

WUR from within: straight, sharp, transparent

No 03

Resource

SEPTEMBER 2021 VOLUME 16

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allowed again

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FOREWORD

Big Brother

Surveillance cameras are everywhere in our streets, continuously monitoring us. Could this be done in barns too, wondered researcher Suresh Neethirajan? The answer is a resounding yes! Neethirajan is making serious progress with ChickTrack, a monitoring system that keeps track of individual chickens and how they are doing (p. 20). A real Big Brother scenario. But the intentions are noble. The aim is to improve animal welfare by detecting diseases before they become manifest and by keeping chickens contented to prevent the loss of birds.

But you could take a different view: ChickTrack optimizes intensive livestock farming to a perverse degree. Could this work outside of barns as well? A kind of HumanTrack permanently monitoring humans to detect diseases and deviant behaviour before they become manifest? All with the best intentions of course: improving public health.

I admit it's far-fetched, dystopian and inconceivable. Just as far-fetched, dystopian and inconceivable as social distancing, working from home, face masks, curfews and separating out the unvaccinated.

Roelof Kleis
Science editor



OPEN-AIR

A new exhibition area consisting of 10 billboards has been set up in the open air next to Impulse. The idea for the outdoor gallery arose during the Covid crisis when not much was possible indoors. The exhibitions are intended to spark debate, explains the campus community manager Nicolien Pieterse, and 'touch on our work on campus'. The first exhibition is a display of photos by recent WUR graduate Jurriaan Veldhuizen (25), taken during his graduation study of the informal waste industry in Ghana. Veldhuizen: 'When I stood on one of the largest rubbish dumps in West Africa, I thought: other people need to see this too.' LZ



Parliament wants to abolish loan system

A comfortable majority in the Lower House of the Dutch Parliament voted to abolish the loan system and reintroduce the basic grant.

This happened during the Parliamentary Debate of the new National Budget on Thursday 23 September. Three motions to end the loan system were tabled, two

The current caretaker government does not have to take action yet

of which passed. SP and Volt each introduced a motion, while ChristenUnie and CDA submitted a joint motion. SP's motion was rejected but the other two were

passed with overwhelming majorities. VVD was the only major party to vote against the motions. SP asked the caretaker government to take action immediately whereas the other two motions



Plenary Hall of the Lower House on Bezuidenhoutseweg in The Hague. Photo Creative Commons

only 'declared' that something should be done.

It's a subtle difference but it means that the current caretaker government does not have to take action yet. Another difference is that Volt, ChristenUnie and CDA say nothing about compensating students who missed out on a basic grant, whereas the rejected SP motion does mention this.

Final blow

Student organization ISO sees the votes as a victory and calls them the 'final blow' for the loan system. But the prime minister Mark Rutte warned that introducing a new basic grant will take

time. The Education minister Ingrid van Engelshoven says various plans have already been drawn up but it will be up to the new cabinet to deal with this. That new cabinet will also have to decide what to do about compensation for the students who have amassed big debts in the past few years. Van Engelshoven says the associated costs could be 'considerable'; reports nu.nl: 'possibly several billions that you then wouldn't be able to spend on higher education quality'.

All in all, it seems inevitable that the next cabinet will be reintroducing the basic grant; but what the new system will look like exactly and how soon this will happen is as yet unclear. HOP

Full classrooms allowed again

As of 25 September, students no longer have to wear face masks in the education buildings, and teachers may lecture to groups of more than 75 students.

For exams, the maximum group size was scrapped on 20 September. The easing of these restrictions comes in the middle of the first period of the academic year. The timetable for this period was still based on a maximum of 75 students per class, and the timetabling department is not going to change that halfway through

the period. Teachers with classes in a big room are now allowed to admit more than 75 students. For teachers in smaller rooms, the situation remains unchanged.

Teachers who want a bigger room in period 2 can get in touch

The timetable for period 2, which starts at the end of October, was already made by the timetabling department before the restrictions were lifted. That means that all the lecture rooms are scheduled for a maximum of 75 students, as in period 1. Teachers who need a bigger

room can contact roostering@wur.nl. Teachers who were already allocated a bigger room, or who don't need space for more students, do not need to get in touch.

For periods 3 and 4, the timetablers are working on the assumption that all the Covid measures will have been lifted, and that the maximum room capacity will be used. That could change, of course, if Covid infections go up again this autumn and the government announces new measures.

Whatever happens, WUR wants to hold all exams on campus. Only in exceptional cases will students be allowed to take exams online at home. AS

40,000

Ten Wageningen students want to help resolve the nitrogen crisis with their project Cattleyst: ammonia and methane filters for cow barns that work using genetically modified bacteria. They need 40,000 euros for experiments. They currently have 25,000 euros. You can support the project via crowdfunding. wur.nl/project/cattleyst



The students are competing in iGEM (international Genetically Engineered Machine). For information on their method, see the QR-code.

Sofa Science: clouds and Covid

In the SofaScience film series, WUR scientists chat about their research. And about other things: Resource's student editors and WUR students Anna den Hartog and Laura Bergshof ask them about what makes them tick. The fourth episode in the series went online on Monday. In it, Laura talks to Meteorology and Air Quality researcher Chiel van Heerwaarden about the summer of 2020. Laura: 'The sky was bizarrely blue in western Europe and it was extremely sunny. One theory about the reason for all that sunshine was that there were fewer emissions from cars and aeroplanes thanks to the coronavirus, so cleaner air allowed more sunlight to get through. Laura joined Chiel van Heerwaarden on the sofa and chatted to him about sunshine and clouds. wa



Wild, but hardly wary of humans at all: the Veluwe red deer Hubertus. Photo Maarten van der Belt/wildfotografie.nl

Enjoying the memory of Hubertus

The death of the iconic red deer Hubertus has sent many nature-lovers into deep mourning. Nevertheless, he will end up on the menu at the Hoge Veluwe national park's restaurant. What does that tell us about our relationship with nature?

The most frequently photographed deer in the Netherlands was recently found badly injured after a fight with a rival. Hunters put him out of his misery. The news of his death was met with an outpouring of distress. Which an announcement by National Park De Hoge Veluwe did nothing to diminish. Hubertus' remains were to be

served in their restaurant, just like those of other animals shot in the park.

Matthijs Schouten, a retired professor of Ecology and Nature Management, says Hubertus' story 'exemplifies the ambivalent, and even somewhat schizophrenic relationship between humans and nature.'

He clarifies: 'It illustrates that humans will automatically bond with wildlife if it comes close enough to them. This approachable deer was even named and became an individual. For such a beloved creature to

end up on someone's plate seems ironic.

However, we must not forget that "getting our food from the wild" has been the basis of our existence.'

Schouten, who doesn't eat meat himself, understands how the idea of Hubertus steak and sausages appals people. 'Must we really eat an animal like this one?' he asks rhetorically. 'The fact that this bothers people indicates that our relationship with nature is changing. We no longer automatically assume that nature is there to serve humans.' Schouten applauds this development. 'Although this moral principle should also apply to the chicken we buy at the supermarket.' ME

‘Speed up transition’

In the second Tech Speech, students announced the follow-up steps they want to take in the coming year to speed up the transition of society in various areas with the aid of technology.

The Tech Speech is a tech variant on the King's Speech and is drawn up by students at the four technical universities. They are working on five issues: energy, the circular economy, digital security, healthcare and food & agriculture.

In food & agriculture, the students, who include Fons Janssen and Job Brom from WUR, want shorter supply chains from producer to consumer. The idea is that this will not only raise awareness among consumers but also increase farmers' margins.

That principle will soon be put into practice by installing milk taps in supermarkets to deliver milk from local farmers. The agricultural machinery company Lely, which is involved in the implementation, calls it a 'challenging but not impossible idea.'

The Tech Speech 2021, with Prince Constantijn and WUR president Louise O. Fresco in the audience, can be viewed online at 4TU.nl. ME



Photo Shutterstock

Soil life on the silver screen

After a number of successful films about nature in the Netherlands above-ground, the focus is now shifting underground.

The film is an initiative by the Postcode lottery project 'Under the meadow', a three-year programme jointly run by the Centre for Soil Ecology, the Netherlands Institute of Ecology (NIOO), IUCN-NL and the Butterfly Foundation. The project's aim is to draw attention to the need to restore soil life and the importance of a healthy soil. 'The film is the fulfilment of a long-cherished wish,' says soil expert Gerard Korthals, coordinator of the

Centre for Soil Ecology. The film will be produced by EMS Films, who also made the acclaimed films *The Wild City* and *The New Wilderness*. The filmmakers will also visit the experimental farm in Lelystad.

The film is about a group of people who embark on the cultivation of a patch of ground. Some members of the group go about this in the conventional way, while others are looking for a new way of relating to the soil and soil life. There is a leading role for the worm as an indispensable soil processor. The film will premiere during the Soil Animals Days in 2022. RK

The ideal workplace

What does your ideal workplace look like and can you portray it in a box? This was the surprising question Clementine Sluijsmans put to 29 members of the WUR Council. The group includes young (21) and old (65) and six different nationalities from all parts of the organization. The boxes are wooden Ikea boxes with a glass lid that make ideal display cabinets. The results of this art project are on show in a small exhibition in the Atlas lobby. Sluijsmans, who was until recently a receptionist in Atlas, sees this as her farewell gift to WUR. Has Covid changed our relationship with the workplace for good? What surroundings let you perform optimally? What is their look and feel? The 29 mini display cabinets give some creative answers, ranging from realistic to abstract. Worth a peep. RK

Photo Roelof Kleis



The roast smell from veggie stock

Predicting how food is going to smell is extremely difficult. But a start has been made.

