part of the body not protected by skin. So we shouldn't underestimate the importance of tears. They're a mode of transport and a repellent in liquid form."

Ophthalmology

The researcher, who lives in Dessel in northeast Belgium, was not destined to become a scientist. "We had a tree nursery at home. My two brothers joined the business, but I wasn't all that into plants. I was the only one in my family interested in the medical world. When I was 19 I moved to Leuven to study pharmacy. The funny thing was that the first course I took there was on medicinal plants. My father and I went looking for those plants in the woods."

"Over the years, I was increasingly drawn to biochemistry, especially cells and molecules. Eventually, I was 'doctored', as we say in Flanders, in 2015 in Liège. I did my PhD on cancer research, conducting research with laboratory animals. Then I applied for a postdoc in Maastricht and ended up in the Ophthalmology Department at the MUMC+. For a biochemist, the clinical picture is fairly irrelevant. We work at the molecular level; we want to know what happens in the cell. So all you need to know is how to do good research." > Marlies Gijs is doing pioneering work in the booming field of tearfluid research. The analysis of tear fluid is a promising alternative to more invasive examination methods, which can be both painful and risky. And it is proving its worth in neurological research, with the tears of Alzheimer's patients playing a leading role. "Tears are all warm and fuzzy. They're in songs, poetry, films. And as it turns out, they're useful in biochemical analysis, including Alzheimer's research."



We shouldn't underestimate the importance of tears.

Tear-fluid biomarkers

Gijs was already acquainted with tear fluid from her previous research, but in Maastricht she was given the chance to go big. "Research on tear-fluid biomarkers [substances that indicate a certain condition] wasn't new, but it was rare. Thanks to modern techniques it's now easier to make diagnoses from extremely small volumes of tear fluid. By comparison, you need much larger volumes of blood."

Gijs's research is not limited to ophthalmology. Tear-fluid research is also proving valuable in neuroscience. "I collected many tear samples from COVID patients, and saw straight away that the virus could also be detected there. So it's clear that tear fluid has a broad range of uses. I have no doubt that it will see many more applications in the future. In neurological research, for example, it can replace cerebrospinal fluid, which is difficult to extract. Eyes are actually protrusions of the brain, so they can also tell us something about brain diseases. Our tear research has identified two substances, or biomarkers—amyloid and tau—that occur in Alzheimer's and can normally only be identified via an epidural." Gijs received an NWO Veni fellowship for this research in 2019.

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Marlies Gijs, assistant professor at the University Eye Clinic Maastricht, holds a master's in Biochemistry and Biotechnology from the University of Antwerp and a doctorate in Pharmaceutical and **Biomedical Sciences from** the University of Liège. Her postdoctoral research at the University Eye Clinic Maastricht included the development of a new drug-delivery device for the eye. In 2019, she was appointed assistant professor of Molecular Ophthalmology. Her research focuses on the fundamental and translational properties of tear fluid and the ocular surface.

Network

Tear fluid is not only easy to obtain and widely applicable, but will also allow future research on various diseases to be carried out more quickly and effectively. Commercial applications are conceivable, too, once diagnostic strips are on the market. These strips are comparable to a pregnancy test, and with just a drop of tear fluid will be able to provide a definitive answer about a certain therapy. The Tear Research Network, founded by Gijs, intends to conduct further research on these strips and their applications. "We work in an international field, which means we'll continue to exchange knowledge. The future prospects of this research are good." Gijs laughs. "It's enough to bring tears to your eyes, but tears of happiness." <



How Russe war against Ukraine is challenging the EU

PhD candidate

Anna de Jong

Ruben Tans

PhD candidate

Valentina Golunova

International

Text
Hans van Vinkeveen

Photography Sem shayne

Valentina Golunova, Anna de Jong and Ruben Tans, PhD candidates at the Maastricht Centre for European Law (MCEL), organised a workshop on the impact of the Russian invasion of Ukraine on EU law. Issues such as sanctions against Russia and the temporary protection of Ukrainian refugees pose legal dilemmas and affect the interpretation and application of FU law.

She was shocked when the war broke out. Valentina Golunova, a Russian citizen, had been living in the Netherlands for four years. "I'd been concerned about the escalation of the conflict for some time, but I was still hoping there wouldn't be a full-scale invasion. It's unbelievable that such gross violations of international law and human rights are still happening in the 21st century. And it's painful to realise that it's my own country committing those violations."

At a meeting of the MCEL research institute, it became clear that a number of visitors were working on topics related to the invasion. Golunova had an idea: why not organise a workshop on the transformative impact of the war on EU law? "There were people who thought the conflict would remain local and wouldn't spread to Europe, but I had my doubts. We had to draw attention to the broader consequences for actors not directly involved in the military conflict." She also had a personal motivation. "I wanted to support Ukraine and show that not all Russians support Putin. Many of us feel the pain, although we're obviously not the victims here."

Temporary protection

A surprising array of perspectives came to light during the workshop, say the three PhD candidates. There were lectures on the consequences of the sanctions against Russia for the art market and internet law. An online speaker suggested letting the war peter out by putting a stop to fossil fuels. Ruben Tans' lecture focused on why the EU felt responsible for welcoming Ukrainian refugees. They are part of the European family, so the narrative goes, which also explains why the EU directive providing temporary protection for a group of people was not triggered when Syrian refugees began arriving in Europe en masse a few years earlier.

In the case of Ukraine, the directive was triggered for the first time in the history of the EU. Tans views this as a milestone in European migration history. In his presentation, he asked: how long is 'temporary'? What if the war continues? "The alternative—following the regular asylum procedure—is practically impossible for both the hundreds of thousands of refugees and the member states themselves. The EU may need to come up with a new way of helping these people."

Oligarchs

Anna de Jong's presentation dealt with the unforeseen consequences of the measures against Russia for art and the art market. "All of a sudden, Russian oligarchs on the sanctions list were no longer allowed to donate to cultural institutions or visit TEFAF. The EU also imposed a prohibition on transporting works of art across European borders. At the time, Paris had a large collection of art on loan from a Russian oligarch, and Russia had a large collection of paintings on loan from France. How do you get that art back? You can have clear guidelines for sanctions in mind, but putting them into practice is more complex. After all, Europe has always promoted the free movement of people and goods. It's clear that throwing up barriers-saying 'You can't' instead of 'You can'—is new for the EU."

