Online education
at breakneck speed
Nicolai Manie and Simon Beausaert on teaching in times of corona

‘Why not move Carnival to summer?’
Portrait of Christian Hoebe, professor of Social Medicine

‘Creativity loves a crisis’
Philippe Lambin on his research into COVID-19
Science and the oil industry: an intimate relationship

"If we want a transition to a more sustainable world, and develop new technologies and alternative energy sources to become less dependent on oil, we have to realise that the oil industry itself is deeply intertwined with scientific research and innovation," says Cyrus Mody, professor of History of Science and Technology. The entanglement between science and the oil industry is one of the pillars of Mody’s research, for which he recently received a Vici grant.

In 2016, now a graduate in Data Science and Knowledge Engineering, Marta Dávila Mateu moved to Maastricht. Her choice turned out to be a double-edged sword. She found the lack of skate culture depressing, but enjoyed her studies, especially the focus on the mathematics behind data.

Migrants in times of corona

The corona crisis is having a major impact on migrants both in the Netherlands and abroad. Two senior members of the Maastricht Centre for Citizenship, Migration and Development, professors Melissa Siegel and Maarten Vink, shed light on the situation.

An algorithm-mad surfer

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Further

04 Education
Nicolai Manie and Simon de Beausaert: Online education at breakneck speed

08 Science and Society
Pim Martens: “We’ve been worrying about this for decades”

12 Portrait
Christian Hoebe: “Why not move Carnival to summer?”

16 Region
Philippe Lambin: “Creativity loves a crisis”

22 Spread
New accommodation for the Faculty of Science and Engineering

40 University Fund Limburg / SWOL
Rogier Veltrop: Following his (donor) heart

7, 11 and 42 News
Umagazine / October 2020

Cover
For the cover illustration, Ted Struwer was inspired by the interview with Nicolai Manie and Simon de Beausaert on online education in times of corona.

tedstruwer.nl

Yes, these are strange times, and yes, the corona crisis has had positive effects too. On a personal level, many have benefited from the mental release of an unexpectedly empty calendar. Society has learned the hard way that, when push comes to shove, we are all closely linked and responsible for one another’s wellbeing. Universities, traditionally seen as unwieldy behemoths, have been amazed at their own strength and agility.

Suddenly scientific research could move much more quickly than in the ‘old normal’. Researchers joined forces worldwide, shared their data (hurray for Open Science!) and stitched together top publications at the speed of light. Lecturers switched from teaching in person to online education, sometimes in the space of a single weekend. They mastered techniques that they previously might have turned their noses up at—because all of a sudden, there was no other way. ‘Never waste a good crisis,’ Churchill said. Or, as Johan Cruijff put it: ‘Every disadvantage has its advantage.’ Thanks to the pandemic, we are further investing in our online offer, from training to support for employees, on our UM Virtual Campus. We see this as a useful addition to—but never a replacement for—the ‘real thing’.

In short: there is a lot to be grateful for. But if one thing has also become crystal clear this year, it is that physical proximity has enormous added value. Not only when it comes to talking without technical glitches, but also for stimulating the full range of senses, experiencing the spice of life, and enjoying the feeling of doing something together. A purely online education is not an option. The student experience cannot be reduced to Zoom—it has to be lived to the fullest. That is what we will continue to work hard for, in the new, old and present normal.

Another Cruijff saying is perhaps even more fitting: ‘It takes a team to win.’ Together, our staff and students have managed what was previously thought impossible. They have helped one another through this crisis in all kinds of ways, and for this, we are extremely proud and grateful. Just as we are grateful for the space the Dutch government gave its citizens during the peak of the crisis, to protect each other in an ‘intelligent’ way from a rampant virus that could easily have claimed even more lives than it did.

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The outbreak of COVID-19 meant that, as of mid-March, education at UM suddenly had to be offered entirely online. Together with their team, Nicolai Manie, programme manager for online education, and Simon Beausaert, associate professor of Workplace Learning, faced the almost impossible task of achieving this within a few days. That they succeeded is partly down to the cooperation of UM lecturers across the board. How did they tackle this huge operation? And will the switch have consequences for the future of UM education?

Resolute is the key word, says Nicolai Manie. They had no time for endless discussions or policymaking. “We took action immediately. First we gathered people from all faculties to brainstorm the approach. Very soon there was a solid decision in place, supported by everyone involved in education, from programme committees to exam boards, deans to lecturers. And a stringent action plan immediately after that. We couldn’t have done it any other way.”

Step-by-step instructions

Online education requires specific technical resources, such as video-calling tools, online whiteboards, discussion forums and tools for audience interaction. Much of this was already in place, but a video-conferencing tool had to be purchased quickly. Manie: “We didn’t do anything without the advice of UM experts. It wasn’t a question of buying just anything—all the options were thoroughly examined and compared, always at breakneck speed.” Assuming that lecturers and students were unfamiliar with online education, they enlisted the help of the communications department to disseminate information. “That definitely contributed to the success. We provided very detailed online instructions that guided people through the process step by step. We also made all the instructions for online education publicly available on the UM website. At most other universities, that information was only visible to staff and students. We want our approach to be completely transparent.”

Letting go

Within two or three days, lecturers had to say goodbye to their traditional way of working. “Naturally, some people had more trouble than others in letting go of the old approach, but there was no other choice. Some were concerned about how to turn their...
Sustainable
For an international university, online education also implies less travel—an added advantage in terms of sustainability. Beausaert: “Online education shrinks the world. Technology is rapidly bringing the world closer and offers countless new possibilities. A visit by students to a company in Rotterdam is suddenly just a click away; likewise a conversation with a graduate in South America who can explain what it’s like to work as a doctor there. When teachers think creatively about different working methods, technology can add an extra dimension.”

What now?
Online education is now running smoothly, but on-campus education is also up and running again, albeit to a limited extent. Simon Beausaert: “The motto is: online for the time being, but on campus if possible. Here at SBE we’re using both options. Lectures are online and pre-recorded, and tutorials are held online, but there are team meetings on site. The teams are made up of four or five students from the same tutorial group. Other faculties have a similar hybrid setup. I hope that, post-corona, we’ll retain the strengths of this approach. You notice that more attention is being paid to self-directed learning and supporting students in their own learning processes with tasks they can perform at home. And consider recording lectures and splitting them into smaller videos that students can watch again later. There are lots of positive developments that we should definitely hold onto.”

Future
If it were up to Manie, hybrid education would be the future: “When this is all over, there will need to be discussions everywhere about what a university should offer and how it should be designed. We now know we don’t have to teach in the traditional way. Getting together on campus is currently a luxury, so it’s important to think about what you want to use those scarce opportunities for. It should be a meaningful activity that offers the students more than they can get online. We all agree that being physically present on campus has a lot to offer in terms of socialisation, solving and discussing more complex issues, working in an interdisciplinary way. That adds value to people’s lives and makes studying special. But it can easily be supplemented with online lectures and other digital options, like podcasts. Online education also opens up new avenues for things like professional education and personalised learning paths. I think we’re at a tipping point. UM can occupy an interesting position in all this.” And as for the quality of online education? Manie: “When the switch is so sudden, it’s to be expected that the quality will not yet be optimal. Lecturers care tasks, limited experience with the technology and no time to make pedagogical changes. So the quality may initially have been somewhat lower. But we learned from that.”

→ Simon Beausaert is associate professor of Workplace Learning and programme coordinator for the master’s in Learning and Development in Organisations. His research revolves around support for formal and informal learning and the organisation of learning assessments in the workplace.

→ Nicolai Manie is programme manager for online education at UM. He advises the university on the development and implementation of digital education.

Opening of the Academic Year 2020/21
The motto ‘On campus if possible, online if necessary’ applies not only to education as it is currently offered at Maastricht University, but also to the Opening of the Academic Year 2020/21. On Monday 31 August, UM President Martin Paul led a special ‘corona-proof’ version of the annual event for a few invited guests. A much larger audience followed the proceedings online, via a special livestream on UM’s YouTube channel.

This year’s theme was ‘After the storm: How corona could change universities’. The keynote speaker was Harvard professor Eric Mazur, an internationally renowned educational adviser and innovator. He provided an inspiring glimpse into how universities can respond to the corona pandemic by viewing it not as a temporary obstacle, but as an opportunity for innovation. In keeping with tradition, students from the Maastricht Academy of Music and the UM Orchestra brought the ceremony to a close with their rendition—a creative, digital version—of Beethoven’s Ode to Joy.