This is the holy grail in the food industry: being able to develop tasty food at the computer. Product development is still mainly a question of trying things out. How great it would be if you could develop an aroma based on your knowledge of the ingredients and the production process.

‘There are so many substances contributing to the roast smell’

Carmen Díez Simón got her PhD for a cautious attempt at this. That attempt forms the culmination of her thesis, in which she analyses the aromas of savoury fermented products such as soya sauces and instant soups. She got a tasting panel to assess a series of vegetarian soup stocks for 34 characteristics related to taste, smell and mouthfeel. The chemistry of the same stocks was then analysed. That chemical analysis was done with GCMS, a combination of gas chroma-

tography and mass spectrometry that detects and identifies volatile substances. As many as 290 volatile substances were detected, some of which were hitherto unknown. A model then tried to link the chemistry to the experience of the tasting panel.

This produced a clear match for one group of substances: pyrazines. Pyrazines are responsible for the typical roast and chicken-like smells in fermented stocks. That's the first step, says Díez Simón. But she is wary of over-optimism. ‘There are so many other substances that contribute to that roast smell as well. Aroma is a complicated subject.’

‘Many different ingredients give the same aroma,’ she adds, ‘and some substances can cause several different aromas. There is no simple linear relationship between the composition of a sample and the aroma it gives off.’ Then there is the fact that the analytical machines don't detect everything. The human nose is more sensitive than a mass spectrometer, says Díez Simón. ‘I could smell some substances that came from the gas chromatograph where the mass spectrometer didn't detect anything.’ HK

Smart search for traits

Scientists want to use artificial intelligence to find the right data in the search for the genes for climate-proof and disease-resistant crops.

Plant breeders want to develop drought- and salt-tolerant crops while maintaining yields. Finding all the genes for these complex traits feels like looking for a needle in a haystack. Having more data doesn't always help, says molecular biologist Richard Immink, because it just makes the haystack bigger. Better data,

‘Bio-informaticians are going to help us identify the data we need right from the start’

selected using artificial intelligence (AI), is expected to offer a solution in the new research project Plant-XR.

Plant-XR involves plant and data scientists from the Universities of Wageningen, Utrecht, Delft and Amsterdam. They have now got the green light from the Dutch Research Council NWO to write a research plan involving a larger team of scientists and plant-breeding companies. If that plan is approved, NWO will contribute 30 per cent of the programme budget of 50 million euros.

Besides Immink, WUR plant physiologist Christa Testerink and bio-informatics experts Dick de Ridder and Aalt-Jan van Dijk are taking part in Plant-XR. They want to find a new method of making agricultural crops climate-proof.

There's an important role for AI algorithms in this, says Immink. ‘Currently, plant scientists often collect data and then ask the help of a bio-informatician at a later stage. In our project, the bio-informaticians start helping us identify what data we need to find the needle in the haystack right from the start. So, not big data but smart data.’

There are trade-offs in this process, says Immink. Wild variants of a plant can sometimes be resilient in the face of drought or disease, for example, but produce low yields. And sometimes a gene regulates both a desirable and an undesirable trait. ‘So we want to know what the interactions between genes are, and how they combine to drive complex traits.’ AS





A Little Wiser

Why does snow sometimes look white and sometimes blue?

On photos of the polar regions, you often see snow and ice that look bluish. At other time, they look as white as – well, snow. Why is that?

‘Light seems transparent but is actually made up of different colours,’ says Jasper van der Gucht, professor of Physical Chemistry and Soft Matter. One of the times when you see those colours is when the light is reflected off water particles in the air, and you get a rainbow. Light consists of vibrating waves and every colour has its own frequency of vibrations per second. The colour with the highest frequency is blue, and red has the lowest frequency. Van der Gucht: ‘We see a colour because materials reflect certain colours and absorb others. The colour we see is always the one that is reflected.’

A leaf is green, for example, because it reflects green and absorbs other light. If a material reflects all the light falling on it, we see it as white; if it absorbs all of it, it will be black. If light goes through it, it is transparent. ‘Water mainly absorbs infrared light and UV light,’ explains Van der Gucht. ‘Of the light visible to us, only a very little bit of red light is absorbed, and the rest passes through it, so it is colourless.’

Snow is water in crystal form. A thin layer of clean snow is white. That is because snow crystals, unlike water, reflect the light ping-pong-fashion;

eventually all the light comes back and you see it as white. Polar bears look white for the same reason. Their fur is transparent and reflects all the light.

The amount of light that gets absorbed by a thin layer of snow, or a polar bear’s fur, is negligible. But if the snow is deep enough, it eventually absorbs a substantial amount of red and yellow tints. That leaves more blue light and an expanse of snow gets a blue tint when the sun tries to penetrate it.

The same goes for a thick layer of ice, like a glacier. And the deeper you dive underwater, the more colours disappear. If there is enough of it, water too can absorb all the colours in the end. Red light is the first to disappear, then orange and when you dive very deep, the water absorbs yellow, green and, last of all, blue too. Then you are in the dark. \perp



‘If there is enough of it, water can absorb all colours eventually’

Jasper van der Gucht,
professor of Physical
Chemistry and Soft Matter

Every day we are
bombarded with sometimes
contradictory information.
So what are the facts of the
matter?

In this feature, a scientist
answers your burning
questions. Asking questions
makes you wiser. Do you
dare ask yours? Email us at
redactie@resource.nl

Illustration Marly Hendricks

Not all digital innovations are beneficial

On 22 September, data scientist Sjaak Wolfert and Louise Fresco gave the WUR Mansholt Lecture in Brussels.

Digital innovations can have undesirable side effects that are not always easy to predict, says data scientist Sjaak Wolfert. He is not just referring to ethnic profiling using facial recognition. He points to the food delivery service thuisbezorgd.nl, which has monopolized the delivery of meals in the Netherlands to such an extent that individual restaurants have little alternative than to join thuisbezorgd.nl. How can you prevent such dependency? By thinking about the setup for innovative digital solutions at the start, says Wolfert. In the past few years, he was the project manager of the EU project Internet of Food and Farm 2020, which investigated and guided digital innovations. For example, firms in the farm sector such as Agrifirm, CRV and FrieslandCampina set up a digital platform for dairy farmers. Farmers can become members of this joint-data platform, says Wolfert, but the rules specifically state that the platform cannot be taken over. That way, you make sure the farmers don't become dependent on tech giants when using sensors and digital software in their barns.

Hubs

Responsible digital innovations are complex processes, says Wolfert, because you have to consider the technology, economics and embedding in society. In the European project, it turned out there were at least 30 start-ups working on sensors to monitor cows' health. Wolfert's project brought them in contact with one another so they could decide to share their know-how or alternatively to differentiate their products.

Now Wolfert wants to set up a network of Smart Agri Hubs in Europe, where entrepreneurs collaborate on innovations in local hubs and share information with other hubs. AS

Peatland and forest don't go together

Europe doesn't have much peatland left: most of the peat has been cut and harvested. Is there any future for what remains? Not everywhere, suggests a Wageningen study of the mechanism behind the formation and disappearance of peat bogs.

The first author is Ype van der Velde, a PhD graduate of Wageningen who now works at the VU University Amsterdam. As a postdoc at WUR, Van der Velde wondered whether landscapes are subject to tipping points, like many natural phenomena. Are there pairs of landscape type that emerge from one another after a tipping point?

Yes, forest and peatland form an inseparably linked system of this kind, shows the work of Van der Velde and his colleagues from several Wageningen disciplines. Where organic matter piles up, the soil becomes wetter and fewer trees grow, causing the soil to become even wetter, and peat eventually forms. The mechanism also works the other way round, so that when peatland dries out, a forest grows up.

Peatland map

On the basis of this feedback mechanism, Van der Velde developed a model that shows where in Europe the conditions are right for the formation or preservation of peatland. On that 'virtual peatland map', one third of Europe

theoretically has a climate suited to maintaining existing peatland. Creating new peatland, however, is only possible in a fraction of those locations.

The real peatland map of Europe looks very different, though. One fifth of the existing peatland is found in areas that

'There is a strong chance of peat bogs disappearing as temperatures rise'

are sensitive to tree growth, according to Van der Velde's model. 'There is a strong chance of those peat bogs disappearing as temperatures

rise because they are supersensitive to the slightest disturbance. And once they are gone, you can't restore them easily.' Peatland and forest cannot be studied independently of each other, says Van der Velde. 'If you want to preserve peatland, you need to look at the context as well, at the opposing forces of forests and rivers and their interaction with the peatland.' RK



Photo Shutterstock

What's that creepy-crawly?

This year's Soil Animal Days were launched this week with an inspection of the roof garden at the Netherlands Institute of Ecology (NIOO).

The organizer, WUR soil expert Gerard Korthals, picks up a tree trunk to see what creatures are sheltering under it. That is exactly what volunteers all around the country are being asked to do between now and the end of next Wednesday: find and count soil animals. In the garden, under stones, between plants, or in a patch of dug-over soil. This is the seventh edition of this Citizen Science project. What once started as a one-day extension of Animal Day has turned into a 10-day event, at least. Korthals: 'To make it easier for people to join in'. The Soil Animal Days are primarily about awareness-raising, says Korthals. 'We use them to try and generate more recognition among the general public of the importance and utility of a healthy soil.' And the residents of that soil are crucial to its health.