War propaganda

The war also has implications for EU media and internet law. Golunova points to the consequences of the sanctions against Russian war propaganda. Russian broadcasters and media outlets such as RT and Sputnik have been banned from distributing their content in the EU. The censorship is justified, she says, as these outlets are disseminating misinformation and war propaganda. "But the ban may also restrict the freedom of expression of EU citizens. The European Commission has asked Google and other online platforms to remove content from these outlets from search results and to ensure that internet users can't share their articles or videos. This goes against an important principle of internet law-the prohibition of general monitoring by online platforms—and also contravenes the EU Charter of Fundamental Rights. Even if media outlets are propagating misinformation, it's important for internet users to be able to discuss, fact-check and criticise it."

A new EU?

The workshop not only showed that the war in Ukraine has diverse repercussions for EU law, but also brought to light an underlying transformation. The war

Throwing up barriers is new for the EU.



Valentina Golunova, Anna de Jong and Ruben Tans are PhD candidates at UM and members of the MCEL research institute. Golunova's research focuses on the transformation of EU regulations for online platforms and the impact of the new rules on freedom of expression. De Jong's dissertation examines EU regulation of the art market. Her latest publications address the impact on culture of the Europeanisation and privatisation of public security. Tans' research investigates the integration of refugees into the labour market and educational systems of Belgium and the Netherlands

views itself and seeks to portray itself might be changing." <

Special collections

The Maastricht University Library holds various special collections of major significance. They are used by university staff for teaching and research, but also available to the general public. The Jesuits Collection is the most important special collection, comprising 250,000 volumes in the fields of philosophy, history, anatomy, literature, theology, social sciences, law and more. The oldest books date from the 15th century, the latest from the 1970s. Some of the library's special collections have direct links with the province of Limburg and its history. <

Spread

Photography **Paul van der Veer**

Can you put a price on sustainability?

Is sustainability a worthy goal in itself? Or only if it makes financial sense? <u>Nils Kok</u>, professor of Real-Estate Finance, and <u>Pim Martens</u>, professor of Planetary Health, discuss whether our approach to sustainability is too closely tied to the capitalist paradigm.

Sustainability

Text Florian Rait

Illustrations Veronique de Jong

JMagazine / June 2023

Sustainability is a hot topic—so much so that everybody seems to be talking about it nowadays. But are they all talking about the same thing? "I don't trust anyone who claims to have the one definition of sustainable development," says Pim Martens.

His definition is broader and more nested than most. The economy is part of society, which in turn is part of the environment— not the other way around. In his view, we should conceive of sustainability as both subjective and dynamic. "The more I learn, the more open my definition becomes." Systems thinking, he says, is the way forward. He stresses that we need to understand just how dependent humans are on nature, which underwrites our very existence. A mathematician by training, he concedes that this approach might sound vague or philosophical.

Built environment

Nils Kok focuses on real estate, which has concrete, measurable effects on sustainability. "Forty percent of global carbon emissions come from the construction and operation of our built environment." He studies the impact of buildings on the environment. Energy efficiency comes to mind, though there is more to sustainability than that. "We spend 70% to 90% of our time indoors. Air quality, natural-light exposure and how much we're incentivised to move have a huge impact on our health and wellbeing." Kok's research explores nature-based solutions. These range from using sustainable building materials, such as timber, to biophilic designs, which bring nature into the built environment. The question is whether these solutions are worth pursuing because they are intrinsically good, or because they ultimately make people more productive. Are employers prepared to invest in their workers' wellbeing for its own sake, or only because it saves them money by reducing sick leave?

Most

companies

just like

the PR.

In today's capitalist society, Kok believes investors will only back sustainability if it is supported by a business case. This, Martens says, is because we have been brainwashed to put economic thinking ahead of other considerations. "Maybe I'm too naïve in thinking we >







like nature for its own sake. But research suggests it has measurable benefits; that we thrive only if we're close to nature, close to others."

We are facing a crisis, Kok agrees, that innovation alone cannot solve. While the system will not change overnight, he does see progress. "Increasing energy efficiency and reducing carbon emissions are by no means a done deal. We can see a pathway, but it's unlikely to be enough. It depends on the incentives. Homeowners and investors will do what's good for their bottom line."

Continuous growth is unsustainable

Sustainability makes sound fiscal sense, Kok says, but individuals and companies often make irrational decisions due to short-term interests or emotional judgements. Also, the market is skewed. "CO2 emissions are currently an externality; you don't pay the full cost of the energy because the environmental impact isn't factored in. We should address that through regulations and taxation."

This won't be enough, Martens warns. "It just reaffirms and strengthens a system that's not working. Increased benefits for shareholders imply continuous growth, which isn't sustainable. Framing things in terms of short-term profits misses the bigger picture. People need to internalise the fact that we're a part of nature."

Regardless, the money is slower to follow the facts than economists would assume. "I've been talking to investment banks about health and wellbeing for years, but the penny only dropped once the pandemic hit," says Kok. "There's been a business case for investing in renewable energy for a long time. It was only when fossil-fuel prices spiked after the invasion of Ukraine that everyone wanted to invest. But by then, there were material and labour shortages."

The business case for damage control

Investments in climate risk, biodiversity and circularity are still lagging, Kok says. "We're now on a trajectory where climate change is inevitable, so we'll have to adapt to rising temperatures. How can we cool buildings? How can we protect our built environment from the rising sea level?" Extended droughts are a particular problem in the Netherlands, where many older houses are constructed on wooden pilings. When ground-water levels plunge, the pilings are exposed to air and fungi and begin to rot.