Other nominees for the Student Award 2020 were volunteers who coordinated medical students during the peak of the corona crisis; the founders of the special supermarket Foodcoop; participants of the Match project, in which students make themselves useful in their neighbourhoods; and an initiative of a group of European Law School students aiming to close the gap between students and human-rights NGOs.

← Arthur Bribosia / Maastricht4Climate
COVID-19, the third outbreak of coronavirus in 20 years, was not exactly unpredictable. For scientist and animal advocate Professor Pim Martens, zoonoses—infected diseases that jump from animals to humans—foreground the interconnectedness between our wellbeing and our treatment of animals.

“It was strange—I had no idea. And even when the first reports emerged, I was quite sure they would contain it within the province...” Professor of Sustainable Development Pim Martens travelled to China late last year at the invitation of Bingtao Su, his former PhD candidate at Maastricht University. As a visiting professor, he spent two weeks lecturing at Shandong University and the Chinese Academy of Science. Under his guidance, Su had compared Chinese perspectives on animal welfare with those in the Netherlands and Japan. They used questionnaires to collect data on how factors such as age, gender and religion relate to attitudes towards animals. Martens is now supervising PhD and MSc students conducting similar research in Indonesia and Spain.

**Chinese attitudes towards animals**

“Sustainability is underrepresented in Chinese academia, but they are keen to bring in expertise, especially integrated perspectives on interdisciplinary...”
“China is a huge and very diverse country, so it’s always difficult to make generalisations. That’s also what we found in the study. It’s true that they eat a wider variety of animals than we do. But you could also say it’s surprising how few animals we see in Western Europe.” In any case, many commentators suspect that the wet markets, where different species of animal are kept in close proximity, is where COVID-19 originated.

Meat, milk, and raw materials

To satisfy the rising demand for animal protein in densely populated megacities, more and more animals are being housed together in conditions that are either unsanitary or, conversely, overly hygienic (due to the use of antibiotics). The need for space and raw materials exacerbates the encroachment on habitats such as rainforests, which, in turn, brings more humans into contact with exotic animal species. Add to that frequent international travel — by both humans and animals — and the result is excellent conditions for zoonoses.

Preventing diseases from moving from animals to humans is, of course, not entirely possible. “It’s a question of probabilities. If we were all vegan animal-rights activists, there could still be a zoonotic pandemic, but it would be infinitely less likely.” Nor was this a perfect storm. “Academics have been warning for decades that this would happen. It was always a question of when, not if.” Recent decades have, in fact, seen a number of zoonotic epidemics — several of them coronaviruses.

Zoonosis closer to home

That a zoonotic disease could arise from a Western European source is not unthinkable, Martens says. Take the Netherlands: a densely populated country with intensive livestock farming, where more than 3.5 million animals are slaughtered per day after having spent their lives in close quarters with one another. Storage and processing facilities, for example by developing mathematical models to simulate the spread of zoonoses.

Martens recently obtained his second PhD in anthrozoology, a branch of ethology that studies the interactions between humans and other animals. For his latest research, he is interviewing religious leaders of indigenous cultures. “Their view of the world and their place in it, including the way they relate to animals, is very different from our orthodoxy. I hope that my findings will help us to address the sustainability challenges we face today. Our dominant socioeconomic and political systems have become decoupled from the larger ecology of life. Our relationship with the natural environment and animals has changed dramatically.”

Beyond his theoretical contributions, Martens wants to help change people’s attitudes. He was heartened by how many students attended his lectures in China and how interested and knowledgeable they were. “You can tell that there’s a cultural shift, especially among young, educated people in urban areas.” With Su, he now wants to repeat the original study to see whether the COVID-19 outbreak has changed attitudes towards animal welfare in China. In light of the public and political discourse, he has his doubts. “Economic recovery is important, of course, but I hope we won’t rush back to business as usual without fixing the underlying problem.” Sighing, he adds: “If we haven’t learnt anything from this pandemic, maybe we will from the next one.”

Greater respect for nature

“The solution is greater respect for nature: moving away from industrial livestock farming, deforestation and wet markets. This would also help to address climate change, the impact of which will make this look like peanuts.” In his own research, Martens explores the complex interactions between humans, animals and nature, for example by developing mathematical models to simulate the spread of zoonoses.

Research by Kwaku Oduro-Appiah has made a spectacular contribution to solving the problems of waste collection and processing in Accra. The capital of Ghana, Accra is highly polluted with litter, plastic, and household and electronic waste. The collection and processing of this waste poses a major problem. When Oduro-Appiah began his research in 2016, many informal initiatives and projects were involved in waste processing, all working independently of one another. Workers were collecting 300 tonnes of waste every day, often by hand, and dumping and burning it illegally, resulting in serious soil and air pollution.

Thanks to an improved vision, strategy and practical solutions, collaboration is now more efficient and some 90% of all waste (85,000 tonnes) is collected and recycled. As this figure previously stood at less than half, the new approach yields annual savings of some US$20 million. Oduro-Appiah defended his PhD at Maastricht University in early September.

To contribute to technological innovation in the agri-food sector, Maastricht University is establishing a new knowledge institute on the Brightlands Campus Greenport Venlo: the Brightlands Future Farming Institute (BFFI). The new institute will focus on breeding plants that are healthier for humans and the climate (functional plant genomics) and cultivating them in an innovative, environmentally friendly manner (greenhouse and indoor farming engineering).

The institute will be located in the Brighthouse building, which will open by mid-2021. North Limburg, where the Venlo greenhouse was invented and where the entire chain—from seed to consumer—is strongly represented, forms the ideal region in which to combine research and development. New R&D greenhouses will also be built in Venlo in 2021, some of which will be made available to small- and medium-sized enterprises. The work will focus on modern breeding techniques, sensor technology, artificial intelligence, robotics and advanced system analysis, with an emphasis on taste, convenience and sustainable circular food production.

The new knowledge institute brings together the ‘triple helix’ forces of UM, Brightlands Campus Greenport Venlo, the Province of Limburg and the Region of North Limburg, and BASF Vegetable Seeds as a potential private partner. Over €40 million will be invested over the coming decade.

UM PhD candidate solves major waste-collection problem in Ghana

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Jos Welie appointed dean of University College Maastricht
As a student here, Christian Hoebe felt like a ‘fish in the Maas’. “My student days were fantastic. Being in Maastricht was like being on holiday every day.” Alongside his studies, he worked as a student assistant at the medical education office, was a member of the Faculty Council, and served on the board of the study associations Reflex and KoBeraad.

Born and raised in Alkmaar, Hoebe was what one might call ‘an accident’. His father was 24 and his mother just 22 when she fell pregnant. “My paternal grandparents lived in a big house. Downstairs they had had a dance school, and we were able to move in there. My sister was born two years later. My uncles and aunts were young at the time and still lived at home, so we were surrounded by family. As the first grandson, I was very welcome. Initially my grandparents helped to raise me. I have good memories of those years.”

His father, a workaholic, was a financial controller and an executive at a large mortgage bank. “I was 18 when he died in a car accident. It was during my last year of high school. It wasn’t easy, but I managed to finish the year. Then I was keen to go to university, even though it meant leaving my mother and sister behind with just the two of them.”

After a false start—electrical engineering in Delft and military service—he consciously opted for Medicine and PBL in Maastricht. “The distance was difficult for my mother, but I felt that life had to go on.” Because his father was often working, he has few memories of him. “And it was a long time ago. I get my interest in animals and plants from him, though. We had a big garden and he chose all the trees. I recognise something of myself in that. My hobby is mountain biking through hill country. That’s my backyard; it’s how I clear my head, and then I can tell you all about the birds and plants I come across.”

Hoebe opted to specialise in social medicine. The decision was prompted by his final medical internship, which he did at the GGD (the regional public health service). “I studied the side effects of malaria drugs. It was my first experience with infectious diseases, and I was immediately intrigued by the puzzles you have...”