Happy Families

Using a simple determination table and a score card, everyone can go into action in their own garden. According to Korthals, the scores provide a fairly reliable picture of the ecological condition of the garden. Promotion materials such as a pack of Soil Animals Happy Families cards help ensure you learn something in the process as well.



Giulia Bongiorno and Gerard Korthals inspect the roof garden at NIOO.
Photo Roelof Kleis

Who knew, for example, that the humble earthworm has 10 hearts? Or that woodlice carry their young in a pouch between their front legs, just like kangaroos? Or that mice can carry up to 50 times their own weight?

The Soil Animal Days are still only a Dutch event to date. But if Korthals has his way, that will change. 'There is more and more interest among our neighbouring countries. And WUR wants it to become international too. We're going to take up the idea, but it will require funding. At present, the whole thing is run on a voluntary basis.' RK

In other news science with a wink

◆ SPIDER

Researchers at the University of Basel have developed an app to help people conquer their fear of spiders. The key feature of Phobys (as the app is called) is a virtual 3D spider. And the scientists claim that it works. After each 'level' in the game, users dare get a bit closer to a real spider. The app is available free... on the web of course.

◆ GREEN LIGHT (1)

Scientists at MIT in the US have created watercress that emits light. The secret lies in the addition of

nanoparticles to the plant. The particles absorb light and then slowly give it off again. After charging for 10 seconds, the plants light up for a few minutes. Not enough to read by yet, but it's a start.

◆ GREEN LIGHT (2)

The material that is added to the plant to provide illumination (phosphorescence) is strontium aluminate. This is inserted into the leaves via the stomata, wrapped in silica nanoparticles. In the leaves, the little packages form a subcutaneous illuminating layer.

The researchers are dreaming of soft lighting from plants. Green light, naturally.

◆ CLARITY

Chinese scientists at Tianjin University have developed a method for providing visibility in murky water. Light that gets scattered by objects consists partially of polarized light. A special algorithm converts that light into an image, paving the way for the researchers to create a camera that sees clearly. They think this could be of use to rescue services and archaeologists. RK

Asphalt

There have been concerns about the increasing amount of asphalt on the campus for years. There was an outcry when the bus lane was created in 2014, and another about the cycle path to Aurora. To create that cycle path, WUR felled 14 trees in the Dassenbosje wood last January; in June, part of the pond at Zodiac was filled in; and in August part of the protected hedgerow along the Bornsesteeg was removed. The plan is to extend the cycle path as far as Dijkgraaf, which will mean filling in part of the pond behind the Mondriaanlaan bus stop. Local residents have posted angry tweets about that cycle path, I saw. WUR responded with a story about the importance of good infrastructure. Which is true, of course. Why don't those people get that? Always whingeing about flora and fauna, protected landscape elements, a green environment... sigh. Anyway, there's no problem because WUR always makes sure it thoroughly compensates for loss of nature. Just look at the saplings and shrubs to the south-west of



Vincent Oostvogels

the Dassenbosje, which were planted to compensate for the large, mature oaks felled for the bus lane some time back. Maybe some of that new vegetation will have to give way to the new section of cycle path, but hey – we can compensate for that too.

Let's be honest here. Asphalt will keep on spreading across the campus. Good infrastructure is very important and there is no other way to achieve that. So WUR might as well put a stop to the whingeing in one

'Asphalt will keep on coming on campus'

fell swoop. Away with that old Dassenbosje, away with that protected hedgerow and all those ponds –

just asphalt the whole lot. Put in a few plant containers to compensate – but make sure they are on wheels. Then you can move them as soon as they get in the way.

Vincent Oostvogels (25) is in the first year of his PhD research on biodiversity restoration on dairy farms. He dreams of being able to keep a few cows himself one day.

The room shortage is a matter of perspective

How serious is the room shortage in Wageningen? It depends a lot on who you ask. Students say competition is fierce. The university and student housing provider Idealis think the situation is not too bad.

Text Coretta Jongeling • In collaboration with Marloes Klaasse

In the run-up to this academic year, more than 2800 prospective students and PhD researchers registered on ROOM.nl, looking for a room.

ROOM.nl is a platform run by accommodation providers Idealis and DUWO, and 1598 students have found a place through it. The other students have either found somewhere by another route, are not actively looking, or are obliged to commute to the university every day.

Of all the rooms available on ROOM.nl, 875 are reserved every year for first-year students, both local and international, who are coming to Wageningen for a longer period and are given priority status. This does not include exchange students, although they are prioritized too, along with Dutch students living more than 130 kilometres away from Wageningen.

This year there were 1000 priority students registered on ROOM.nl. Of these, 863 have found a room via the website. It is not clear how the other 137 students have fared. They may not have

come to Wageningen in the end, or they may have found a room by a different route or have taking lodgings. Or maybe they are still looking.

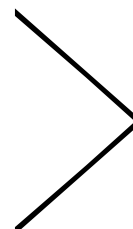
There is a shortfall of about 22,000 student rooms in the Netherlands, according to the Knowledge Centre on Student Housing. Students in Groningen occupied a university building in protest against the housing crisis, and Twente University emailed internationals without a room suggesting they reconsider their choice of university. It didn't come to that in Wageningen. Quite how serious the shortage is here is hard to tell. And September is just one moment; later in the year, rooms will be vacated as students graduate. The situation here is relatively good, say both the university and Idealis. But what does that mean?

Idealis cannot provide any hard figures on the number of students actively looking for a room in Wageningen, says Louise Dijkmans, responsible for



TENT

Like many fellow students, Christiaan van Vliet, a first-year student of Biotechnology, still hasn't found a room in Wageningen. He comes from Zwolle and would have to spend three hours a day in trains. Instead, he opts to stay on a campsite. 'I enjoy camping, I've been doing it all my life and I know what I'm doing, but it's not as nice when you have to do it to be at university.' The camping affects his student life. He has adjusted his daily routine to natural light, he has no Wi-Fi or direct electricity supply in the tent, and he can't leave his tent unattended at night. And sadly, the campsite will be closing soon. 'I'm asking around as much as I can and telling people I'm still in a tent.' He is registered on ROOM.nl as well, but the waiting list is long there too.



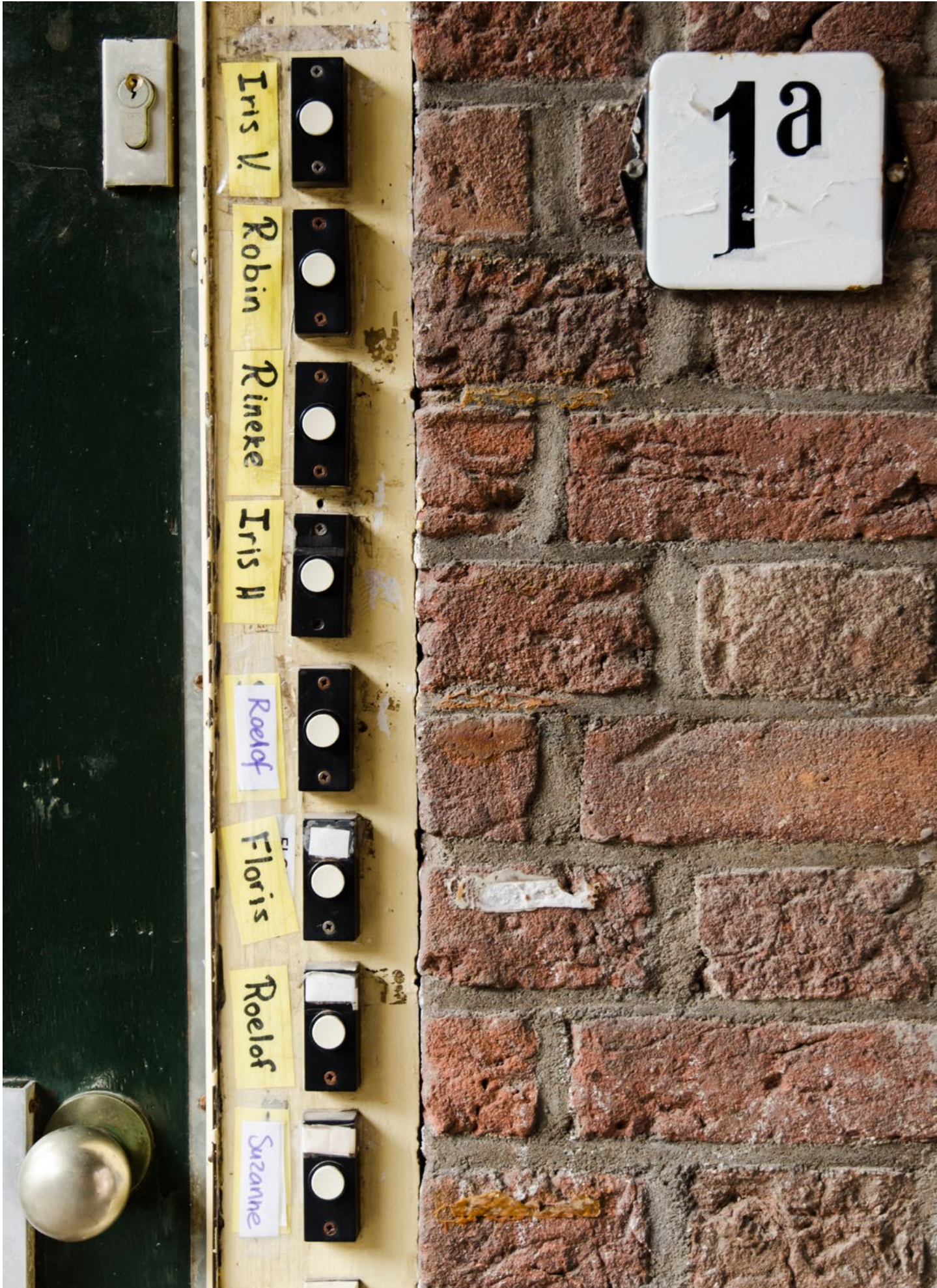


Photo Joris schaaap

marketing & communication at Idealis. 'We can see how many people are registered on ROOM.nl, but that doesn't mean they haven't found a room. Some students stay registered in case they want to move again later. Most of the phone calls we get are from people who haven't found anything. But we have only had one student on the line who was in real difficulty.' Can they give an estimate of how many students are still looking? 'It is not a large number, a handful at the most.'