"Building certificates incentivise developers to aim for energy neutrality," Kok explains, "but they neglect things like water efficiency, greenery, or proximity to public transit—most aspects of sustainability, in other words." This is mainly because the benefits are in the form of damages avoided, and thus harder to measure. The same goes for biodiversity loss, a key concern for Martens. While existentially threatening, it is difficult to evaluate under the current paradigm.

Martens stresses the urgency of the situation. "It's no longer enough to slow the damage; we need to start regenerating." He is frustrated by the inaction and hypocrisy. "Most companies aren't really interested in sustainability; they just like the PR." He also draws attention to the issue of food and diet, pointing out that it's not just the what—regional, seasonal, low on animal products—that is needed, but also the how together, joyfully.

Emancipating ourselves from the growth-focused consumer capitalist paradigm is thus not about depriving ourselves. Rather, it is about re-evaluating what is desirable. Martens is motivated by an appreciation of nature, Kok by human wellbeing. Coming at the problem from both angles will ultimately enhance sustainability. < Real-Estate Finance at Maastricht University. He delivered his inaugural lecture People, planet, property: How buildings shape the environment, your health and your wealth in February.

Pim Martens is professor of Planetary Health at Maastricht University's Campus Venlo. He delivered his inaugural lecture Planetary health: The recipe for a sustainable future on 21 April 2023



Change the work,

Professor of Work and Organisational Psychology Fred Zijlstra

Research and society

Text Milou Schreuders Photography Philip Driessen

UMagazine / June 2023

not the workers

Professor <u>Fred Zijlstra</u> is set to retire in May. How does he look back on his career? What is his take on current developments in the field of work and organisational psychology? And how can we, as a society, best organise work—now and in the future?

What makes his field—work and organisational psychology—so interesting? Fred Zijlstra doesn't have to think long. "It brings research and practice together. The central theme of our research is work, and for many people, work is a huge part of their daily lives. As a researcher, you can have a concrete social impact." This is no small thing for Zijlstra, who describes himself as "an academic with an eye for practical relevance."

Always available

Over the years, he has witnessed and studied all kinds of social developments in the world of work. Take the issue of perceived workload, which seems to have exploded since the 1990s. This is, he says, because work has become more intense and complex over the years. "Since the Maastricht Treaty of 1992, which established the European Union, international competition has increased. As a result, companies are constantly looking for ways to cut costs. We see fewer and fewer employees doing the same amount of work. Jobs are scrapped, roles change, people work more often in teams—all this can cause stress."

Increased use of office automation and technology may also affect workload. Technological advances, Zijlstra points out, enable us to work wherever, whenever. We have become less tied to the workplace and office hours. "This is convenient, but it also makes employees feel they have to be available around the clock."

Instinctive response

At Maastricht University, he is primarily involved in research on workload and reintegration; returning to work after a burnout, for example. "Economic incentives, such as higher or lower benefits, don't have much effect. How people perceive their health is more important, and should play a key role in reintegration decisions. We need to pay more attention to the person behind the employee."

As well as making intuitive sense, this sounds relatively easy to accomplish. So why is one out of every seven employees in the Netherlands currently on sick leave with burnout? "One reason may be that employers need a better employee wellbeing strategy. Managers still tend to respond to stress on instinct, rather than from a theory-based or policy perspective. As a result, they misjudge situations or personal circumstances."

No matter what solutions we come up with, Zijlstra says, we will never be able to remove work stress altogether. Some causes, such as the increased use of technology, are here to stay. "That's why, as a society, we would do well to organise work differently."

Rethinking staff shortages

Organising work differently is the focus of the Centre of Expertise for Inclusive Labour Organisation, co-founded by Zijlstra. "Our goal is to get as many people into work as possible. The underlying idea is that it's more effective for organisations to change the work itself, rather than the workers. I dare say that, when we founded it, we were one of the first centres in the Netherlands based on that principle."

The centre offers companies information, training programmes and tools. One of their first clients was a hospital with a shortage of nurses. "Instead of just assigning them more and more tasks, we took a critical look at the work itself. We found that the work could be organised differently. Eventually, a whole new group of people—medical assistants—were employed to support the nurses. That way, the nurses didn't get overworked and patient care wasn't compromised."

We will never be able to remove work stress altogether.

Future

What does the future labour market look like? Zijlstra paints a challenging picture. "Technology in the workplace will increase—will everyone be able to keep up? And the population will only continue to age. To keep society going, we have to do better at including and accommodating people at the fringes of the labour market, from people with disabilities or little education to migrants."

Balance

Zijlstra has no intention of twiddling his thumbs at home; he is still too enamoured with his field. "I'll keep working at the centre of expertise and on a number of PhD and other research projects two days a week. I'll have fewer responsibilities, though, which will be nice. My workload has gone up too in recent years."

He is looking forward to sailing, cycling and travelling more. And he plans to write a book on the history of work and organisational psychology in Europe. But his focus will be on "achieving a good work-life balance" as befits a professor of Work and Organisational Psychology. <



Fred Ziilstra is professor of Work and Organisational Psychology at the Faculty of Psychology and Neuroscience. The first in his family to attend university, he studied work and organisational psychology in Groningen and obtained his PhD from Delft University of Technology. After working at Tilburg University, the University of Surrey and elsewhere, he joined Maastricht University in 2006. On 8 June, he delivered his farewell speech 'Looking to the future. The value of good work'.



PhD candidate Lea Beiermann This year, <u>Lea Beiermann</u> earned her PhD from Maastricht University. Her dissertation, A co-operation of observers, examines the role of amateur microscopists in the late 19th century. For her research, she made use of citizen science, similar to the microscopists in her book. One of her supervisors was <u>Cyrus</u> <u>Mody</u>, professor in the History of Science, Technology and Innovation at FASoS. Beiermann explains how she chose the subject of her dissertation and the role her supervisors played.

Observers observed

<u>Professor – student</u>

Text Margot Krijnen

Photography Philip Driessen It all started with her internship at the University of Leicester during her research master's programme in Cultures of Arts, Science and Technology (CAST). "I thought I was going to work with a literary scholar there, but the person who was supposed to supervise me had delegated the job to a historian. The first couple of weeks were difficult, but then I started to like it. The University of Leicester has an archive with a big collection of scientific periodicals. It was in one of these periodicals that I read an article about microscopy. I found out that people in the 19th century saw microscopy as a discipline, like geography or biology. That seemed so odd to me that I wanted to learn more."