In 1988, Christian Hoebe made the conscious choice to study Medicine in Maastricht. He remains a staunch advocate of Problem-Based Learning. “You can still see me in one of the university’s first television ads, back when I was a medical student. I’ve got my arm draped around a skeleton and I’m inviting everyone to come to Maastricht,” he laughs. Now a professor of Social Medicine and head of Infectious Disease Control at the GGD Zuid-Limburg, Hoebe discusses his passion for social medicine, his childhood in Alkmaar and, of course, the fight against COVID-19.
detectives among the doctors. This pandemic is a good wake-up call—perhaps now more junior doctors will choose it as a specialisation.”

He values the combination of academia and the practice of the GGD. “When I became a professor, it meant I was able to take a scientific approach to practical issues in society. As a result, the GGD and the university are taking steps that they couldn’t take independently. For example, we discovered that women with chlamydia are often infected not only vaginally but also anally. That requires a different treatment. So you had women thinking they were chlamydia free when they weren’t. Now, with corona, the collaboration between the GGD and the university also creates opportunities: in August we received a €1 million Interreg grant for a study on the occurrence of the coronavirus in South Limburg, Germany and Belgium, and the effect of the different measures. In the coming year we’ll be inviting 30,000 people to take part in the study in two rounds. We hope to have the preliminary results early next year. All those years of cooperation in the Euregion have laid a foundation that we can build on now.”

No shortage of tests and staff in Limburg

He is proud of his field and “his” GGD, that much is clear. Under Hoebe’s leadership, the Sexual Health, Infectious Diseases and Environment department has grown from 40 to 70 employees. “Testing and source and contact tracing are two of the most important weapons we have in the fight against COVID-19. It’s a pity that not all GGDs have enough staff to meet the demand. Organisationally, we have our house in order. The track and trace policy is not at risk here, partly thanks to the short lines of communication between the GGD and UM. All tests are performed by the lab of the Microbiology department, where I’m based at the university hospital. Because we’ve been working together for years now, we can perform many tests very quickly. And like at Schiphol, we’ve set up a pilot to test international students from orange and red areas. Combating the corona pandemic is an immense task for the GGDs.”

Infections among students

Hoebe is of the opinion that UM has handled the crisis well. “It immediately put measures in place to prevent the spread of the virus, some of them almost too strict, if you ask me. Of course, reducing the number of people physically present in buildings helps, but for some staff and students, working or studying from home is unsustainable. So that remains a difficult decision. What’s really good is that there has been a lot of communication via updates, emails and so on.”

And yet, at the start of the academic year, dozens of students contracted Covid-19, mainly through private circles. What can UM do about this? “Additional testing and source and contact tracing was performed and a campaign was launched to raise students’ awareness of the importance of the measures. Beyond that, there’s not much more you can do than point out that they themselves can get very sick and infect others. The same holds for everyone: discipline and persistence. It’s not an appealing message, but we’re just the messenger—it’s the virus that kills us.”

The new normal

When does he think a vaccine will become available? And what will the world look like then? “I think some changes will be structural, such as more online meetings, because that saves a lot of commuting time. You can also question whether we should really keep celebrating Carnival at the start of spring, when there’s a higher risk of infectious diseases. That probably played a role in the spread of corona. I realise it’s almost blasphemous to say, but health-wise it would be better to do it in summer. And it might help to enforce the ban on shaking hands in healthcare, because it slows the spread of infections. But of course we wouldn’t want that in the private sphere. We’re social creatures; even I hate the 1.5 metre rule. You want to be able to give someone a hug, you want contact. Ultimately we’re just going to have to go back to that. It will probably be another year before a vaccine is available in the Netherlands. But even if it is, that won’t be the case everywhere in the world. We need a lot of patience. Therein lies my concern: do we have enough of it?”

Christian Hoebe is head of department and professor of Social Medicine (in particular infectious disease control) at Maastricht University, and head of the Sexual Health, Infectious Diseases and Environment department of the GGD Zuid-Limburg. He is a member of the Outbreak Management Team and the Health Council. He obtained his PhD in infectious diseases and outbreak management in 2004.

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As a boy, Philippe Lambin decorated his bedroom with posters of Leonardo da Vinci, Marie Curie and Albert Einstein—an early sign of the passion that catalysed his career. A radiation oncologist by training, Lambin does not limit his research to a single disease. His latest achievement: three European grants for his research on COVID-19.

Creativity loves a crisis

“Of course, I’m very pleased with these grants. I believe it demonstrates the power of our unusual approach, which a lot of people were initially sceptical about. Everything was in place to come up with solutions quickly and write grants for a totally new disease we’d never heard about before.” Lambin is referring to his team at the Department of Precision Medicine, which he founded along with his colleagues in 2017. A ‘disease-agnostic’ department, its tools and expertise can be applied to many different diseases.

Disruptive research
“What makes us unique is the fact that we bring together biologists, artificial intelligence specialists, astrophysicists, lawyers, psychologists, mathematicians, bacteriologists, medical doctors and epidemiologists under one roof. The major societal challenges we face can’t be solved by one discipline or specialty alone. Disruptive research is what we need.” Lambin is clearly on the right track; this year alone, he has obtained six major research grants plus six PhD, worth over 4 million euro’s.”
Lambin and his team focus on ‘convergence sciences,’ meaning that they operate at the intersection of medical sciences, biology and technology. Departmental research—split between an artificial intelligence unit, a wet lab for molecular biology and a clinical trial unit—revolves around cancer, multiple sclerosis, cardiovascular diseases, Alzheimer’s, diabetes and viral diseases. “We focus on problems we can solve with the knowledge and tools we have. We’re very flexible, as it’s quite easy for us to sort of copy-paste the workflow and tools in order to apply them to other unmet clinical needs. I think that’s why we’ve been so successful in obtaining grants for COVID-19.”

Coronavirus

Soon after the virus appeared in Europe, Lambin realised that it presented one of the largest healthcare crises of the century. “And I wasn’t the only one,” he says. “There was this mobilisation of scientists around the world. Everybody was obsessed with helping in one way or another. We were lucky enough to have access to the Asian data as early as February. So we created a website (www.covid19risk.ai) aimed at developing diagnostic and predictive models for COVID-19 management, and we wrote a few papers. This all happened without funding; we just thought it was important.”

The first COVID-19 project for which Lambin and his colleagues received funding involves a machine-learning model for risk assessment and triage of coronavirus patients. It helps doctors decide whether a patient should be sent home, hospitalised or admitted to intensive care. The second study focuses on AI software applied to imaging that identifies COVID-19 on CT scans. It not only improves the reliability of diagnoses, but also allows doctors to monitor the development of the disease. The third grant project aims to develop an oral vaccine containing living bacteria that produce antigens.

“All these projects have a common starting point, in that they are based on the concept of convergence sciences,” Lambin says. He draws attention to the ‘two translational gaps’ researchers have to cross: from the lab to clinical trials, and from scientific publication to routine care. “We used to think that once the thesis is defended, or the paper is published, most of the work is done. Well, it’s not. If you develop a tool that’s not actually used in patient care, the work is unfinished. What we want is to improve the lives of people with chronic diseases. So you need companies, and they need to be involved at an early stage.”

The new normal

Despite being at the forefront of COVID-19 research, Lambin does not believe in a quick fix. He compares it to a marathon. “There are many questions that need answering. If we create an effective vaccine, how long will it work for? And even if you have a vaccine that works, you’ll have to mass produce it and inject billions of people. And how many people want to get vaccinated? There are many challenges ahead, and I don’t think we’ll ever go back to normal.”

And yet our new reality also offers opportunities, he says. For starters, he has discovered that he loves working from home: “I’m 200 percent more efficient.” Recent months have also bolstered awareness of the importance of closing the two translational gaps. More than ever, researchers are realising that what they do with public money has to be useful for the society. “And don’t forget that creativity loves a crisis. The Chinese word 危危—crisis—is made up of two characters: one meaning danger, the other opportunity.”

Philippe Lambin studied Medicine at UCLouvain (Belgium), specialised as a radiation oncologist and obtained his PhD in molecular biology in Paris. He was appointed professor of Radiation Oncology at Maastricht University in 2000 and served as the medical director of Maastro from 2000 to 2015. A pioneer in translational research, he founded the Department of Precision Medicine in 2017. He is co-author of over 500 peer-reviewed scientific papers, co-inventor on more than 20 patents and (co-)supervisor of upwards of 60 completed PhDs. He has received three prestigious grants from the European Research Council (one Advanced Grant and two Proof of Concept grants).
“If we want a transition to a more sustainable world, and develop new technologies and alternative energy sources to become less dependent on oil, we have to realise that the oil industry itself is deeply intertwined with scientific research and innovation”, says Cyrus Mody, professor of History of Science and Technology. “And that sector is not exactly raring to embrace a sustainable economy.” This, in a nutshell, is the dilemma of the entanglement between science and the oil industry. It is also one of the pillars of Mody’s research on how to deal with sustainability in times of scarcity, for which he recently received a Vici grant from the Dutch Research Council (NWO).