Catching up

The university doesn't see any major problems either. 'There are no international students left on our list of people looking for rooms,' says Ingrid Hijman, head of the Student Service Centre. 'In fact, we always reserve a couple of extra rooms for latecomers, but we didn't need those. It was a bit harder than usual for exchange students this year, though. A lot of students didn't move into rooms last year because of the Covid crisis, when all the teaching was online. Now you can see that they are catching up, and students who stayed a year longer with Mum and Dad are very keen to move out now. Normally many of the sublet rooms go to exchange students, but this year a lot of Dutch students are interested in them, so there is more competition than usual. But this does not affect the international students coming for a longer period. We reserve those 875 places for them.'

But we have spoken to internationals who were still looking for a room. Hijman: 'That shouldn't happen. If students have followed the registration instructions and paid in time, they should have a room. They do have to respond to rooms themselves, and



A GUEST

Ko May Wang came to Wageningen from the US at the end of August to do his Master's in Organic Agriculture. He started off as a guest in someone's attic and has now found a sublet for two weeks at the Bornsesteeg. 'The annoying thing about not having a permanent address is that I can't register with the municipality. And without an address, I can't apply for a social security number, so I can't open a bank account. That means I can't receive my grant as that can only be transferred into a European bank account. The search for a room is time-consuming and stressful. I would prefer to invest that time in my studies. I respond to every offer I find on various websites and social media. I don't need luxury; just somewhere I can put a bed is fine. Room.nl did grant me priority status, but I have never made it past fourth in line. The priority status was removed on 15 September, so I have now fallen back to place 60-70 in line for a room. I emailed Idealis about it but didn't get an answer.'



HOTEL

Richard Castelete is a Russian first-year student of Environmental Sciences. He is currently staying at a hotel, as he has failed to find housing. What he is looking for is hard to find: an apartment with more than one room. 'I want to live alone and have an extra room. I have many family members in Europe who I expect will be visiting frequently. I will probably have guests staying over nearly every week. This is impossible if you live in a small room with shared facilities. Moreover, I really want to live in Wageningen, not in Ede or in Renkum. Picky? Yes, I am. But I just want to feel at home.' Castelete's search has been unsuccessful so far. 'Many landlords don't want students in their apartment. They probably think we create a mess or throw parties every week. Convincing them that's not how I am is difficult. If I haven't found anything by October, I will have to find a room to sub-rent, as I can't afford this hotel for much longer.'

'It's not like booking.com where you are guaranteed the room you want'

to several rooms at once. It's not like booking.com, where you are guaranteed the room you want.' In other words: some students are too picky. Both Idealis and the university have noticed an increasing preference for self-contained studios. Hijman: 'Many

students start out thinking: I want my own room, with my own kitchen and toilet. That might be partly because of Covid. But there just aren't enough self-contained studios for everyone so they often end up on a corridor and in the end they find they actually like that. Dijkmans, from Idealis, says: 'We advise students not to be too fussy in the summer period. You can always look out for a nicer room later. And when you are looking, it's important to respond regularly and quickly to rooms on offer.' ■



UNIQUE houses

There are student houses and then there are weird and wonderful student houses. In this feature we visit those UNIQUE houses.

Judith: 'Our house is next-door to the old Jewish cemetery and over the years, the theme of the 'hereafter' has been cultivated here. Our house colours are black and orange – the Halloween colours and those of our house tipple, Cointreau. And our mascot is a raven. Our bar bank card is under its claw, and when we go out together we take the raven along. The youngest has to carry him because they have to pay the bill. The house was built in 1908, and the last burial took place here in 1925. The house is full of references to death; skeletons hanging up, 'In loving memory' on room doors, with

the names of previous occupants, and on the door of the living room it says, 'Those who are about to die salute you'. We are a close-knit group. We go away for a weekend together every year, we have an odd-jobs weekend and an annual barbecue, to which previous occupants are invited too. During the Covid period we became even closer, possibly. We chatted more often and more intimately, and we held regular parties together in the cellar, and a 'biercantus'(a beery singsong) in the living room. So the atmosphere is anything but deathly...' WA

House :

Grafzicht (Grave View)

Residents :

Koen Volkering (22, Biotechnology), Pietjan van Krimpen (19, Food Technology), Mees de Jong (19, Food Technology), Mauries Meijer (20, Molecular Life Sciences), Tessel de Vries (22, Biology), Judith Groen (24, Nutrition & Health), Willem Kögeler (23, Plant Sciences), Abigail Johnson (22, International Development Studies), Det Krabbenborg (19, Forest and Nature Management), Auke Derksen (20, Landscape Architecture).

Unique because :

The house is next to the historic Jewish cemetery on the Generaal Foulkesweg and 'death' is everywhere.

If you too want your UNIQUE house in *Resource*, send an email to resource@wur.nl



From left to right: Judith, Koen, Pieterjan, Mees (standing), Tessel and Maurice. Photo Guy Ackermans

Serre Red

A 4000 m² greenhouse with 63 compartments in which temperature, lighting, humidity and plant nutrition can be adjusted separately. This greenhouse is for research on genetically modified and quarantine organisms such as viruses, fungi, bacteria and nematodes. So the greenhouse must be hermetically sealed. In the interests of security and insulation, this research greenhouse has double glazing.

Digital tour:



NPEC Greenhouse

A 1000 m² greenhouse for the Netherlands Plant Eco-phenotyping Centre (NPEC), a national facility for the close monitoring of the growth of plants. This greenhouse has four compartments: in two of these, a moving camera photographs the plants, and in the other two, the plants are moved towards cameras that measure them in 3D. Suitable for studies on drought and salt stress, for example.

