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RESOURCE [EN]

For everyone at Wageningen University & Research

no 13 – 22 February 2018 – 12th Volume




Living it up in a uni flat

‘On Friday mornings the floor was covered in muck’ | **p.12**

**INTERNATIONAL
EDITION**



BANANA ART

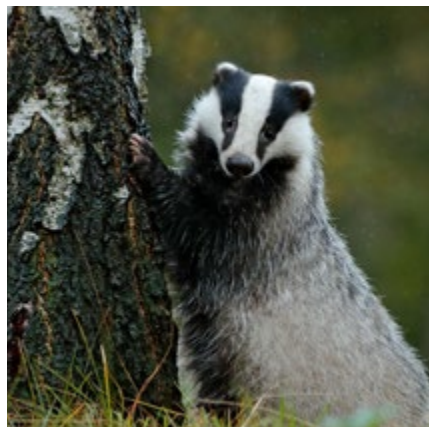
Panama disease is a major global threat to banana production. WUR has been doing research on this problem for years, but outside academia most people are blissfully unaware of it. Researcher Fernando García-Bastidas seeks to change that and he is using a surprising medium: banana art. Stephan Brusche, who goes by the name iSteef, discovered a few years ago that you could draw nicely on bananas. His photos will be on display in Impulse until 22 March.  KvZ, photo iSteef

Watch the video
on resource-online.nl



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PASSING THE BUCK

Students have every reason to complain. They lost the basic grant but the government promised they would get better education in return. The saving of 900 million euros would be spent on more teachers. The universities were supposed to have invested 600 million in education in recent years, as agreed with the government. Now students feel they were sold down the river, and the national audit office agrees. For universities have only actually invested an extra 280 million in teachers. The rest of the ‘extra education money’ can’t be traced. The Dutch parliament calls it a scandal. Now, an analysis by the 4TU Federation (see p. 6) shows what has happened to the education money at the technical universities. They can’t take on any extra teachers because direct government funding for research has fallen in recent years. The government is making more money available for teaching but less for research, so the funding for education is being spent on research. Meanwhile, everyone is busy presenting the figures in ways that suggest that their own organization is blameless and the problem lies elsewhere. That’s called passing the buck. High time for students to treat the Education minister to some old-fashioned protests.

Albert Sikkema



>> [The turbo tree of the future is growing in Zeewolde | p.7](#)

NEW MASTER'S: BIOBASED SCIENCES

WUR wants to start a new Master's degree in Biobased Sciences in September. The idea is that it will be a multidisciplinary programme focussing on knowledge of the production and processing of biomass and the introduction of a circular-economy model. However, the Accreditation Organisation of the Netherlands and Flanders (NVAO) has yet to give its final verdict.

A delegation from the NVAO came to campus on Friday 16 February to assess the new Master's. The committee was positive but also made a caveat. Sonja Isken, the intended programme director: 'The members want to know how we will test

the interdisciplinary modules. They want to see an example exam, but modules such as the Circular Economy and Principles in Biobased Economy don't even exist yet. We've developed course materials but no exams so far. So now we need to work on that.'

The intention is that the new Master's will prepare students to work on a future in which we are less dependent on fossil raw materials, says Isken. 'Our entire economy is based on petroleum; our energy, our materials, plastics, pharmaceuticals. We want to make the transition to different forms of biomass as the foundation for our economy. Think of maize, the stalks from maize and soya or seaweed and algae.'

There is a lot of knowledge in Wageningen about the different kinds of biomass and how to process them. All that knowledge is now being bundled together in the new Master's. The Master's students will learn how to develop the different kinds of biomass, in other words the primary production. Then the course will deal with conversion of the biomass into useful products. A third topic is the circular economy using biomass as the raw materials.

The Master's is suitable for Bachelor's students with a science background, for example in Plant Sciences, Biotechnology or Biochemistry. 'But economists can also do this Master's because we have three specializa-

tions, one of which is Biobased and Circular Economy,' says Isken.

When asked whether Wageningen might be a bit late with this degree, Isken says the idea arose back in 2006 but the different steps involved in setting up a Master's degree cost time. 'We started with optional modules, with minors, then we introduced those optional courses into the Bachelor's. After that, we looked at how the research was developing and included modules in the various Master's programmes. Once there was enough body to set up an entire degree programme, we submitted an application.'

The NVAO will give its final decision on 22 March. **KvZ**

ROW ABOUT REMOVAL OF LECTURE RESOLVED

The online lecture that was taken offline after a complaint from a property company is available on YouTube again. But emeritus professor of Land Use Planning Arnold van der Valk is going to record his lecture again.