To date, Mody has mainly focused on the history of nanotechnology and related areas. “The oil industry kept popping up in my research, either in the form of funding or in the training of researchers. For example, I studied the early biotech companies that used nanotechnology and genetic engineering. The histories of major biotechnology companies always seemed to have a section buried somewhere in the middle stating that the starting capital mainly came from the oil industry. Just like that, no further comment. This was the case for three of the four major companies in that sector: Amgen, Hybritech and Cetus. So the oil industry had a major influence in biotechnology right from the outset.”

Why did the oil industry invest so much money in biotechnology?

“That’s one of my research questions. My hypothesis is that after the 1973 oil crisis—from which the oil industry greatly profited—they had a lot of money lying around that they were keen to spend. Biotechnology was just emerging at that time, so it seemed like a good investment. It also had the potential to contribute to technologies of interest to the oil industry. For example, genetically engineered organisms were proposed as a way to break up oil shale to make it easier to extract oil from rock. In the 1970s, when oil was scarce, the oil industry was naturally very interested in alternative energy sources, but in the 1980s, this interest waned. In the 1980s, many oil companies claimed to be interested in alternatives again, but it’s unclear how sincere this interest was. If you look carefully at their plans, you can see that they were—and still are—planning to extract oil for decades to come.”

Why does your research focus on the period 1968–86?

“The Club of Rome was founded in 1968, and it’s also when Paul Ehrlich’s The population bomb was published. Awareness of the scarcity of energy sources was growing. In the 1970s it seemed as change might be possible, that oil would come to play a smaller role in the economy. Politically, too, oil production was under pressure. In many oil-producing countries there was instability due to wars or the oil industry was being nationalised, including in the Middle East, which meant Western oil companies like Exxon, BP and Shell feared losing access to this oil. At the time, they appeared to have no other choice than to look for alternatives.

“Managing scarcity and sustainability: The oil industry, environmentalism, and alternative energy in the age of scarcity’

“Managing scarcity and sustainability: The oil industry, environmentalism, and alternative energy in the age of scarcity’

The mood changed again over the years as new sources of oil were found, for example in the North Sea and Alaska. In the 1980s, political instability and the nationalisation of oil companies proved less of a problem than they were in the early 1970s. OPEC, the organisation of 14 oil-producing countries founded in Iraq in 1960, became a kind of partner to the Western oil companies. And the financial model changed—at least, that’s what I suspect, but it still needs to be investigated. As a result, the oil companies switched their focus from long-term investments to short-term results. Shareholders became less interested in investing in research on new technologies that would only yield returns years later, and opted instead to simply cash in by extracting oil from the ground. All these developments are reflected in the price of oil, which rose during the 1970s, dropped after 1980, and by 1986 was back to its pre-crisis level, the same price as it was in 1973. That’s why I take 1986 as my end point.”

Could the corona crisis change things?

“I’d like to be optimistic. But the current dip in demand for oil won’t last forever. Industries will soon go back to their pre-corona levels of oil consumption—not all, but most of them. What I’m concerned about is that the economic recession that’s bound to follow this crisis will have negative consequences for the alternative energy industry, while the oil industry, which has higher cash reserves, will largely be spared. That’s the pessimistic scenario. The optimistic scenario would be that the government puts money into the economy to get the wheels turning again, and in doing so it focuses on the alternative energy industry in order to foster a more sustainable economy. But, for that, you need political will—and it’s unclear whether that will is there.”

What are you hoping to find in your research?

“I’m hoping to discover all sorts of unexpected things, but what I’m quite certain will be able to demonstrate is that the oil industry is much more involved in the development of new technologies than we think. Not only the oil industry’s money is important for scientific research; so too is the training it provides. Many key researchers have spent part of their careers in the oil industry, which influences what is studied and how it is studied. Usually this influence is seen in a negative light: they undermine the climate debate, they promote climate change denial. They’ve done that too, and we’ll certainly look at that in this project—for example, how the oil industry retreated from and even undermined solar energy in the 1980s. But they’ve also done a great deal of good for science, and contributed to many fantastic discoveries. One of the Nobel Prize winners for chemistry for 2019 has spent much of his life working in the oil industry. He worked on the lithium ion battery, a rechargeable battery often used in mobile phones, laptops and electric vehicles. We have to give them credit for that. But if we want a more sustainable society, with a sound innovation system and research infrastructure, we’ll need to find alternatives to make up for the contributions the oil industry has made.”
New accommodation for the Faculty of Science and Engineering

The new premises of the Faculty of Science and Engineering (FSE) on the Paul-Henri Spaaklaan are set to come into use. The necessary corona measures have been taken and students will receive face masks upon entry. The tower closest to the city is home to the Maastricht Science Programme, the Maastricht Centre for Systems Biology, the master's programmes in Biobased Materials and Systems Biology, and the FSE head office. The north tower houses the Department of Data Science and Knowledge Engineering, the Institute of Data Science, Clinical Data Science and Datahub.

The new building gives Maastricht University its own full-fledged science faculty where groundbreaking research is conducted and study programmes are delivered that will enable us to address the key challenges of the future. <
The PhD candidate studied psychology, the supervisor specialises in law. Anna Goldberg is currently writing her dissertation on the role of addiction in criminal law from a neuroscientific perspective under the supervision of David Roef, endowed professor of Criminal Law. They have learnt a lot from each other, largely thanks to their different disciplinary backgrounds.

Addiction: between personal responsibility and brain disease

Should addiction lead to a lighter punishment if it is understood as a brain disease? In her dissertation, which she hopes to defend next year, Anna Goldberg studies addiction in criminal law from a neuroscientific perspective. Addiction has long mainly been regarded as a personal choice. Goldberg is investigating whether judges are sympathetic to the view that it could result in diminished responsibility, and whether neuroscientific arguments could play a role in this shift in perspective. “These are research questions that emerged from the course Law and Neurosciences,” David Roef says. And they have yielded surprising results.

“During sentencing, judges rarely refer explicitly to the role of addiction. They often deal with it in combination with other problems and give precedence to intellectual disabilities or personality disorders,” Goldberg explains. “I found it surprising that lawyers almost never try to excuse their client’s actions on the grounds of addiction.” Roef suspects that they want to avoid drawing attention to the notion of personal responsibility, preferring to focus on disorders that judges do take into account. “People in the Netherlands have conservative views when it comes to personal responsibility. Lawyers anticipate the simple and widespread belief that addiction is ultimately your own fault.”

Capabilities approach

In her study, Goldberg contrasts two views of addiction: the concept of personal responsibility versus addiction as a brain disorder. She shows that both views neglect what psychologists call the capabilities approach. “What does addiction do to your capabilities? What minimum capacities do you need in order to behave responsibly? Neuropsychology can provide useful information here. Think of comparative brain research on groups of addicts and non-addicts, or neuropsychological measures of reduced impulse regulation. Criminal law can use such information to better understand why a crime has been committed and which punishment is therefore appropriate and effective.” Goldberg examines the role of such neuroscientific knowledge in establishing criminal responsibility. To what extent is an addict able to anticipate consequences or control his or her actions?
The question of guilt
Goldberg hopes her research will kick-start a dialogue on personal responsibility in the context of addiction. “Any sane person will be sympathetic to the argument that a one-off drunken episode that leads to a criminal offence can’t be compared with a crime committed by someone who has been suffering from an addiction for ten years,” Roef says. One option is to require a certain degree of foreseeability if an individual is to be held accountable for an action. “That would allow for a more nuanced view of addiction,” Goldberg explains. “Could the person have foreseen that they would commit a crime if they got drunk or high? If not, can you still hold them accountable?”

Reductionism
This raises the thorny question of whether neuroscience will ultimately undermine criminal law. If we are merely our brains, is there still room for free will and responsibility? This is primarily a philosophical discussion, Roef says. “Anna’s research focuses on the practical usability of neuroscientific expertise in criminal law. You also wouldn’t exclude a DNA test in a criminal case if everything we do is determined by our genes. The value of neuroscience in criminal proceedings is undeniable, without having to reduce everything to the brain.”