Correspondence

"The CAST programme is very interdisciplinary; it covers art, visual culture, literature, technology and history. We like to think we prepared Lea well for the sudden switch during her internship. She was able to adapt very easily," Mody says. "She wrote such a good master's thesis on the microscopy subject that her supervisor at the time, Raf de Bont, suggested that she apply for an NWO fellowship and write a dissertation. We managed to convince her." Beiermann received the fellowship and started her PhD research at UM. "I found out that the old periodicals were citizen science avant la lettre. Microscopists had their own correspondence columns where they communicated and shared information with others. A lot was happening on those pages, almost like a continuous question-and-answer thing. They exchanged not only knowledge, but also slides, for example slides of bugs against butterflies. That was in the 1870s."

People and periodicals

How did people interested in, say, slides of bugs find one another in those days? "These periodicals were passed around a lot," Beiermann explains. "Microscopy and scientific societies had their own collections that members could borrow and find people interested in the same subject. Then they would write to the editor, who connected them with people in the correspondence column." Were they always scientists? "This was at a time when scientific training was relatively new. Also, the boundary between a scientist and a non-scientist was more permeable. Disciplines like biology and life science were quite new. For a long time, you couldn't get a degree in those fields, and besides, a degree did not distinguish you as a scientist. To me, it didn't matter whether they were scientists or not. I was interested in a very diverse group of people. Some just liked to look at things through a microscope; for them it was more of a hobby." >

Citizen science

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 Before joining UM, Cyrus
 Mody was an associate
 professor at Rice University.
 He is professor in the
 History of Science, Technology and Innovation at
 FASoS and director of the
 Science, Technology and
 Society Studies research
 programme.

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Lea Beiermann holds a BA in Creative Writing and Journalism (Universität Hildesheim), and an MRes in Cultures of Arts, Science and Technology and a PhD from Maastricht University. She now works as a scientific editor and writer.

Beiermann invited citizen scientists — not unlike those 19th century hobbyists — to help analyse her sources and materials. "There's this big citizen-science web-based platform called Zooniverse. You can sign up and volunteer for all kinds of projects. My research project attracted around 2,300 IP addresses. The Biodiversity Heritage Library allowed me to upload part of their collection of scientific journals and books on the history of life sciences to Zooniverse so volunteers could identify microscopy illustrations."

Why is citizen science so important? "It can help make science more democratic and get more people involved in it. I know some people were truly very involved in my project. The volunteers had a real impact on my research. Also, they contributed their own ideas and started collecting their own sources, for example on female illustrators. It enriched my own research and they got satisfaction from it."

Cooperation

"I believed in the project right from the start," Mody chimes in. "I really enjoyed working with Lea, my colleague Raf de Bont and Stefanie Gänger from Heidelberg University, Lea's third supervisor. Lea's

background is in journalism and poetry, so her writing is always spot on and easy to read. The arguments were very clear, so in that sense, it was quite easy to supervise her work. I'd never come into contact with citizen science or digital humanities before. Now, it's a growing part of my work. Lea gave me a nice window onto that world. I also drew inspiration from her work with Historians for Future, a platform that supports the climate movement by providing a historical perspective on today's climate and biodiversity crisis. Lea set up the platform in 2020 together with two senior colleagues." Beiermann: "I learnt a lot from my three supervisors, who each have their own expert knowledge. And just as importantly, our meetings were always interesting and enjoyable. None of us took ourselves too seriously—that always helps." <

A peek inside the kitchens

of UM employees

Soul kitchen

Annelotte Huiskes

Photography Arjen Schmitz

Text

Citizen science can help make science more democratic.



Coordinator

at EDLAB

Alice Pan

After roaming the world, Alice Pan moved to Maastricht in 2020 for the master's in International Business. She is now a coordinator at EDLAB - the Maastricht University Centre for Teaching & Learning. She previously worked as a tutor in the International Business bachelor programme, an English teacher, a massage therapy instructor, and an importer of traditional Tibetan Buddhist handicrafts. With her partner Aatman, she even ran an ashram and a farm in New York State. "I have a practical background, combined with a holistic view of life. I love the Ayurvedic style of cooking I learned from Aatman. Your body has wisdom; if you learn to listen to it, it will tell you what it needs."

Their open-plan kitchen/living room is small but cosy, teeming with cuttings and plants that will soon move to the balcony. Last year they began growing their own vegetables and herbs. The evidence of that successful harvest can be seen in the bumper crop of dried red chili peppers. "I did my master's during the corona period, which was tough. I almost burned out. What got me through it was planting seeds and seeing the natural growth process, not something produced by my own mind. Those plants kept me going."

Digestive fire

Every morning they drink chai, which Aatman brews himself. "He boils fresh herbs in water, then adds black tea and milk, and honey." Breakfast usually consists of seasonal fruit and yoghurt smoothies.

Ayurvedic cooking focuses on the digestion process. "I compare it with a digestive fire. If you have a strong digestive fire, it fuels all the other processes in the body. Balanced food strengthens and balances the fire. Too spicy is not good, too cold is not good. Milk, cheese—they dampen your digestive fire. Onions, garlic, ginger and mild chili peppers form the ideal basis in Ayurvedic cuisine. Your body has wisdom; if you learn to listen to it, it will tell you what it needs. Maybe your mind says it wants chocolate, but that's not what your body really needs. Your body wants something nourishing, but your stressed-out mind says: give me something sweet or caffeine."