Van der Valk caused a stir on Tuesday by accusing Wageningen University & Research in the media of spineless behaviour. The university had removed an online lecture of his from the internet. In the lecture, the professor had used the case of the Amsterdam care farm De Boterbloem to illustrate how politics, power and money influence spatial planning decisions.

According to property developer SADC, named in the case study, Van der Valk makes inaccurate statements and falsely implies that the care farm has been chased off the site. The company complained to the coordinator of the MOOC (massive online open course) that the online lecture was part of. The coordinator proceeded to remove the lecture, much to Van der Valk's annoyance. 'I blame the culture of fear that often governs large organizations. This person has opted for the line of least resistance, at my expense. That is why I went on the offensive when journalists called.'

WUR spokesperson Simon Vink regrets the instant removal of the lecture. 'That was a mistake. It would have been better to contact Arnold van der Valk first.' Vink does think the lecture



The disputed video in which emeritus professor Arnold van der Valk describes the situation surrounding De Boterbloem care farm.

paints too one-sided a picture of the situation around the care farm. 'There should be more nuance and less black-and-white thinking in that kind of analysis. The teachers responsible for the MOOC also said later that they should have seen that.' Vink sees the situation as an illustration of the difference between lectures in the classroom and online ones. 'In the classroom, the teachers can guide the discussion. Online, everyone can give the content their own twist.'

The coordinator of the MOOC has now talked

to Van der Valk about a new version of the lecture to be recorded soon. Vink: 'It is a question of minor adjustments, which do not affect the main storyline.' According to Van der Valk, all that is needed is a couple of sentences emphasizing that parties in a conflict situation have divergent perceptions of reality. 'I have no problem with such an addition. But I don't take back anything I said, because it is all based on facts.' The adapted version of the online lecture will go online on 6 March. **LvdN**

FIVE NEWCOMERS FOR TEACHER OF THE YEAR

Five teachers are in the running for the Teacher of the Year Award for the first time. They are Hannie van der Honing, Sonja Isken, Fred de Boer, Sander Gussekloo and Pim de Zwart.

Along with 11 others, these five stand a chance of winning the Teacher of the Year Award 2018 at the end of April. The University Fund Wageningen (UFW) published the longlist on Tuesday. Van der Honing teaches in Plant Sciences, De Zwart in Social Sciences. De Boer and Gussekloo are both associate professors,

in Environmental Sciences and Animal Sciences respectively. Sonja Isken is programme director for the Food Microbiology degree programme.

True to tradition, there are plenty of ex-winners and previous nominees on the longlist this year. Apart from the five newcomers, everyone on the list has been nominated at least once before.

The student jury of the Teacher of the Year Award 2018 will announce the five teachers on the shortlist at the beginning of April. **LvdN**

ALL THE NOMINEES

- John Beijer
- Fred de Boer
- Henry van den Brand
- Frits Claassen
- Julia Diederer
- Jessica Duncan
- Maria Forlenza
- Sander Gussekloo
- Hannie van der Honing
- Sonja Isken
- Gert Peek
- Arjen Rinzema
- Ute Sass-Klaassen
- Huub Savelkoul
- Arie Terlouw
- Pim de Zwart

© COLUMN | GUIDO

Roos Vonk

MP Thierry Baudet and TV weatherman Gerit Hiemstra got into a row about climate change. Baudet challenged Hiemstra to a debate to resolve the matter, but Hiemstra refused, arguing: 'There's always debate in science, but mainstream science is actually quite unanimous when it comes to climate change. However, semi-scientific climate quacks claim the opposite and get a disproportionate amount of attention in the media.'

I have been involved in a lot of debates and have also given debating training to students, and Hiemstra's argument disregards the first rule of debating: your aim is to convince the audience, not the opposing party. That's why I would support this debate. An academic wrangle with scientific arguments would be wonderful. I would watch, at any rate. Whether we call it a peer review or a discussion, a vigorous debate is the only way we have for testing an idea. Now Hiemstra seems worried about defending his ideas, worries that may not be justified.