Incidentally, it is a philosophical discussion that is sorely needed. “Every discipline views people based on the data and knowledge of that discipline. Behind such insights and conclusions there’s always a risk of reductionism. That’s why interdisciplinary research is crucial,” Roef says. Goldberg’s research also has added value in this respect. “The question that it raises is valuable for many interdisciplinary studies. Neuroscientists look at how the brain works and what the consequences are, but it’s up to lawyers and politicians to debate this information and weigh up the different considerations. This should not be overlooked amid the need for certainty and data.”

Struggle
Both academics have learnt a great deal from each other, mainly due to the interdisciplinary nature of the research. “The legal way of looking at things is new and valuable to me. It’s quite normative, whereas in psychology we take a more empirical and experimental approach,” Goldberg says. “David’s more likely to ask: how should things be? What’s the purpose of criminal law? You can’t do much with bare data. The legal question is: how do we want to deal with this? What will society think of it? When we started collaborating, that was a struggle for me. I’d be there thinking we were talking about the same thing, and I’d discover later that we weren’t.”

Roef: “Anna has given me more insight into the capabilities approach. Law revolves around the core question: when are you responsible for your actions? Even a child understands that this implies certain capacities. We don’t hold a demented elderly person responsible for their actions. So from the neurosciences, the discussion arises: what does addiction do to our capabilities? That knowledge can lead to different legal norms and standards. If people have diminished capacity, does criminal law demand too little of them, or too much?”

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What do a leek from a backyard in Maastricht and tuna sashimi at the Tokyo fish market have in common? Can you still enjoy a jelly pudding if you have seen one rolling along the ground in front of you? And what is the biggest nutrition revolution of recent decades? Annemie Schols discusses her love of Japan, attention, green tea and more.

Professor of Nutrition and Metabolism in Chronic Diseases
Annemie Schols
I love the focus and precision.

Fish-shaped jelly pudding
Raised in Brabant, with a mother who subscribed to the traditional meat-and-three-veg style of cooking, Schols used to see food as primarily functional. Meals were eaten as a family around the table, a tradition she and her husband have continued with their own two daughters. “My mother often made chicken curry with green beans and boiled potatoes. I still recall the first time I had spaghetti, and when the Chinese restaurant opened up in town. And later my mother-in-law’s jelly dessert, shaped like a fish. I couldn’t stomach it; as a child I’d had a mildly traumatic experience.” At a buffet, carrying a tray with a little jelly pudding on it, she accidentally tripped. “I can still see it rolling ahead of me.”

Pure flavours from Japan
These days, the entire family has a soft spot for Japan and Japanese cuisine. It started in the days when sushi restaurants were still rare in the Netherlands. “There was a restaurant in Maastricht that served Japanese dishes in the style of French cuisine. In Japan you normally get all courses on the table at the same time, but they’d first serve a Japanese soup, then hors d’oeuvres and so on.” They got hooked on the flavours, and began bringing home piles of cookbooks. “Japanese cuisine is so much more than sushi and sashimi. It’s about pure flavours, the combination of sweet and salty, small servings of pickled vegetables... Once we even made a Japanese Christmas dinner for the family.”

Fresh, pure and characteristic
And then she went to Japan, and discovered that everything tasted different there. She recalls visiting the fish market in central Tokyo with her two daughters. “Sashimi with freshly cut raw tuna”—she mimics swallowing appreciatively—“you can’t taste that anywhere else. So fresh, so characteristic.” It may well top her list of the most delicious things she has ever tasted.

That said, the leaks from her own garden are not to be sneezed at. “They’re just as fresh; you pull it straight from the soil and prepare it immediately. Leek that I’ve bought from a shop doesn’t taste like that.”

After their boxwood hedges succumbed to a moth infestation and had to be removed, they began planting all sorts of vegetables, from leeks to beets and herbs: “Anything that wants to grow here.” She tries to bring some of that peace and attention home with her, in the form of a sauna session, a soak in the ice-cold outdoor pool, listening to music and, of course, good food.

Green tea
Her research revolves around food, too, specifically the role of nutrition and malnutrition in chronic diseases, or during oncological treatment. In 2011 she underwent chemotherapy herself after being diagnosed with breast cancer. “It made me very aware of what chemo does to taste perception, and the fact that scientists and doctors still pay too little attention to that. Even water tastes different! Green tea really hit the spot for me, but later, when I gave some to a friend who had also had chemo, she could barely drink it! Taste is and always will be subjective, which of course makes it a complicated topic.”

She has no doubts about the biggest food revolution she has witnessed in her career to date. “When I started out as an academic, you were laughed at when you tried to draw attention to nutrition in the treatment of chronic lung diseases. Now it’s a standard part of the treatment, fortunately more and more so for other chronic diseases too, and in oncological treatment plans. That’s the biggest development for me.”

→ Annemie Schols is professor of Nutrition and Metabolism in Chronic Diseases and, since June, dean of the Faculty of Health, Medicine and Life Sciences. For the past 15 years she has been scientific director of the School of Nutrition and Translational Research in Metabolism (NUTRIM).
The corona crisis is having a major impact on migrants both in the Netherlands and abroad. Two senior members of the Maastricht Centre for Citizenship, Migration and Development, professors Melissa Siegel and Maarten Vink, shed light on the situation.

Siegel: “It’s clear that the situation for undocumented migrants and refugees and asylum seekers has become even more vulnerable.”

Vink: “The Netherlands can learn a lot from a migrant-friendly country like Portugal.”

Siegel: “We’re actually seeing a few different things happening. One is that a new narrative is developing around migrants as essential workers, with a lot of positive media around migrant workers in healthcare and the service industry as heroes. But this mostly applies to migrants with citizenship or permanent residency. You also see another narrative emerging around certain countries, especially when we look at the Trump administration, which has always been very anti-immigrant. Trump has tweeted that he is going to completely halt immigration to the US, which he has partly been able to do, particularly when it comes to the resettlement of refugees. He sees an opportunity to implement an agenda that he wouldn’t be able to implement without the corona situation. The same goes for many governments with negative attitudes towards migrants. Look at what Orbán has done in Hungary—feeding misinformation and saying that migrants have the coronavirus. Another problem is that both the UNHCR [the UN refugee agency] and the International Organization for Migration have put their resettlement programmes on hold. A lot of that has to do with issues around documentation and logistics, as government administrations and the international organisations themselves are working at a lower capacity.”

Many claimed that the coronavirus would be a great equaliser. This does not seem to have been the case. Could it still have a positive impact on the situation of migrants?

Vink: “Initially, the claim was: rich or poor, we’ll all get it. It was even said that the rich would be affected more, because they’re the ones who jet set around the world. But it soon became clear that the crisis would only increase inequality. Migrants are at the bottom of the food chain. People in refugee camps were already trapped there, but now they have nowhere to go. The EU countries are reluctant to show solidarity even with the children. Germany and other countries have taken in the most vulnerable, but the Netherlands is lagging behind. Solidarity is very important. I live in Portugal because my wife is Portuguese. I commute between Braga and Maastricht, so I’m familiar with the Portuguese situation. In mid-March, the government realised that both immigrants and immigration services were in a very difficult situation. It formally extended the stay of everyone who was already in Portugal and had had contact with the immigration services in one way or another to 30 June 2020. This has since been extended to 30 October. As a result, migrants have had the same healthcare rights during the pandemic as regular citizens and status holders.”
Maarten Vink is professor of Political Sociology at the Department of Political Science of the Faculty of Arts and Social Sciences. He is joint director of the Maastricht Centre for Citizenship, Migration and Development and head of the research project Migrant Life Course and Legal Status Transition (MiLifeStatus), funded by a Consolidator Grant from the European Research Council (2016–2021). As of 1 September, he holds the Chair in Citizenship Studies at the Robert Schuman Centre for Advanced Studies at the European University Institute in Florence.

Melissa Siegel is professor of Migration Studies at the Maastricht Graduate School of Governance and UNU-MERIT, where she manages several migration research projects. She is joint director of the Maastricht Centre for Citizenship, Migration and Development.