Aatman has made us an aromatic rice dish for lunch. "He comes from Northern India and makes the most delicious biryani. When I cook, I go by what I feel I want to eat, not so much by plan. Sometimes it's pasta, because I grew up with American food, sometimes pizza. Or I make my mother's Taiwanese flat bread, which is very similar to Indian flat bread. I enjoy exploring the wisdom of different culinary wellbeing traditions"

Taiwanese roots

Pan was born and raised in Princeton, New Jersey. Her parents are both from Taiwan and went to America for their PhDs; her father chemical engineering, her mother genetics. "My mother taught my sister and me to bake all sorts of things: cookies, cakes, pies, bread. Not cooking, though. Even while raising three kids, she always did the cooking by herself. So when I went to college, I could barely fry an egg. My mom mainly



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Alice Pan obtained her

bachelor's in Fine Arts

her massage therapy

and her master's in

from Columbia University,

education from the Finger

Lakes School of Massage,

International Business

tancy from Maastricht

University. She was

Area of Expertise at

EDLAB in 2022.

- Organization: Manage-

ment, Change and Consul-

appointed coordinator of

the Education Research

cooked Taiwanese food. Many different forms of tofu—I've never liked meat. Fried with vegetables: peppers, beans with soy sauce and sesame oil, occasionally a bit of ginger and garlic. Simple food, but always fresh and healthy.

"I do miss my mom's cooking, and I never manage to replicate the deliciousness of even simple things, like the way she used to make me a scrambled egg with soy sauce for protein on the morning of a big exam. It's not the technique that I lack, but the compassion and love she puts into it. I think I learned to care for others from her first, even before I met Aatman. From Aatman, I learned that caring is universal."

Hidden feelings

Pan was raised in an intellectual household with traditional Asian values. "My parents were good providers, but emotionally it was more difficult. Because in Asian culture, it is more common for parents to show their love through being responsible caregivers than through words or affection. I missed that and I had to find my own way. I studied Fine Arts and massage therapy, and started practicing meditation. Aatman reminds me that it's up to me to live in the way I find meaningful, because it's only then I can be truly happy and share that happiness with those around me."

Quest for spirituality

After studying Fine Arts in New York, she met Aatman at a farmer's market where he was helping a friend who sold cookies and muffins. "I saw how everyone who got a cookie from him left with a smile. There was such a happy energy there. Later when I joined his ashram, Aatman saw that I liked to cook, even though I didn't know how, and he put me in the kitchen. He taught me that it was an intuitive process: smelling and tasting and really feeling the whole process of preparing food. As an artist I love being creative, to make things using all my senses. So I was always in the kitchen, that magical world where you could make delicious things to share with others. Making people feel good, cared for, and nourished and at ease. I loved that."

Community gardener

Eventually, the pair hopes to find a place outside Maastricht like the one they once enjoyed in Ithaca. "We used to raise everything there: chickens, birds, bees, plants, vegetables, flowers. We want to create a space again where people feel welcome to connect with themselves and each other in nourishing ways."

Writing her master's thesis brought her full circle, with a renewed challenge to unite her holistic, intuitive worldview with that of the scientific world "I discovered that thanks to my upbringing I have a strong analytical side, as well as a very intuitive side. Both sides are important for research. When I joined EDLAB last year, my role was described as a 'knowledge broker'. Now I'd like to call myself more of a 'community gardener." <

Carolin Muschalik and Lukas Figge-Muschalik met in 2014, when Lukas was doing a PhD and Carolin was finishing her master's at Maastricht University. One year ago they left on a trip around the world, intending to explore, enjoy life and satisfy their curiosity, but also to contribute to a more sustainable world. Exactly where it would take them, they didn't know. And they still haven't returned. "We're going with the flow, going with the slow. We'll see where we end up."

The photos and videos on their Instagram (@green.kangaroos) are enviable: Swimming with turtles in a crystal-clear sea in Belize, riding horses in Mexico, exploring the stunning landscapes of Costa Rica and Guatemala, surfing the coast of Nicaragua. And the couple appears to be deeply in love. "Things are going well," Carolin agrees this Monday in April via a WhatsApp call from Popoyo in Nicaragua.

"We've been on the road for exactly a year now. We had to get used to it at first, find a rhythm. A hostel room for two is a far cry from a spacious apartment in Maastricht, where we each had a job and a social life. And there was the urge to see everything, to experience it all. We thought we had to go to Latin America, Australia, Southeast Asia. We put pressure on ourselves. We've let go of that now. Instead of rushing all the time, we realized that we want to take it slow, that we want to be absorbed in life. Be with people and nature, learn, roll up our sleeves and contribute in a meaningful way. And it works for us - there's a great sense of freedom this way."

Fragility of nature

Exactly, Lukas chimes in. "We don't want to be the wealthy Westerners who just come to dabble in the culture. We're looking for that connection with culture, nature and sustainability. We do volunteering and work-exchanges from time to time; for example, here in Popoyo we're working in a small hotel focused on surf tourism (@cafeconlechenica). It's a hotel that supports the local community, with an eye for the

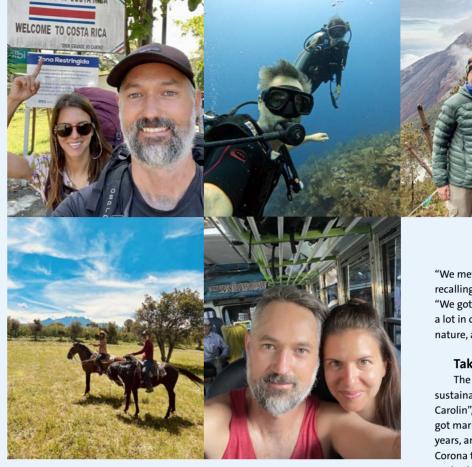
Alumni meeting minds

Text **Jos Cortenraad**

Photography **Carolin Muschalik and** Lukas Figge-Muschalik

UMagazine / June 2023





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Carolin Muschalik obtained her bachelor's and master's degrees in Applied Cognitive and Media Science at the University of Duisburg-Essen. She graduated cum laude from the master's in Health and Social

Psychology at UM. Her PhD focused on the effect of unconscious attitudes on health behaviors.