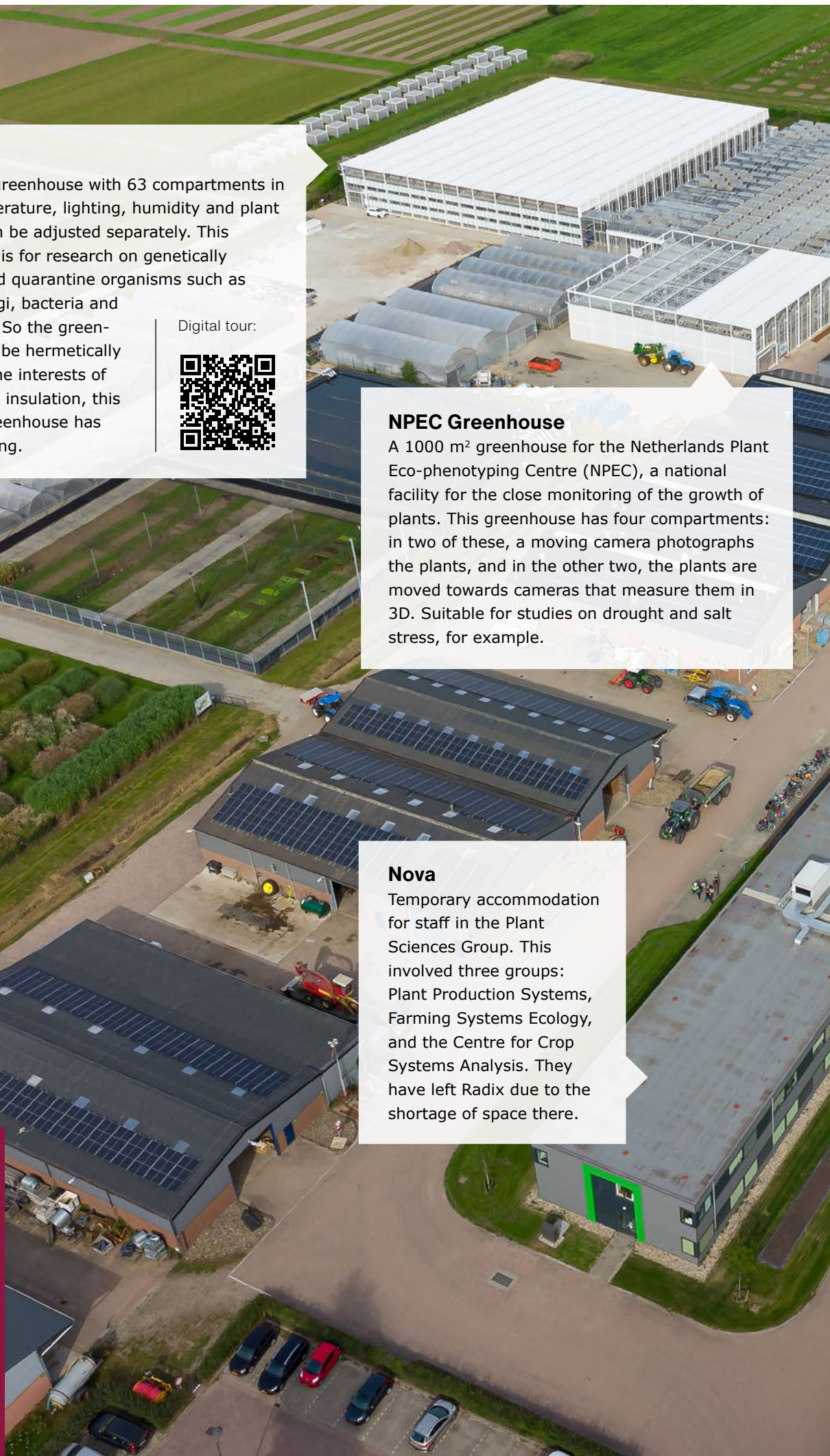
Nova


Temporary accommodation for staff in the Plant Sciences Group. This involved three groups: Plant Production Systems, Farming Systems Ecology, and the Centre for Crop Systems Analysis. They have left Radix due to the shortage of space there.

NEW GREENHOUSES ON CAMPUS

A number of new WUR greenhouses and research facilities have gone up to the north of the campus in the past few years. Here's a bird's eye view. AS

Photo Sven Menschel





Hot and cold storage

A heat storage tank and a cold storage tank, each holding 800 cubic metres of water, provide the means of heating or cooling the greenhouses. WUR wants to connect all the greenhouses to these tanks. Once that has been done, the gas and oil-fired boilers in the old energy building will be removed.

Energia

None of the above-mentioned greenhouses run on natural gas anymore. And that is thanks to the new energy building, Energia, which is connected to the hot and cold storage system (ATES) on the campus. ATES extracts hot and cold water from the ground and Energia also uses heat pumps in winter and cooling machines in summer to maintain the right temperature in the greenhouses.

NPEC Building

This building contains five 15 or 20 m² climate cells, in which cameras take measurements of plants under a range of climatic and light regimes. In four of the cells, the plants are monitored continuously. The fifth is a root cell, in which the plant roots grow between sheets of glass, and cameras automatically measure root growth.

Insect greenhouse

This greenhouse is still under construction and will replace the 35-year-old insect greenhouse. The new greenhouse is 800 m² with 22 compartments in which research can be done on the interaction between plants and insects. While the researchers are taking measurements here, no insects must be allowed to escape.

Two sides

The academic year should be shorter

The Young Academy recently proposed that the academic year in the Netherlands should be shortened to reduce teachers' workload. The student union LSVb were sceptical, pointing out the risks of trying to cover the same course material in a shorter time. Researcher and teacher Chiel van Heerwaarden and student Nick Ligthart discuss the matter.

Text Albert Sikkema • Photos Guy Ackermans



Chiel: 'A working group from The Young Academy published its recommendations under the title *A smarter academic year*. I agree that the teachers' workload has got to be reduced, but we are also in favour of good education, and we want the university to invest enough time in that. The point is that we are already doing that in the Netherlands, more than in our neighbouring countries in fact, whereas the standard reached by our students is the same as that of German or French students. In which case, you should ask yourself: how can our education be more effective?'

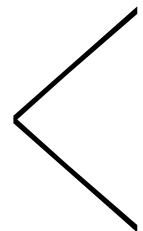
Nick: 'What you should ask is, what are the differences? The Netherlands has an average of 30 teaching weeks, as opposed to 29 in Germany, 24 in Belgium and 21 in England. Who decides on those differences? Within the Netherlands, you see that WUR has 29 teaching weeks, compared with 35 weeks at Erasmus University. That's a bit odd. It makes me

think: watch out in Wageningen that the quality of the education doesn't suffer if you reduce the number of teaching weeks.'

Chiel: 'You can only shorten the academic year if you change the education system, in consultation with students. I had to supervise a resit this year on 4 August. In the middle of the summer holidays. That puts pressure on both teachers and students.'

Nick: 'I'm studying International Land and Water Management. That is largely a science degree, and the students need a lot of contact hours. If my degree programme were to lose many weeks of contact time, I'm afraid the workload would be higher in the remaining weeks. After all, you've got to get those credits from somewhere. The teachers could cover less material and focus more on the

'Introduce deadlines for theses and ACT groups'



Nick Ligthart, student of International Land and Water Management and chair of the student union Student Alliance Wageningen in 2019

> 'You can only have fewer teaching weeks if you invest in students' autonomy'

Chiel van Heerwaarden, member of the Young Academy and a researcher at Meteorology and Air Quality



main lines, but then you might leave out material that happens to interest me.'

Chiel: 'It's true that you can't just cover the same material in fewer weeks. I think you can only have fewer teaching weeks if you invest in the autonomy of the students, encouraging them to go in search of knowledge and answers to their questions in the non-teaching weeks. A university must guide that process, but if the students learn to do this right from the start of their degree programme, they benefit from it throughout their studies.'

Nick: 'That way, you can reduce the workload for teachers, but you keep up the pressure on students. I think my programme is OK as far as workload is concerned, and we already have a fair amount of independent study. I experience the most pressure in weeks 2 and 3 of a period, when you get a lot of information and don't yet have a sense of exactly what you're supposed to do with it all. I'm not sure how you could cut down on the teaching on these courses. We also have regular group work, and we really need time for that. Anyway, I would rather have two or three courses per period.'

Chiel: 'The problem with short courses is often that teachers are tempted to stuff too much information into the course. We must resist that fragmentation

in education. We could organize the timetable so that teachers can concentrate their teaching into two of the five education periods, giving you time outside that period for research and other tasks. Personally, I feel pressured if I have to do too many little tasks at the same time and don't have enough time for them. I would rather be busy with somewhat fewer but bigger tasks that I can focus on.'

Resource: 'Do you have recommendations as to how the academic year could be shortened without drastic measures?'

Chiel: 'Fewer exams would help, saving you some time. Dutch universities not only have a lot of exams, but students here are also allowed a lot of resits. Fewer exams would reduce the pressure on both students and teachers, especially around the summer holidays.'

Nick: 'In Wageningen, there is often no deadline for a thesis, so students sometimes continue working on their thesis for weeks in the summer holidays to get it finished. The same goes for

ACT groups that go on for longer. If you introduce deadlines, there is more chance that students take a break in the summer.'

Chiel: 'I think Wageningen education has been changing in the direction of more autonomy for students. You get more online instruction now, so that students can prepare for work groups and taught sessions independently. But that only works if students really do it.'

Nick: 'That kind of autonomy means the university must teach the students how to study.'

Chiel: 'Students mustn't be the victims of the teachers' workload, and we mustn't solve one problem by creating another; we should make each other stronger. It is a very tricky problem but remember that creativity suffers under stress, and that goes for both teachers and students.' ■

What do you think?
Go to [Resource-online.nl](https://resource-online.nl) to comment on the article

Smart system tracks individual farm animals

FOLLOW THAT CHICKEN!

Technology for keeping an eye on individual farm animals is being developed with great rapidity. WUR researcher Suresh Neethirajan is making great strides with ChickTrack.

Good farmers know their animals and can see whether a cow, chicken or pig is feeling well and happy. They might even know their animals by name, if they have names. 'With a cow, for example, you only have to look at three things,' explains Neethirajan. 'The eyes, the ears and the mouth. How do the eyes look, and how much of the whites of the eyes can you see? Are the ears back or do they hang? What about the position of the mouth? But it takes training to see these things,

and it is rather subjective.'

And what about a chicken farmer with a barn containing thousands of birds? How can he see which chickens are sick, weak, or feeling off-colour? This is the kind of farmer who stands to benefit from ChickTrack: a system using cameras and sensors that follow and monitor chickens individually, providing the farmer with the information he needs for managing the farm. The chicken's wellbeing is the main focus, Neethirajan emphasizes. But the farmer will benefit too, of course. A lot of animals are lost in livestock farming. They may stay too small to be slaughtered for their meat, or they end up with bruises, fractures and wounds. And that is bad for both the animal's welfare and the farmer's bank balance.



Text Roelof Kleis

Suresh Neethirajan got his inspiration for ChickTrack from microbiology. 'I had two years of training in that field at the Oak Ridge National Laboratory in the USA. I understand how to analyse the social networks of micro-organisms. I wondered whether that could be upscaled to the macro level of chickens. How do they talk to each other? What is the pattern of their movements? What kinds of noises do they make when displaying certain behaviour? And how could we use technology to measure those welfare indicators?'

Heat map

ChickTrack works with video cameras that film from different corners of the barn. This footage is then analysed using specialized computer software (YOLO, You Only Look Once) and deep-learning technology. This enables ChickTrack to differentiate between chickens and track their movements

STRAVA

Keeping track of chickens is popular. PhD student Malou van der Sluis is finishing off her study in which she tracks individual chickens via a sensor on their leg. The chickens are kept in a run with special flooring fitted with antennae. The system works, says Van der Sluis. 'The idea was to find out whether you can monitor the activities of individual chickens this way. And you can: it works on a small scale in a research setting. It's still a big step to apply it in a real-life setting, though.' Follow-up research is also needed to correlate the recorded activity of chickens with their health and welfare. Van der Sluis: 'More activity seems to go together with a good life for the chicken, but the relationships between these things are not crystal-clear.'