Siegel: “The philosophy behind Portugal’s immigration and integration system is. We were once a major migrant-sending country, we know what it’s like to be immigrants in another country. We want to give people the rights that we would have hoped to have and the treatment that we would have liked to receive.”

The Netherlands calls itself tolerant and open. Does that also apply to the attitude towards migrants?

Vink: “There are international rankings, and the Netherlands is not the most migrant-friendly country, but also not the most unfriendly. Countries like Portugal and Sweden are at the top, with Denmark and Austria much lower in the rankings. The Netherlands is roughly in the middle, along with Germany. In my research on naturalisation, you see the same thing. Between the Netherlands, Denmark and Sweden, Sweden is by far the most liberal. You can be naturalised after five years, there’s no civic integration procedure and the costs are fairly limited. Eighty percent of immigrants become Swedish citizens within 20 years. Even EU citizens naturalise quite often there.

In Denmark, you have to wait nine years, learn Danish to B1 level [of the Common European Framework of Reference, CEFR] and do civic integration. So even after 20 years, you see that only 35% of foreigners have become Danish citizens. The Netherlands is somewhere in between, with around 65% of immigrants becoming Dutch citizens within 20 years. Staying in the Netherlands for five years is a reasonable period for naturalisation, but you also have to integrate and learn the language to A2 level. And obtaining the Dutch nationality has costs associated with it.”

The procedures of the Dutch immigration service (IND) are lengthy and cumbersome. There has been an enormous backlog since 2015, when the large influx of Syrian refugees reached our country. How is the coronavirus affecting IND procedures?

Vink: “Between mid-March and August, the IND was partly closed. It’s now reopened, but the situation means that people who were already undergoing lengthy proceedings to establish their residence or citizenship status will have to wait even longer. You also see this with civic integration, or people with a regular status who want to become Dutch citizens. Their situation remains uncertain for even longer. Language courses and civic integration courses were cancelled, went partly online—it was all very unclear. Of course, fewer migrants arrived in the Netherlands during the pandemic, but now that the number of asylum applicants is increasing again, we’re immediately seeing new reports about shortages of beds in reception centres, about people having to sleep on the floor.”

How would you advise governments to support migrants in the current situation?

Siegel: “Many international organisations and NGOs are calling on governments to really look at the protection of migrants and migrant workers during this period. At the same time, all over the world—especially in the West—we’re seeing a backlash against migrants and migration. We’re seeing rising inwardsness and nationalism, countries saying they have no capacity. In rich, efficient countries, where there’s a will, there’s a way. There’s just no will for this.”

Vink: “I think the Netherlands would have done well to follow the Portuguese example. Uncertainty about one’s legal status and restricted access to IND desks must have caused huge stress among migrants, and perhaps also among IND employees who had to assess urgent cases from home. Civic integration processes are being delayed, whereas we know from research ‘the quicker, the better’. If every migrant were temporarily given the same rights as citizens, they would have had peace of mind—especially when it comes to healthcare—even without legal status.”
Family businesses are like trees: they can be young and small, or decades old and sprawling. When more than half of a company’s shares are held by one family, and the family also plays a role in the management or governance of the company, it is referred to as a family business—at least for unlisted companies. For listed companies, like Heineken, only 10–25% of the shares need to be held by one family for it to be called a family business. “In many family businesses, the aim is to pass the company down to the next generation, which leads to certain strategic choices,” says Van Gils, whose research focuses on entrepreneurship in relation to family businesses. “They generally pursue a conservative financial policy and are less inclined to raise external capital.”

**Good stewards do better**

In her review article for the Instituut voor het Familiebedrijf (IFB, a knowledge centre for family businesses in Flanders), she identified the lessons from academic research into the effects of an economic crisis on family businesses. First and foremost, she says, families need to be good stewards who take the interests of all stakeholders to heart. “So don’t withdraw a lot of capital from the company because the precious son wants a new sports car”, she jokes. Another important factor is for families to be involved in managing the company.

**Good relationships pay off**

In addition to good stewardship and involvement in management, families need to invest in the company’s social capital. “The good relationships that family businesses often have with their customers and suppliers have a positive effect on trust, and thus on contracts. In times of crisis, close relationships with employees and the local community lead to even greater employee commitment.” Despite the similarities, one difference between the 2008 crisis and the corona crisis is that a large proportion of family businesses are now facing succession issues. “Many smaller companies don’t have emergency scenarios in place for when the ‘senior’ family member is suddenly no longer around.”

How to be more resilient for the future

South Limburg has almost 40,000 small- and medium-sized enterprises (SMEs), accounting for some 60% of total regional turnover. To help family businesses become more resilient, the government has set up MKB-Deals (SME Deals), an investment programme to strengthen the SME sector at the regional and local levels. In Limburg, the Maastricht Centre for Entrepreneurship and Innovation (of which Van Gils is a member), together with MKB-Limburg, Zuyd University of Applied Sciences and the Province of Limburg, submitted a project proposal concentrating on small family businesses (up to 50 employees) that often do not invest adequately in innovation and succession scenarios. “We focus particularly on the smaller family businesses, which are lagging behind in terms of innovative power. In 40% of Limburg companies, the ‘next generation’ isn’t interested in continuing with the family business.”

**Family businesses: complex and fascinating**

Looking behind the scenes of family businesses will generate a great deal of research data. In turn, the researchers’ knowledge will benefit the companies. Van Gils is fascinated by the complexity of family businesses. “In the first generation, the company’s values and standards are very visible, but passing them on to the second generation is a challenge. Let alone the third generation, when perhaps a niece or a nephew, who grew up in a different family system, joins the management. By that time, part of the family is working in the company, while another part may only be shareholders. The longer the company exists, the more important it becomes to develop family charters to set out the rules relating to succession or the selling of shares by family members.”

**So how are family businesses faring?**

It is too early to draw conclusions from the ongoing research into the effects of the corona crisis on family businesses. And the results of earlier studies on the resilience of family businesses in times of crisis are mixed. Many studies found that family businesses are more resilient than other companies, thanks to greater customer loyalty; lower levels of formalisation and faithful injections of family capital. Some studies, however, found the opposite, because family businesses invested significantly less than other companies in innovation (during the 2008 crisis) and focused too narrowly on familial interests. As Van Gils points out in her review article, family businesses are important drivers of economic growth as well as major employers. Supporting them in this time of crisis is therefore not only necessary, but also logical. <
When she chose Data Science and Knowledge Engineering (DKE), Dávila had never heard of Maastricht. She found the programme on the Maastricht University website. “It appealed to me because the emphasis wasn’t just on computer programming. I wanted to know more about the mathematics behind data. Everything is data these days, and I love maths. The programme was right up my alley.” It was a bonus that the Netherlands has a ‘cool’ reputation among skaters worldwide. “I live for skating and surfing.”

She has nothing but praise for the programme and for many of her teachers. Dávila especially appreciated the personal approach. “They weren’t the sort of the lecturers who just showed up to teach and then left. They really cared about the students, knew all of us by name. After class they had time for you, asked how you were doing. They talked to you about their work, their research and academic life.” Her advice to current DKE students? “Stay and talk to the lecturers after class. Listen to what they have to say—they’re sensible people with a lot of knowledge and experience.”

In 2016 Marta Dávila Mateu, now a graduate of Data Science and Knowledge Engineering, moved to Maastricht, a city completely unknown to her. Her choice turned out to be a double-edged sword. She found the lack of skate culture depressing, but enjoyed her studies, especially the focus on the mathematics behind data. “I still benefit almost every day from what I learned there.”

Crazy boat party

Student life in Maastricht also had its merits. She had a wonderful group of friends, including many international students, especially from Italy. “I did a lot of partying in my first year. I remember an absolutely crazy boat party on the Maas organised by International Business students—it was the best party ever. In the years that followed I learned to play hockey and joined a team with other students. Thanks to my group of friends I was able to deal with life in Maastricht.”

For Dávila, the big letdown was that Maastricht turned out to be more of a tourist attraction than a skater city. “Also, it rained all the time and the winters were cold. I come from the coast and am used to the sun. I often felt sad, which I called my ‘Dutch depression’. In hindsight, I realise this was because I barely did any skating. If I don’t skate or surf for three weeks I feel down, and I’m less productive at work. Skating and surfing makes me happy and gives me the energy to keep going and stay motivated in everything I do.”