Lukas Figge-Muschalik studied International Economics, followed by a master's in Public Policy and a PhD in Sustainabili ty Science – all at UM. He worked as a lecturer at the School of Business and Economics for four years and still supervises MBA students online.

beauty and fragility of nature. We have to be careful with our planet, and that's something we try to convey through our social-media posts. Between the two of us we split a daily eight-hour shift in the hotel. The rest of the time we spend surfing, doing yoga, watching sunsets, and connecting with guests and locals. Going with the flow, with the slow. Wonderful."

Golden ticket

Lukas is 37, Carolin 35. Not the typical ages for travelling. "Probably not," Carolin says. "I'd been planning to travel for years, but hadn't got around to it. After my bachelor's and master's at the University of Duisburg-Essen I had the opportunity to do a master's in Health and Social Psychology in Maastricht. It was a golden ticket. I'd heard so many good things about Problem-Based Learning, the collaboration, the lack of hierarchy and access to lecturers and professors. I didn't want to pass that up for a gap year. And I'm glad I didn't, because Maastricht University lived up to all my expectations. I really enjoyed it. Then I was offered a PhD position, another golden ticket. After that corona happened."

Not to mention the relationship with Lukas, who moved to Maastricht in 2007 for a bachelor's in International Economics, followed by a master's and PhD at the Maastricht Sustainability Institute. After that he worked as a Lecturer at the SBE for four years.

"We met during a vegan cooking workshop," he says, recalling that unforgettable day in the spring of 2014. "We got talking, sparks flew and we turned out to have a lot in common. An interest in sustainability and nature, among other things."

Taking the plunge

The idea to travel the world with an emphasis on sustainability gradually took root. "Particularly for Carolin", Lukas admits. "I always said, 'I'll join you.' We got married in 2019 after living together for a few years, and the travel plans were more or less ready. Corona threw a spanner in the works, but fortunately we both had jobs. That meant we could save. Early last year we took the plunge. We made a plan, cancelled our rental contract, sold almost all of our furniture and left in April 2022."

A brave decision for two young people just getting established in their careers. "I only had a temporary lectureship," says Lukas, "and besides, I didn't-and still don't-know exactly what I want. I may change careers completely and do something with adventure travels. During this trip I have arranged internships for SBE students in the Emerging Market specialization, and I continue to supervise MBA students remotely."

Practical experience

Carolin has no clear-cut plan either. "But we've already gained some great practical experiences, working in a conservation project for turtles or a farm with rescued horses. On an organic farm, in an eco-dive and research centre, at a community project that cleans beaches. As for later, I see myself as a therapist who helps people through contact with animals. We'll definitely return to Europe, probably Germany. Thanks to Maastricht, where we laid the foundation for this wonderful adventure." <



Text Hans van Vinkeveen

Photography Yuhan Tan



Studying on the base of the plane of the pla

Maastricht University alum and orthopaedic surgeon <u>Yuhan Tan</u> studied medicine while competing in badminton at the highest level. Juggling student life and competitive sport was challenging, but doable. He received support from the university in the form of acquired skills, accessible lecturers and an educational vision that prioritises independence.

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Which is not to say he never had moments of doubt. How could he combine competitive sport with clinical rotations, for example, when students spend long hours at the hospital? "Other students warned me off, but one of my lecturers encouraged me. If you really commit and do your best, it can be done. And that's exactly what I did." It was an instructive experience, one he looks back on with fondness. "Just because few people combine their studies with competitive sport doesn't mean it's impossible."

The university offered him ample opportunity to do so. "From day one, we were taught to think and work independently. We were expected to get ourselves organised and take responsibility for our own learning. It also helped that the lecturers were easy to approach. As a competitive athlete, having so much freedom was perfect for me. I could decide for myself when to study." He didn't have an active student life. "When I wasn't on campus, I was either training or competing abroad."

<image>

Musculoskeletal system

After finishing high school, Tan had been a full-time athlete for four years when he decided to pursue a medical degree. Maastricht was the nearest major university to his hometown of Bilzen. As a bonus, he wouldn't have to take an entrance exam, unlike in Belgium. "I would've had to brush up on my hard sciences—maths and chemistry." He later decided to specialise in orthopaedics. "I'd seen up close the impact injuries can have on athletes. That led to my interest in musculoskeletal injuries." He also likes the practical nature of the specialism. "There are all kinds of technical skills to master, including surgical procedures. And it's very rewarding—you see results quickly."

For Tan, studying often meant improvising. He barely took a holiday in those six years, and often found himself cramming on the plane. "During a tournament in Basel, I played on Tuesday, flew home that evening, sat an exam on Wednesday, and then flew back to compete again." At the same time, he benefited from his studies. "Some pros were devastated after losing a match. My world never fell apart; I could put setbacks into perspective, as I always had my studies to fall back on."

Explosive

Tan was introduced to the sport by his father, who comes from badminton-crazy Indonesia. He began winning tournaments as a child. "It motivated me to train more and more." When people think of badminton, they often think of swinging at a shuttlecock while camping; a racket in one hand, a beer in the other. That doesn't do it justice, Tan says. "It's technical, explosive and fast. Smash speeds can reach over 400 kilometres an hour. You need excellent tactical skills and mental resilience."

> Yuhan Tan studied Medicine at Maastricht University, graduating cum laude. He is an eleven-time Belgian national badminton champion and a two-time Olympian. Tan specialised in orthopaedic surgery and serves on the Athlete Committee of the World Anti-Doping Agency.

Tan won the Belgian national championships eleven times and was one of the best players in Europe. He competed in the Olympics in London in 2012 and Rio de Janeiro in 2016, where he came in 29th place. He looks back on the experience with mixed feelings. "It was great to compete at the highest level, but I was playing against the big names, the best of the best. Then again, they're also under enormous pressure, so there's always a chance." Tan once managed to beat one of the big names from Indonesia. "It was nice to have family from Indonesia congratulate me on that win. Everyone watches badminton there."

The interests of athletes

Tan was 33 when he quit top-level badminton to focus on administrative roles. He served as chair of the Athletes' Commission of the World Badminton Federation and later the Athletes' Commission of the Belgian Olympic Committee. "It was out of interest. I enjoyed participating in competitive sport, but I was always aware that there's an entire organisation behind it. It's a fascinating glimpse behind the scenes, into how certain decisions are made. I want to promote the interests of athletes."