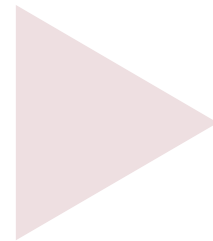
around the barn individually. The recognition is based on the animal's measurements: small differences in shape and size that the human eye barely detects, but the computer does. And all this takes place without touching the chicken.

The algorithm doesn't come with the ability to do this; it has to go to school first. Neethirajan: 'That is the beauty of artificial intelligence. There are a variety of systems available these days, which work like a neural network and learn fast. Of course, it depends on the available computing power. But thanks to the fast developments in electronics, computing speeds are increasing enormously, while costs are decreasing.' Besides the standard cameras, Neethirajan also used thermal cameras and microphones. 'Microphones for

'THAT IS THE BEAUTY OF ARTIFICIAL INTELLIGENCE'

recording the sounds birds make, and thermal infrared cameras for measuring body temperatures to see how that temperature changes through the day and in response to the animal's welfare situation. We have a heat map of a chicken's body. Situations that arouse anxiety, for instance, cause the temperature of a chicken's comb and throat to change much faster than that of the rest of its body.'

The distribution of heat over the body is a good gauge of the chicken's emotional state and its welfare, reckons Neethirajan. 'In this context, you could



ChickTrack can distinguish individual chickens and track them as they move around the barn. It recognizes them based on their dimensions – small differences in their shape and size that humans don't notice but the computer does. Photo Shutterstock

‘WITHIN A FEW SECONDS, THE ALGORITHM CAN MAKE A DECISION AND PASS IT ON TO THE FARMER’

see emotion as e-motion, with the “e” standing for energy. So, energy in motion: how the energy spreads around the body. That’s how I look at it.’

Besides eyes (cameras) and ears (microphones), there are also artificial noses (odour sensors) that register the chickens’ metabolisms. ‘They breathe out different mixtures of chemical substances, depending on the food they get. In theory we can measure that for each bird separately. We’re talking here about very small quantities, so the sensors have to be super-sensitive to pick them up.’

Fast decision-making

ChickTrack integrates all these signals to get a picture of the chickens’ welfare. Neethirajan: ‘Within a few seconds,

the algorithm can make a decision and pass it on to the farmer. And the farmer can then adjust things like the light or humidity in the barn, or change the composition of the feed. Decisions with which you can influence the behaviour or emotional state of the animals.’

‘I started out as a bio-engineer,’ says Neethirajan. ‘When I see a problem, I think about a solution. If you want to improve welfare in the poultry sector, you need to detect animal diseases early. Small differences in behaviour can be indicators of major issues in terms of improving animal welfare. But this is not just about measuring the

negative indicators of welfare. Positive indicators are important too. Are there signals we are not yet aware of, for example? And can we use them to improve welfare through technology?’ According to Neethirajan, we are living in a ‘VUCA’ world that is **v**olatile, **u**ncertain, **c**omplex and **a**mbiguous. ‘We never know what’s going to happen next. There are so many uncertainties, and everything is so dynamic. Artificial intelligence and big data enable us to think up possible solutions to problems that are not yet fully visible to the human eye.’ ■

HAPPY COW

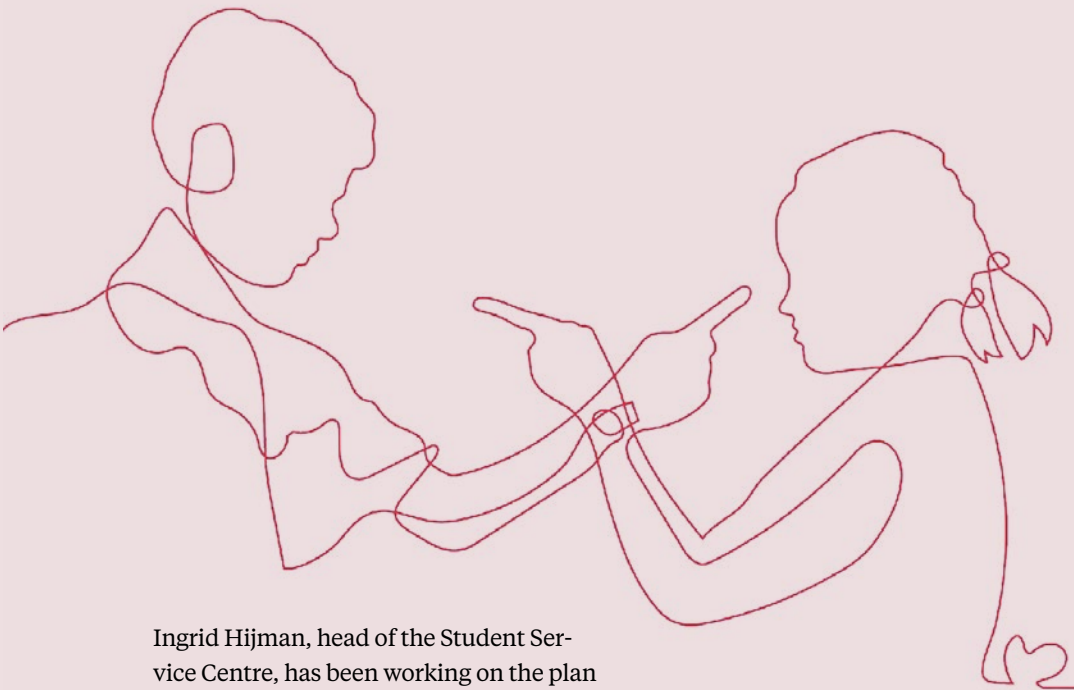
With ChickTrack still under development, Suresh Neethirajan has already embarked on his next eye-catching project: reading the emotions on the faces of cows and pigs. ‘The idea is to understand the animals’ emotional make-up using video footage of their faces,’ he explains. To this end, a software program is being developed that can analyse the images. During the study, the animals are fitted with sensors that also measure biomedical vital signals on the animals’ skin. Neethirajan: ‘We use a kind of sticker with sensors that measure the animals’ heartbeat, breathing rate and activity. It’s a question of non-invasive measurements: we won’t be taking any blood or hair samples. The sticker only weighs a few grams and sits on the skin like a tattoo. The signals are sent to a base station in real time.’ The project is called Solaria. Its overarching goal is to create tools that will help farmers improve the welfare of their animals.



Suresh Neethirajan

WUR launches action plan to tackle sexual violence

The action plan is partly based on a manifesto by Amnesty International. Amnesty recently called on all academic and applied universities to sign the manifesto and promise students and staff better protection against sexual violence. Illustration Shutterstock



Ingrid Hijman, head of the Student Service Centre, has been working on the plan for a while: 'Research by Amnesty in the Netherlands recently showed that 11 per cent of female students and 1 per cent of male students were raped while at university. The general response in Wageningen was that it doesn't happen here, but when talking to various societies you see it really is a problem here too. There is also the issue of sexual intimidation, both among students and with staff harassing students. This must not be tolerated.'

Let's Talk About Yes (LTAY) Wageningen is also involved in the action plan. They are a group of current and former students who are calling on behalf of Amnesty on applied and academic universities to take steps to better protect their students and staff. WUR's action plan is one of those steps. Hijman: 'Some key actions are that we will be giving all students bystander training, that staff who have regular contact with students will be trained to deal

'We will soon be offering all students bystander training'

with topics relating to sexual violence in a trauma-sensitive way, and that the procedures for reporting incidents and filing complaints will be clearer for everyone in the education community.'

Don't brush reports aside

Reporting sexual violence and sexual intimidation does not always go well at present, says Hijman. 'That is clear from a survey by Dawn Cheong from new student

initiative Nouvelle WAG among WUR students. Some students were told that a complaint could damage their career. Staff who have a lot of contact with students need to learn not to brush complaints aside and to deal sensitively with such reports.' Until recently, WUR students suffering harassment were told to go to the police, says Hijman. 'That is essentially telling them it is not our job to do anything about the problem. But if you are a victim and have to sit in the same lecture room as the perpetrator, that can be very tough.' WUR chose not to sign Amnesty's manifesto, but it does support the objectives, says rector Arthur Mol: 'We only sign statements, manifestos and other public declarations if they focus primarily on research and education and if we are able to co-author the document.' Instead of the signing, an event will be organized in the autumn for student societies, the municipality of Wageningen and Idealis, among others. 'We are disappointed that Wageningen will not be signing the manifesto,' says LTAY Wageningen. 'Especially because there seems to be a lot of interest within the university. Many other universities have signed it.' LZ | CJ ■

Students affected by someone else's inappropriate behaviour can ask one of the confidential counsellors for advice: vpstudent@wur.nl

Picking up the threads in Suriname

Now that it is possible again, Suriname is keen to restart collaboration with WUR. Projects in the areas of vegetable cultivation, residue research, the climate and rice cultivation have already been formulated. But who is going to foot the bill?