Senior position

Her entry into the world of work went smoothly. Dávila agrees that DKE graduates often find this transition relatively easy. She was able to choose from various options in different countries. “It wasn’t that the work chose me; I could choose the work.” Boldly, she applied for a position as a senior data and software engineer at GTD, a technology company in Barcelona. “Actually, they didn’t think I was qualified, but because a friend had nominated me, they let me participate in the recruitment procedure. The application went well.”

Her work focuses on Meteosat, a cluster of satellites that make weather forecasts for most of Europe as well as monitoring climate change. Dávila works on software upgrades, improving the accuracy and intelligence of the satellites. “I figured I’d do it for a year at most, but I really enjoy it. I always wanted to pursue an academic career and research the development of algorithms for the application of big data. Now I’m not so sure.”

Adrenaline

From the moment she could walk, Dávila was obsessed with balancing on a surfboard and skateboard. She was raised in Sitges, a popular seaside resort in Spain. Thanks to clever time management, she can combine her profession with her passions. “I skate to work and I’m lucky to be able to go to the skate park during my lunch breaks. I go there most afternoons too, and on Friday afternoon my weekend starts with a surfing trip. I spend all my free time skating and surfing. At first I was a bit shy about it at work. You want to be professional and fit in with your colleagues. But my bosses find it funny that I can combine both.”

The skate and surf scene would seem to be worlds away from the culture of computer programmers. Not so, Dávila says. “In both worlds, if you want to get results, you have to keep on trying. It takes discipline and perseverance.” And the difference? “Surfers and skaters are very relaxed; they seek fun and adrenaline, extreme activities that require little thought. Whereas mathematicians and data scientists like logical challenges, they get a kick out of thinking. Surfing and skating help me let go of my work, so I can return to it afterwards full of energy and a fresh perspective. And because at work I use my brain rather than adrenaline, I can come back to the sport stronger. This way I get the best of both worlds.”

www.maastrichtuniversity.nl/alumni
Hildering van Lith is often invited to join debates and panels for her knowledge and outspoken opinions on diversity and inclusion in the music industry—or rather, the lack thereof. “The music industry still has a long way to go in terms of true equality”, she says from a terrace in the west of Amsterdam, where she now lives. “Publishers, producers, record labels; you rarely see a woman at the top. There are still big salary differences between men and women doing the same work. Harassment and inappropriate behaviour are not limited to the fashion and film world. I don’t know a single woman, myself included, who hasn’t been harassed or intimidated at work. Or missed out on a promotion purely because she was pregnant, for example, or wanted children. I find that problematic, it’s true. So I try to do something about it.”

**Facts**

Her efforts include her work for the Association for Electronic Music (AFEM), an international non-profit organisation that advocates for artists, musicians and others in the industry. Among other things, the AFEM conducts research into sexual harassment and discrimination in the music business. “Everyone knows it’s happening, but that’s not enough. If you want to change things, you need evidence. That’s why I’m now doing a broad data analysis for the AFEM to demonstrate that we need to do things differently, improve things in this sector. Make it fairer and safer too, especially for young talent.”

**People**

Born in Amsterdam, raised abroad, she wound up in Maastricht more or less by accident. “My mother was one of the first psychologists to specialise in female trauma. She helped victims of incest and abuse, focused on empowerment. We lived in Belgium, the Antilles, the US. When I finished high school we happened to be living in Amsterdam. I thought long and hard about what to study. I wanted something broad, something that paid a lot of attention to people. I wanted to learn how a person thinks, understand what love and sorrow are, who we are. So psychology it was. Just like my sister later, and definitely inspired by my mother. The choice for Maastricht wasn’t a very conscious one, though. I was too late to enrol at other universities and Maastricht was the only place that didn’t have a cap on the number of students they could admit.”

**Maastricht**

And so, in 2009, Hildering van Lith moved to the very south of the Netherlands, to the country’s youngest university. The transition was not easy. “I wasn’t interested in living the student life, I was there to learn. Fortunately, I got all the inspiration I needed out of the programme. Psychology is great, especially if you’re lucky enough to work with passionate teachers and professors in small tutorial groups. Problem-Based Learning suited me: being critical, asking questions, solving problems. Being allowed to challenge everything in the study material is the best thing there is. The opportunity to study should be a basic right for everyone—that would be a boon for equality all over the world. My time in Maastricht made a huge contribution to my personal development.”

**Revolution**

Hildering van Lith went on to the master’s in Work and Organisational Psychology. In 2014, before she had even graduated, she landed her first job at a major music distributor: FUGA, a music tech company that distributes and collects master rights from major record labels worldwide. “Perhaps not an obvious move for someone with a psychology background, but music has a heart and soul for me. It’s people who make music. I witnessed from up close the great revolution in the music business. Suddenly, physical carriers such as CDs were obsolete, they made way for digital downloads and ultimately the streaming era, partly due to players such as Spotify, which have completely changed the way people consume and produce music. I worked there for six years and learned a lot. I was immersed in the technical and commercial side of a rapidly changing industry, set up a marketing department, and worked my way up to become regional head of business development.”

**Startup**

After a brief stint at a record label, this year Hildering van Lith decided to join a startup adventure: LEDO, with entrepreneur and founder of Spinnin’ Records, Eelko van Kooten. “Between the two of us, we have a lot of experience, and different types of experience, in this dynamic world. Eelko is a hugely successful publisher and label manager, and I’ve put in the miles on the tech side of things. We’re setting up a company with the mission of helping young talent in an honest, transparent and sustainable way. Artists are still too dependent for their success on choices made by others purely on the basis of business, not based on a love of music or what’s best for the artist. We don’t believe you need to make concessions in either area.”

**Giving back**

LEDO is set to launch in late 2020. “Our team is growing rapidly. Naturally, it’s very diverse and inclusive. We give our people freedom and opportunities. Practice what you preach. Money is not what motivates me. As a CEO, you serve your team and your company, not the other way around. To future psychology students, I’d like to say: if you find your passion and combine it with something you can give back to the world, you’ll be fine.”

Sarah Hildering van Lith

obtained her high-school diploma from the European School, followed by a Bachelor in Psychology and a Master in Work and Organisational Psychology in Maastricht. She then worked briefly for Shell and spent six years at FUGA. This year, she started her own company with business partner Eelko van Kooten: LEDO, a platform for music producers and artists. Sarah is also an active member of the Association for Electronic Music (AFEM).

Helping young musical talent in an honest, transparent and sustainable way
Thanks to a heart transplant, Rogier Veltrop survived a life-threatening illness. The Maastricht University researcher wants to make the most of his ‘bonus years’ by contributing to a new treatment for cardiovascular disease.

Following his donor heart

“The heart - and mind of Rogier Veltrop

“I woke up after my heart transplant in pain, but also in a state of disbelief. My body was in such a bad state, I was certain I wouldn’t survive the operation. I’d more or less said goodbye to my family, friends and the hospital staff. It was only when I was sure the operation was a success that disbelief gave way to relief. I’ve been given a second chance at life.”

Dreaded diagnosis

Veltrop has lymphoma, a genetic disorder that manifests in his case in severe heart problems. The disorder has already taken the lives of several family members. Veltrop seemed perfectly healthy — until he wasn’t. “I was young, fit, played competitive volleyball and wanted to go into science. I was doing my PhD in the US when I started to get tired quickly. Fatigue can be a sign of heart failure, so I came home to see the doctor, just to be sure.” After many referrals, he received the diagnosis he had been dreading.

After that, his health deteriorated rapidly. Veltrop struggled with ventricular disorders, atrial fibrillation and cardiac arrest. He looked death in the eye on more than one occasion. “At my worst, I could only walk 50 metres at a time. I couldn’t tie my own shoelaces. A heart transplant became my last hope.” In 2015, that hope became a reality.

With his recovery going well, Veltrop was keen to continue his PhD. He was doing research on a subject that had little priority in the West: coronaviruses. “The first coronavirus, SARS, was mostly seen as an Asian problem. Some research had been done, but not on a large scale. One of the things I was looking into was how the virus penetrates a human cell. Among the researchers, there was a suspicion that a new coronavirus could also cause major problems outside Asia.”

Veltrop never completed his PhD on coronaviruses. After his heart transplant he was not allowed to continue; he had been out for too long. “I was told to do another master’s degree and start over elsewhere. At first I was mad, obviously. But ultimately it gave me the opportunity to learn more about cardiovascular disease, and to make a difference for my fellow patients.”