He recently joined the Athlete Committee of the World Anti-Doping Agency, which advocates for doping-free sport. Tan believes he owes this position to his medical background. "I'm the point of contact for all athletes and speak for them in debates. The goal is to strike a balance between doping control and respecting athletes. You don't want a repressive policy that intrudes on athletes' privacy. Doping control has to be proportional. After all, the vast majority of athletes are clean. As a committee member, I try to help find the right balance."

Chairing meetings

In his administrative roles, Tan relies on the knowledge and skills he acquired during his studies, from running discussions to chairing meetings. "We started meeting in biweekly tutorials early on, with one student leading the discussion and another taking the minutes. And of course, I still try to think independently and take responsibility for my decisions." <

University Fund Limburg

Text Anouk van den Brink

Photography Alf Mertens

For research to develop and be disseminated, it needs to travel outside the university walls. The University Fund Limburg has been contributing to this mission ever since Maastricht University was founded. This year's UM Dinner, themed 'Young talent and innovation,' offered three promising researchers a platform—literally—from which to present their ideas. Before an audience of regional business delegates, external guests, and UM representatives and professors, they took the stage to plant their innovative ideas in society: exactly where they should sprout, grow and make an impact.

Three pitches, one mission: helping **talented academics** to flourish



The future of work, dementia prevention and plasma technology—the research topics of Marie-Christine Fregin, Kay Deckers and Thomas Butterworth could hardly be more different. Yet they are all innovative, topical, and contribute demonstrably to the public interest.

Plasmalab: bridging academia and industry

Creating temperatures hotter than the surface of the sun and 'unburning' CO2: at the Brightlands Plasmalab, researchers join forces with industry to make the seemingly impossible possible. "The experiments we conduct have important implications for sustainable chemistry and society," says Thomas Butterworth, assistant professor of Circular Chemical Engineering. "Human activity contributes to the CO2 emissions causing climate change; two percent of that comes from the chemical industry. We develop many plasma-driven chemical processes. For example, we can make fertilisers from the air, which can make a positive contribution to the climate situation." Financial as well as environmental aspects are taken into account. "Emission-free fertiliser can feed the ever-growing human population, but we also have to make sure prices don't skyrocket."

The cross-fertilisation between industry and university at the Brightlands Chemelot Campus is a win-win situation, sometimes with jaw-dropping results. Butterworth recalls a request they received to create a high-pressure plasma process. Although plasma does not generally respond well to high pressure, the Marie-Christine Fregin, Bouwien Janssen, Kay Deckers and Thomas Butterworth

experiment succeeded against all odds. "The industry gains insights they couldn't otherwise get if not for the experiments in our lab, where we can create unique conditions. On the other hand, we couldn't and wouldn't try certain things without their expertise, requests and encouragement."

En route to a brain-healthy and dementia-free society

One in five Dutch people develop dementia. Is this just an unfortunate coincidence? Kay Deckers, assistant professor of Dementia Risk Reduction, studies (modifiable) lifestyle factors that increase the risk of cognitive impairment and dementia. Recently, he and his team have also looked at environmental factors, such as air pollution and distance to green spaces. "After the age of 65, dementia is hereditary in less than 10% of cases. Age is still the most important risk factor. Our aim is to raise awareness of the fact that you can do something yourself about the risk of dementia."

Eat healthily, exercise regularly and stay curious: these are the three golden tips from the regional awareness campaign 'We zijn zelf het medicijn' ('We are the medicine'), which will be repeated in 2024. "To bring about change, translating the research results into our everyday lives is hugely important. We do this with the MijnBreincoach app, educational programmes, community activities and more." Another important step towards a brain-healthy, dementia-friendly society are the social projects organised by the Alzheimer Centre Limburg in cooperation with Alzheimer Nederland and local organisations. "We need to embrace dementia. Open restaurants where people can work under supervision, offer courses on dementia to bus drivers and supermarket staff. Make sure healthcare professionals such as GPs are knowledgeable about brain health and prepared to broach the topic. That's one of my ultimate goals."

Human and AI: a dream team?

These days, chatbots and search engines are in our pockets and around our wrists: we are literally surrounded by AI. We can no longer ignore its impact on both our private and our professional lives, says Marie-Christine Fregin, research leader at the Research Centre for Education and the Labour Market (ROA). Fregin studies the impact of AI and automation on the labour market in innovative projects at the crossroads of science, industry and politics. In transdisciplinary teams with fellow academics, AI experts, employee representatives and policymakers, she aims to help society face the opportunities and challenges that come with technological change. "Conducting our research at workplaces is key. The implementation of AI can only succeed when we understand what it means for companies and their workers."

Often, workers are replaced not by AI itself but by somebody who knows how to use it. Workers therefore need to acquire skills complementary to AI, which requires practising how to gain the new competences demanded by the labour market. "I want to study whether complimentary skills can increase performance, but also what happens to the people whose jobs become redundant, and the role companies, policymakers and governments can play in this." In other words, her research is about people, not robots. "We need to put people first, invest in their expertise. Only when we develop AI in a human-centred way can we make full use of its potential." <

UM Dinner

The UM Dinner brings together representatives of the regional business community to strengthen ties with one another and with UM over an exclusive dinner with inspiring guest speakers. The interaction between business and academia can result in unexpected but valuable partnerships. "It's vital that our talented scientists can share their innovative ideas with impactful companies, as they often have the resources to actually turn these ideas into action," says Bouwien Janssen, director of the University Fund Limburg.

The donations from the event go entirely to education and research at UM. This year, Kay Deckers won the Young Innovation and Talent Award of €10,000. The runner-ups each received €2,000 to put towards their research.

News

How technology can strengthen the EU's role in global governance



No evidence of brain damage caused by severe COVID-19

Patients admitted to a hospital with a severe COVID-19 infection exhibit no evidence of brain damage caused by the virus. This is the conclusion of an extensive study led by Maastricht University. The patients under investigation showed no more neurological symptoms or cognitive dysfunction than other groups of seriously ill patients. However, more than half suffered from long-term symptoms, such as fatigue, concentration problems, forgetfulness and reduced quality of life. The cause of these symptoms is unclear. These patients should, the researchers say, receive ongoing attention, care and support.