Text Albert Sikkema

The president of Suriname, Chan Santokhi, paid a visit to the Netherlands early this month. He talked to the Dutch government, appeared on TV, and visited WUR's greenhouse horticulture research centre in Bleiswijk, together with his minister of Agriculture, Prahlaad Sewdien. After a nine-year interruption, Suriname is keen to collaborate with Wageningen again. The Netherlands put its collaboration with Suriname on hold for years because Suriname had passed amnesty legislation giving former president Desi Bouterse immunity from prosecution for the 'December assassinations'. The Netherlands froze the millions of euros of funding allocated to Suriname in a treaty after it became independent in 1975. That money might be made available again now that Bouterse is no longer president and is to go on trial.

Pesticides

The new government particularly wants to work with WUR on reducing the use of pesticides in vegetable and rice farming in Suriname. Too many pesticide residues on these foods is not just bad for human health and the environment, but affects Suriname's export opportunities as well. So Suriname would like advice from WUR on the use of Integrated Pest Management (IPM), in which biological methods and natural enemies are used against pests and diseases. 'The question is, which biological methods work well in Suriname's hot, humid climate,' says Arianne de Bye, an advisor to the Surinamese minister of Agriculture, Livestock and

Fisheries. And an alumnus of Wageningen University. Suriname has also asked WUR to help with setting up a laboratory for residue research. This lab would test food safety. A testing lab of this kind was built by the government 10 years ago, with EU funding, but it burnt down just before it became operational. 'Thirdly, the government seeks WUR's help with charting and analysing climate change in Suriname. De Bye works on this issue through her part-time job at the UN's Food and Agriculture Organization (FAO) in Suriname. An FAO project aims to collect data on things like flooding, drought and salinization in the coastal plains of Suriname, an area with a lot of rice, vegetable and livestock farming. That data should form the basis for an approach to adapting the production system in Suriname to reduce its negative impact on the climate and respond better to the changing climate. WUR, in the person of Annemarie de Groot, knows a lot about the data system that Suriname could use for this purpose. De Bye hopes that De Groot will give training courses in Suriname about which data are required for a good analysis and how to feed the system with data. The aim is to prepare a large-scale project to make agriculture in Suriname resilient in the face of climate change, says De Bye. Due to be submitted to the Green Climate Fund, this is another project that WUR can contribute to with its knowledge and experience. One potential problem is that the FAO works with much lower rates for training and consultancies than WUR is used to.



Wageningen founded CELOS (the Centre for Agricultural Research – back left in the photo) in Suriname in 1965 and is now exploring the scope for new collaboration with the institute. Photo: Beeldbank DML, 1971

‘WUR can help Suriname reduce pesticide use’

Partners of old

So WUR also wants to explore cheaper ways of collaborating with local partners, and looks to a partner of old: the Centre for Agricultural Research in Suriname (CELOS). CELOS was set up in 1965 by the then Wageningen Agricultural College, which led the research there until Surinamese independence. After that, the Agricultural College continued to run projects with CELOS, but that stopped after Desi Bouterse's coup in 1980. Although it doesn't have much research funding, CELOS is still the best and most reliable partner in Suriname in the field of agricultural, environmental

and forestry research. The centre, currently led by WUR alumna Imana Power, has good laboratories, for a start. Another potential Surinamese partner has emerged recently: the Anne van Dijk Rice Research Centre Nickerie (ADRON). This centre, named after a rice-breeding pioneer from The Hague, was established in 1994 to increase rice production. The rice centre is near the small town of Wageningen in Suriname, where Dutch Wageningen staff set up the Foundation for the Development of Mechanized Agriculture in colonial times.

This centre has been in decline for decades. With the help of WUR alumnus Robert Elmont, ADRON is now trying to revive the collaboration between the two Wageningens. The centre is mainly seeking support with the problem of heavy metals in the soil – the likes of arsenic, cadmium, lead and mercury – that pose a public health problem.

Everyone is hoping the new Dutch government will finance this sort of project, and therefore awaiting the new government in the Netherlands. But Suriname is looking at international funding sources too. De Bye: 'I can see there's a lot of money available but so far we don't submit enough projects that get approved. I see potential if we collaborate well and get people with expertise involved.' ■

Operation catch-up

Student society culture curbed by Covid

The Covid-19 pandemic has been quite a blow for student societies. Students who joined in 2019 had six months of 'normal' society activities; the cohort of 2020 hasn't experienced 'normality' at all. How can you help them start feeling at home?



Text Luuk Zegers

One thing is clear: it takes some doing, as KSV Franciscus chair Djoeke Dankloff (21) knows from experience.

'During the Covid period, it was much harder to create a strong bond with your cohort or with the society. The members who joined in 2019 and 2020 have some catching up to do. Helping them do that is our main task this year.'

The society is pulling out all the stops to do this. A four- or five-strong committee has been set up for each cohort, with one task: strengthening the ties among the cohort. 'By having sweat-shirts made for the cohort, for example, and organizing activities for them,' explains Dankloff. 'Normally, we only do that for the new cohort, but now there is a committee for every cohort.' Besides these committees, a reintegration committee has been set up for last year's first-years. Dankloff: 'They only got introduced to the society's mores (unwritten rules of conduct) during the online introduction, but that is not the same as the normal society introduction weeks. By running a kind

of 'reintroduction' in-person, we are trying to strengthen the bond with the society in an enjoyable way.'

Fraternity fair

Other societies are facing the same problem. At SSR-W, activities that are normally for first-years are now open to second- and third-years too, says chair Anne van der Molen (20). 'Like the fraternity fair, for example, at which first-years can get to know the various fraternities (clubs with members from different years).' New committees have also been formed to run weekend trips for the various cohorts ('good for cohort bonding'), and the mores are being enforced more strictly.

'Mores are passed down from generation to generation, and everyone should follow these unwritten rules,' says Van der Molen. 'We couldn't do that properly this year because the last cohort didn't have an in-person introduction and couldn't come to the clubhouse. Some newbies might not feel like fully fledged members. So we want to organ-

ize activities for that group so that we really draw them into our society culture.'

Good company

At WSV Ceres, too, they are pondering how to help the last two cohorts to catch up, says chair Sil Penders (22). 'The current third-years experienced six months of society life as it should be in their first year; the current second-years have never seen the society in all its glory. They have never had the typical pub week with a pub night, a social night and a party night. Yes, we think that's a pity.' There must be a chance to catch up

'Night life usually involves alcohol and you have to learn to handle that'



Each student society has its own mores. Because of the coronavirus crisis, new members haven't had a chance to pick up the mores, so students societies are emphasizing them now. How do you behave in a group, and how do you handle alcohol? That sort of thing. Illustration Death Valley Design

this year on the main first-year activities that couldn't be run last year, says Penders. 'The party weekend or the parents day, for example. We also want to make sure the different years integrate well, through things like an integration party or dinner for second- and fourth-years. Our ultimate goal is for the previous cohorts to experience and do everything that usually goes on here.'

Night life experience

There are other issues at stake besides the continuity of the pub culture. New first-years got very little experience of night life before they joined the society. 'At home I went to the pub occasionally, but the new first-years couldn't do that, of course, because of the pandemic,' explains Dankloff. 'Night life usually involves alcohol, and you have to learn

to handle that. We want to prevent excessive behaviour and make sure people feel safe at Franciscus.'

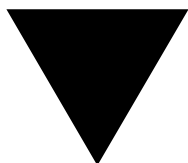
At Ceres, too, the lack of night life experience is being taken seriously,' says Penders. 'New members haven't really been able to go out yet, whereas now they are coming into a setting where people tend to drink a lot. We are being careful about who we serve alcohol to. If you are too drunk, you don't get any more alcohol.' And since last year, draft alcohol-free beer has been available. 'We are really promoting that.'

After 18 months in which people were desperate for rules to be eased, Penders is deliberately keeping expectations low. But he does hope that all the members

MORES

Every student society has its mores – rules and understandings about behaviour that vary from one society to another. It is often forbidden to stand with your back to the bar, for example, or to be on your mobile phone in company, or to make out in the clubhouse. There are punishments for breaking such rules.

will get to experience the bar in all its glory this year. What did that look like, actually? 'One big chaos,' says Penders. 'Everyone milling around and chatting, something funny going on all the time, people yelling. You can't describe it, really – you've got to see it for yourself. I hope that we can really loosen up in a few months' time.' ■



Key people: Harry Stoorvogel

They are indispensable on campus: the cleaners, caretakers, caterers, gardeners, receptionists – the list is long. *Resource* tracks down these key people. This time, meet Harry Stoorvogel (62), who provides technical support at Wageningen Bioveterinary Research in Lelystad.

Text Milou van der Horst • Photo Guy Ackermans

'I trained in mechanical engineering at a vocational training college. After that I worked for an installation company in Zodiac for nine years. Then came the energy crisis and there was less work, so I was seconded to WUR's Central Veterinary Institute in Lelystad. I've been there for 35 years now, in the steam technology department of the mechanical engineering group. I do maintenance and the follow-up on breakdowns, and I manage installations like the sterilizers and the wastewater treatment. I work between the contaminated part of the institute with the lab animals, and the uncontaminated part. That means I have

to shower several times a day. I used to think that was a bother, as it easily takes up a couple of hours a day, but it's all part of a day's work to me now. I also spend a lot of time on protocols and quality requirements, which means working at the computer a lot. As a result, I feel I don't make as much progress as I would like with my work on the installations. Nowadays, lab animals have to have natural flooring, with sawdust and straw rather than concrete or rubber. As a result, the wastewater system gets blocked, because it can't cope with so much solid matter. Luckily, the system has never overflowed, but it has sometimes been touch and go. As a precaution, the solid matter now gets sterilized with the dead animals in the destruction tank.