Blood cell to stem cell

Veltrop is a third-year PhD candidate at Uniklinik RWTH Aachen and the CARIM research group at Maastricht University. His interim results are promising. “With just a tube of blood from a patient, I can make personal stem cells and change them into custom-made beating heart cells. These heart cells provide new information about the patient, about cardiovascular disease and other abnormalities. In follow-up studies, my team and I will study ‘sick’ and ‘healthy’ heart cells to gain a better understanding of various disorders. We can also experiment on the cells with different treatments. We want to share all this knowledge with other researchers through a worldwide database.”

Breakthrough treatment

The heart cells from Veltrop’s doctoral research may also form the basis for a new treatment that actually cures cardiovascular disease. He explains enthusiastically: “We’re going to investigate whether cells can replace diseased and damaged parts of a heart. A surgeon would remove the heart from the body, repair it with new cells, and put it back in again.”

How groundbreaking is this approach? “Right now the best we can do is control the symptoms of cardiovascular disease, using blood thinners, antihypertensive drugs or even a donor heart. The new treatment would solve the problem entirely, while also being patient-specific and fast. And we can make other cells, too, for the liver, lungs and other organs, so we may be able to help even more people. In a decade or so, these types of treatments could be a reality.”

Limited life expectancy

A bittersweet accomplishment, because Veltrop himself may not be around to see it. People with a donor heart live on average for another 10 to 15 years. He recently celebrated the fifth anniversary of his transplant. “I’ve become more critical of how I use my time. I don’t have a bucket list, but I would like to become a professor in Maastricht. For the rest, I want to have fun — in my work, but also with volleyball, which I’ve taken up again through the Sport and Transplant Foundation. My team has been to the World Transplant Games twice and won a gold and a silver medal. I’d love to experience that again.”

Corona crisis

This is a tense time for Veltrop. “I’m in the at-risk group, so I’m sticking closely to the measures despite the relaxations. In time, expect a kind of flu shot for corona will be developed in addition to a vaccine, which will reduce the number of seriously sick people and deaths and help us return to the ‘old normal’. Corona will be just another part of life, like colds and the flu. Whatever happens, I’m making the most of it. Life has taught me: live consciously, take care of your body, put things into perspective, don’t take anything for granted. And do as many things as possible that make your heart beat faster.”

To raise additional research funding, Rogier Veltrop has started a crowdfunding campaign through the Limburg University Fund/SWOL. You can contribute via www.umcrowd.nl

The University Fund Limburg / SWOL provides support and inspiration to entrepreneurial ULM students. The fund awards grants to student activities four times a year, contributes financially to the Student Idea Competition, and includes scholarships and student projects — such as the recycling machines — in its annual fundraising campaign ‘For Each Other’.

www.usf-swol.nl

University Fund Limburg / SWOL

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Rogier Veltrop began his PhD on coronaviruses at Drexel University in Philadelphia. After his heart transplant, he followed the Master in Biomedical Sciences in Maastricht. He is currently doing his PhD in the CARIM research group, Department of Biochemistry, Maastricht University, and through the European project CaReSyAn at Uniklinik RWTH Aachen. In 2019, he received the Harry Struijker-Boudier Award for Talented Academics for his stem-cell research, was selected as ‘ITN (International Training Network) Fellow of the Week’ by Marie Skłodowska-Curie Actions and received a grant from the Limburg University Fund/SWOL.
Jeroen Kooman
new director of education innovation institute EDLAB

Maastricht University’s Executive Board has appointed Jeroen Kooman as the new director of EDLAB, the UM institute for educational innovation. Kooman is professor of Chronic Kidney Failure at the NUTRIM research school and internist at the Maastricht UMC+ since 2015.

Kooman has had a successful career at the Faculty of Health, Medicine and Life Sciences and the Maastricht UMC+, where he has long combined patient care, research and teaching. He completed his undergraduate studies at UM and obtained his PhD here in 1992. “I’m looking forward to working with an enthusiastic team in the coming years to help achieve UM’s ambitions in the field of educational innovation and development,” Kooman said. “For me, an important task is to connect knowledge and expertise in the various faculties, whereas innovation in education has accelerated in recent months. The momentum is there for the further development of Problem-Based Education in a changing society. As a knowledge centre and network organisation, EDLAB can play an important role in this.”

€1.9 million grant for research on feeding of ICU patients

A joint research study by nine Dutch and Belgian hospitals on protein-rich tube feeding for ICU patients has received a grant of €1.9 million. The study is led by the Maastricht UMC+ and Ziemenhuis Oost-Limburg in Genk, Belgium. The grant was awarded by the Netherlands Organisation for Health Research and Development (ZonMw) and its counterpart the Belgium Health Care Knowledge Centre (KCE).

Thanks to the corona crisis, the relevance of this research has become ever clearer. In late March and early April, hospital ICUs were overflowing with seriously ill corona patients. After a week-long stay in the ICU, patients’ muscle strength and fitness had often dropped dramatically. Recovery takes months and requires a great deal of energy. People with severe problems of recovery after a long stay in intensive care. The administration of protein-rich tube feeding to ICU patients may have a positive effect on muscle build-up, muscle maintenance and recovery times.

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 (MHEYS)
- School for Oncology and Developmental Biology (GROW)
- School of Health Professions Education (SHE)
- Institute for Education

Faculty of Science and Engineering
- University College Maastricht (UCM)
- University College Venlo (UCV)
- Maastricht Science Programme (MSP)
- Aachen-Maastricht Institute for Biobased Materials (AMIBM)

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 (MCCE)
- 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 Cognitive and Clinical Neuroscience
- Clinical Psychological Science
- Cognitive Neuroscience (CN)
- Experimental Psychopathology (EPP)
- Neuropsychology & Psychopharmacology
- Work & Social Psychology
- Maastricht Brain Imaging Centre (M-BIC)

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 (MACS)
- Accounting, Auditing & Information Management Research Centre (MACR)
- European Centre for Corporate Engagement (ECCES)
- United Nations University – Maastricht Economic Research Institute on Innovation and Technology (UNU-MERIT)
- Social Innovation for Competitiveness, Organisational Performance and human Excellence (NCSOPE)
- Marketing – Finance Research Lab
- Service Science Factory (SSF)
- Maastricht Sustainability Institute (MSI)
- Maastricht Graduate School of Governance (MGSOG)
- U-MIO - executive branch
- Education Institute

Interfaculty institutes
- The Maastricht Forensic Institute (IMF)
- MERIN Institute for Technology-Inspired Regenerative Medicine
- The Maastricht Centre for Citizenship, Migration and Development (MACIMIDE)
- Maastricht Multimodal Molecular Imaging Institute (M4I)
- Maastricht Centre for Systems Biology (MaCSBioc)
- Maastricht Centre for Arts, Culture, Conservation and Heritage (MAACCH)
- Centre for European Research in Maastricht (CERIM)
- Institute for Transnational and Euroregional cross border cooperation and Mobility (ITEM)
- Institute of Data Science (IDS)
- Brightlands Institute for Smart Society (BISS)

Major EU funding for ambitious brain project

The European Commission has signed a €150 million grant agreement to fund the Human Brain Project (HBP) during its final phase from 2020 to 2023. Rainer Goebel, from the Faculty of Psychology and Neuroscience (FPN), leads one of three scientific work packages that investigate and develop brain networks at multiple spatial and temporal scales. An international effort at the interface of neuroscience, artificial intelligence and neuromorphic hardware, this project focuses on the creation of cognitive architectures inspired by biology that serve as ‘brains’ for robotic systems. The project has been allocated a budget of €15 million, €3 million of which will go to Goebel’s team at the Department of Cognitive Neuroscience.

“It’s a great honour to lead this important project of the HBP, which integrates the work of researchers from disciplines as diverse as neuroscience, AI, robotics and neuromorphic hardware,” Goebel said. “Together with Mario Senden, Yannick Morel and a growing team of modelling experts at the Department of Cognitive Neuroscience, the funding will enable us to contribute to our understanding of embodied cognition. Our goal is to bring more brain knowledge into AI and deep learning, and to use insights from modelling to advance our understanding of how brain-like neural networks perform perception, cognition and action.”
Blow up

Want to know which part of Maastricht is zoomed in on? Visit the Facebook page of the UMagazine.

facebook.com/maastricht.university