The study was initiated after doctors observed neurological symptoms in intensive-care patients during the first COVID-19 wave in the spring of 2020. These were thought to be related in some way to

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the symptoms experienced by many former COVID-19 patients. To investigate this, the researchers followed two groups of COVID-19 patients: 104 patients who had been admitted to regular nursing wards and 101 patients taken into intensive care at a total of six large Dutch hospitals.

"Given that the intensive-care patients were the most seriously ill, we expected that they would also have the most brain damage and more symptoms," says Caroline van Heugten, professor of Clinical Neuropsychology at UM and head of the Limburg Brain Injury Centre. "But that turned out not to be the case. The MRI scans were largely comparable. The intensive-care patients did have more microbleeds, but they didn't experience more problems or symptoms than the other patients."

The Neurological and Neuropsychological Sequelae of COVID-19 Infection (NeNeSCo) study was financed by a crowdfunding campaign led by the Dutch Brain Foundation (Hersenstichting). The research was conducted by UM in collaboration with the Amsterdam UMC and UMC Utrecht. The results were recently published in the European Journal of Neurology. <

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Authoritarian powers, digital platforms and populists are increasingly undermining cooperation between nations, threatening the postwar rules-based order. Europe is strong when multilateralism is strongwhen countries collaborate to pursue common goals. In a new European project launched in March, researchers are seeking to revitalise multilateralism through technology policy innovation. The REMIT project is headed by Roberta N. Haar, professor of Foreign Policy Analysis and Transatlantic Relations at Maastricht University, and funded by the EU's Horizon Europe research and innovation programme.

The project revolves around four technology areas: digital technology, biotechnology for healthcare, security and defence technology, and financial technology. These areas reflect the expertise of the researchers involved in REMIT.

The lack of comprehensive, multilateral technology regulation poses a threat to the security of the EU and its allies by allowing others (notably China) to make the rules for the digital future. The four technology areas will play an important role in finding solutions to challenges from climate change, migration, ageing and health, pandemics and rising inequality to digital transactions and information disruption. It is hoped that the project will yield insights leading to more informed policies and, ultimately, a stronger Europe. <



Profile

Education and research at Maastricht University is organised primarily on the basis of faculties, schools and institutes.

Faculty of Arts and Social Sciences

- Politics and Culture in Europe
- Science, Technology and Society Arts. Media and Culture
- Globalisation, Transnationalism
- and Development

Faculty of Health, Medicine and Life Sciences

- School of Nutrition and Translational Research in Metabolism (NUTRIM) School for Cardiovascular Diseases
- (CARIM) School for Public Health and Primary
- Care (CAPHRI) • School for Mental Health and
- Neuroscience (MHeNS)
- School for Oncology and Developmental Biology (GROW)
- School of Health Professions Education (SHE)
- Faculty of Science and Engineering University College Maastricht (UCM)
- University College Venlo (UCV)
- Maastricht Science Programme (MSP)
- Department of Advanced Computing Sciences
- Aachen-Maastricht Institute for **Biobased Materials (AMIBM)**
- Brightlands Institute for Smart Society (BISS) • Brightlands Future of Farming Institute
- (BFFI)
- Department of Circular Chemical Engineering (CCE)
- Department of Molecular Genetics (DMG)
- Department of Sensor Engineering (SE) • Gravitational Waves and Fundamental
- Physics (GWFP)

Faculty of Law

- Institute for Globalisation and International Regulation (IGIR)
- Institute for Transnational Legal Research (METRO)
- Institute for Corporate Law, Governance and Innovation Policies (ICGI)
- Maastricht Centre for European Law (MCEL)
- Maastricht Centre for Human Rights
- Maastricht Centre for Taxation (MCT) Maastricht European Private Law Institute (MEPLI)
- Maastricht Graduate School of Law
- Montesquieu Institute Maastricht

Faculty of Psychology and Neuroscience

- Graduate School of Psychology and Neuroscience (GSPN)
- Clinical Psychological Science (CPS)
- Cognitive Neuroscience (CN)
- Experimental Psychopathology (EPP) Neuropsychology & Psychopharmacology (NP&PP)
- Work & Social Psychology (WSP)
- Maastricht Brain Imaging Centre (M-BIC) • Section Teaching and Innovation of
- Learning (STILL)

School of Business and Economics

- Graduate School of Business and Economics (GSBE)
- Research Centre for Education and the Labour Market (ROA)
- Network Social Innovation (NSI)
- Limburg Institute of Financial Economics (LIFE)
- The Maastricht Academic Centre for Research in Services (MAXX)
- Accounting, Auditing & Information Management Research Centre (MARC)
- European Centre for Corporate **Engagement (ECCE)**
- United Nations University Maastricht Economic Research Institute on Innovation and Technology (UNU-MERIT)
- Social Innovation for Competitiveness, Organisational Performance and human Excellence (NSCOPE)
- Marketing-Finance Research Lab
- Service Science Factory (SSF)
- Maastricht Sustainability Institute (MSI)
- UMIO executive branch of SBE
- Education Institute

Interfaculty institutes

- The Maastricht Forensic Institute (tMFI) MERLN Institute for Technology-Inspired
 - The Maastricht Centre for Citizenship, Migration and Development (MACIMIDE)
 - Maastricht MultiModal Molecular Imaging Institute (M4I)
 - Maastricht Centre for Systems Biology (MaCSBio)
 - Maastricht Centre for Arts and Culture. Conservation and Heritage (MACCH)
 - Centre for European Research in Maastricht (CERIM)
 - Institute for Transnational and Euregional cross border cooperation and Mobility (ITEM)
 - Institute of Data Science (IDS)
 - Centre for Integrative Neuroscience (CIN)
 - Maastricht Science in Court (MSiC)

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- **Regenerative Medicine**

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Colophon

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