I sometimes find it upsetting to work with lab animals, especially if I have to be in a corridor just when the animals are euthanized. Then I'd rather wait an hour. But I remind myself it is for the greater good.

I've been a corporate first aider for 20 years too. The worst thing I witnessed was a lad who cut his throat with a grinder, and I could see the muscle. I was amazed that I kept my cool, applied a pressure bandage and called 112. I'm supposed to work until I'm 67, but because of my hereditary kidney disease, I need a lighter workload. I still work six hours a day now. Once I turn 65, I'll have had enough.

If I could have my career over again, I'd be a woodworker – the technology for that has always appealed to me.'

'I have to shower several times a day'





Campus ♦ residents

Time-Travelling Milkman

Time-travelling Milkman extracts fat ingredients from sunflower seeds and aims to supply these ingredients to producers of plant-based cream cheese and cottage cheese to boost their creaminess and nutritional value. Last year the startup received funding from the Dutch Research Council NWO to improve the production process. This summer Oost NL and Shift Invest together invested 550,000 euros to scale up the production of plant-based fats. 'Last year, we were still doing lab work, mainly,' explains product developer Saskia Tersteeg of Time-travelling Milkman. 'In the past year we have built a customer base and developed products together with those customers. Now we are about to start producing on an industrial scale.'

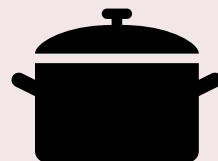
'We are about to start producing on an industrial scale'

Time-travelling Milkman has two end products: a powder and a cream made from sunflower seeds. The production process for the two end products is different. The start-up is collaborating with contract manufacturers to achieve faster market entry but dreams of having its own factory in a few years.

Tersteeg studied Food Technology at WUR, founder Dimitris Karefyllakis got his PhD in the Food Process Engineering group and co-founder Costas Nikiforidis is a researcher at the Biobased Chemistry and Technology group, alongside his role as an advisor to Time-travelling Milkman. Tersteeg: 'We were able to use the Food Process Engineering lab for a long time, but this month we are moving from Plus Ultra II to the agribusiness park in Wageningen, where we will have our own lab.' As

There are about 100 companies on the campus. We introduce them to you in *Resource*. This time: Time-travelling Milkman.

All the flavours of the world can be found in the WUR community. Nargess Sarmadfar (36), MSc student of Plant Breeding, shares a dish from Iran that has special significance.



Flavours of WUR

Halva

'Halva is a special dish. Every anniversary of the death of a loved one, we prepare this dish and share it with our family, friends and neighbours. It serves as a reminder of the people we have lost. You can eat halva for dessert as a pastry, or with tea or coffee.'

- 1 Put the flour in a pan over a low heat and stir until it turns light brown.
- 2 At the same time, melt the butter in a bain-marie.
- 3 Add the melted butter to the flour and stir it until the mixture turns into a smooth paste. Continue stirring until the paste turns golden.
- 4 Boil the water with the sugar in another pan to dissolve the sugar.
- 5 Add the rose water and saffron to the sugar water and remove it from the heat.
- 6 Add this solution to the paste and slowly whisk them together over a low heat until the paste is golden brown.
- 7 Remove it from the heat. Put it on a plate and let it cool.
- 8 Enjoy!

Ingredients

- 1 cup of wheat flour
- 1/2 cup of sugar
- 2 cups of water
- 3/4 cup of butter
- 4 tbsp of rose water
- 1 tbsp of saffron



Nargess Sarmadfar
An MSc student of Plant Breeding from Iran

Which dish reminds you of home? Share it with *Resource* so that we can all enjoy it! resource@wur.nl

THE KEY MOMENT

Digitalization

'I was born and bred in Wageningen and I stuck around for my career too. That started in 1975 in the graphic design room at the Biotechnion on the Dreijen campus. I drew illustrations there for academic publications and theses, and I was jointly responsible for the technical drawings for big machinery in the Biotechnion. We still drew those by hand in those days. When researchers made changes to their apparatus, it was my job to update the drawing too. Later on, I also worked with researchers and combined the graphics work with making the apparatus itself in the workplace. Scientists would bring us an assignment, we would brainstorm about it and make the technical drawings and the apparatus itself. Then everything changed in the 1990s. Computers became widely available and found their way into the university. A lot of my work disappeared due to digitalization. We no longer had to draw everything by hand, and researchers became more

Turning points: sometimes you recognize them at once, and sometimes only in retrospect. In the series *The Moment*, WUR folk talk about a moment they'll never forget. This time, Gert Buurman, who has been at WUR for nearly 50 years. His career took a whole new direction thanks to digitalization.

tech-savvy every year. My skills were soon replaced by digital drawing programs. When that part of my work was taken away, I felt stress levels go up; I knew my career in technical drawing was coming to an end.

After various reshuffles, periods at home and job applications, I ended up back at WUR after all. I've been working there for 12 years now, facilitating practicals. My colleagues and I provide the materials

and apparatus for student practicals and repair them when necessary. As an example, I was recently handed

'My skill was soon replaced by digital drawing programs'

a microscope that had got completely stuck. It's not the best job I ever had, but I now get a lot of satisfaction out of my hobby: making and selling historical clothing and shoes. My wife and I do that together. I'll be retiring in 18 months and then I can spend more time and energy on our business. That is something to look forward to.' NVTWH



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Resource is the independent medium for students and staff at Wageningen University & Research. *Resource* reports and interprets the news and gives the context. New articles are posted daily on resource-online.nl. The magazine is published every fortnight on Thursday.

Contact Questions and comments for the editors: resource@wur.nl | www.resource-online.nl

Editorial staff Willem Andr  e (editor-in-chief), Helene Seevinck (managing editor), Roelof Kleis (editor), Tessa Louwerens (editor), Albert Sikkema (editor), Luuk Zegers (editor), Nicole van 't Wout Hofland (freelance editor), Coretta Jongeling (online coordinator), Thea Kuijpers (secretariat).

Translations Clare McGregor, Meira van der Spa, Clare Wilkinson

Design Alfred Heikamp, Larissa Mulder

Overall design Marinka Reuten

Printing Tuijtel, Hardinxveld-Giessendam

Subscription A subscription to the magazine for one academic year costs 59 euros (135 euros if abroad). Cancellations before 1 August.

ISSN 1389-7756

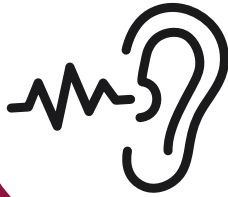
Publisher Wageningen University & Research,
Corporate Communications & Marketing





'After a year and a half of online education, I have got used to peace and quiet when studying and working on assignments. Now that lectures and practicals are back on campus, I find it **difficult to concentrate** in a crowded room. Does anyone have tips on how to cope with this transition?'

A., Bachelor's student of Biotechnology
(name known to the editors)



Mindfulness

'Be aware that you are not the only one finding this transition hard. Other students and even teachers are having to get used to it all again. No one expects you to pick up where you left off straightaway – except you yourself, perhaps. Give yourself time and be gentle and kind to yourself. Take some time every day to stay grounded and in touch with yourself, through a mindfulness exercise for example. And if that doesn't work, just breathe in and out. It's enough to try. You will notice that you will gradually get used to the new situation again.'

The student psychotherapist team

One task

'Don't work for too long on one task, but switch tasks as soon as you find yourself getting distracted. Make room for relaxation in between these tasks. Take a walk across the campus, for instance, peel and eat an orange, or listen to some music. Whatever happens, avoid doing several things at once. So don't check your emails during a lecture, and don't be distracted by WhatsApp messages during practicals and assignments. I hope that this way you can slowly build up your concentration again.'

Piety Runhaar, associate professor of Education and Learning Sciences

Train

'With personal challenges like this, always get in touch with your teachers, so they are aware of the situation. Meanwhile, there are things you can do yourself to increase your concentration. It is a kind of stamina that you can increase with practice. When you are studying at home, create a kind of "restaurant ambiance" using YouTube. And go and see the lecture theatre or lab in advance to familiarize yourself with it. For seminars or computer practicals, noise-cancelling earphones with a music filter (the same as is used for concerts) could be a solution. They cancel ambient sound, but you can still follow the conversation in a group.'

Tim Hoogstad, Farm Technology lecturer

Headphones

'I would advise you to invest in noise cancelling headphones. Since I bought my own pair, I never study without them anymore. Coupled with some music you can easily mute your surroundings. Personally, I prefer listening to movie soundtracks as they are mostly instrumental. As a bonus, headphones send a message to your fellow students that you would rather not be disturbed.'

Paul Mol, Master's student of Food Quality Management

NEXT WURRY

'Someone I work with a lot is very friendly and likes to make jokes. I find many of those jokes sexist and they make me feel awkward. But my co-workers laugh at the jokes and don't seem to have a problem with them. I don't want to come across as a moaner or someone without a sense of humour so I don't say anything. But that leaves me feeling uncomfortable. What should I do?'

S., WUR employee who wishes to remain anonymous
(name known to the editors)

Do you have advice or tips for this WURrier? Or could you use some good advice yourself? **Email your tips or your question (100 words max) by 5 October to resource@wur.nl, subject noWURries.**