I'm actually hoping for more of a debate. In a time of fake news, scientists should engage wholeheartedly in discussions. That is how smart people can test their ideas on other smart people. I would find that useful too. The Nijmegen professor and campaigner Roos Vonk once compared intensive livestock farming to the Holocaust and called on vets to do more to serve the interests of animals. As a nutrition scientist and vet, I hereby invite her to a debate: let's test our ideas about intensive livestock farming against one another. Perhaps I'll stop eating meat afterwards. I hope she reads this. **S**

in brief

>> NO WEDAY

Because of centenary

WUR won't be organizing a WeDay in May this year. This sports day for staff has been held for the past 18 years, with around 1750 WUR employees attending in recent years. However, there is no room or money for WeDay this year because of the university's centennial celebrations. There are other activities that staff can attend, such as the opening celebration of 100 years of WUR on 8 March and a festival on 15 September (see p. 16). **AS**

>> ENGINEERS' AWARD



PHOTO: KIVI

WUR man in the race

Wageningen biotechnologist Jan Klok is one of three nominees for the 2018 Prince Friso Engineers' Award. Klok is a guest researcher in the Environmental Technology group and a project manager at water institute Wetsus. He also works for the company Paqell on a method for the desulphurization of gas using biotechnology. A jury will decide who is Engineer of the Year. KIVI, the institute organizing this, will announce the winner on 21 March. There is also an award whose winner is chosen by the general public. Voting is possible up to 18 March at kivi.nl. **RK**

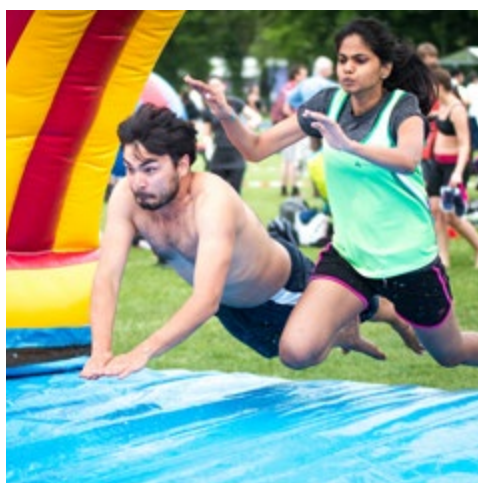


PHOTO: SVEN MENSCHER

>> ADMISSION OF CRISPR More clarity expected

WUR professor Justus Wesseler expects more clarity in the summer about the admission of CRISPR-Cas in the EU. That is because a ruling is expected from the European Court of Justice in June or July on mutagenesis, a mutation in a plant that can occur naturally or artificially. Plant breeders have been stimulating mutations for years, for example using radiation. This technique does not have to satisfy the strict EU rules on genetic modification. But if you do exactly the same with CRISPR-Cas, does that count as genetic modification? The advocate general concluded last month that this is not necessarily the case. If the court agrees, that will have major consequences for research at Wageningen, says Wesseler. **SvG**



Guido Camps (34) is a vet and a postdoc at the Human Nutrition department. He enjoys baking, beekeeping and unusual animals.

RESTAURANT OF THE FUTURE A THING OF THE PAST

The Restaurant of the Future's 10th anniversary went unnoticed last year. Not too surprising, given that this company canteen and research facility for real life nutritional research has not worked out quite as intended. The research that was done there initially has moved elsewhere. The question now is: should the name be changed?

WUR started the Restaurant of the Future in Impulse in 2007. At first glance it was a straightforward university canteen but behind the scenes it harboured an advanced research facility with cameras and measuring equipment for studying people's eating behaviour in a real life setting. Groups of volunteers also took part in taste tests on the first floor of the building. And count-

less foreign delegations got guided tours of this modern research restaurant.

Today the Restaurant of the Future only exists as a research institute on paper. There are still cameras hanging up in the restaurant but no research has been done there, or upstairs, for two years. The research accommodation has been abandoned by the Agrotechnology and Food Sciences Group (AFSG), the owner of the Restaurant of the Future Foundation. The space has been given back to Facilities and Services, reports Tamara van Rozen, acting director of operations at SFSG. The Science Group has moved its consumer research to Helix, where it has opened a new 'experience room'. Facilities and Services is looking



PHOTO: SVEN MENSCHERL

The Restaurant of the Future opened its doors in Impulse in 2007.

for a new tenant for the research accommodation at the old location in Impulse. Only the restaurant itself, run by Sodexo, is still going. Research assignments in and above the restaurant have been dwindling in the past few years, making it a loss-making activity for the AFSG's Wageningen Food & Biobased Research.

So the Restaurant of the Future is no longer being run as a research facility. The name has not changed, however, even though it clearly does not fit the bill anymore. Numerous people are giving thought to a new name for the restaurant and it is believed the Executive Board will make a decision on it this year. **AS**

EXTRA TEACHING CASH NO HELP FOR TUs

The four technical universities in the Netherlands are unable to take on additional teachers to cope with the growth in student numbers. They get more teaching funding but less funding from the government for research, according to an analysis by the 4TU Federation.

Like Wageningen University, the technical universities of Delft, Eindhoven and Twente are also having to cope with growing student numbers. The number of students registered at the four TUs rose from 33,000 in 2005 to 57,000 in 2017, according to figures from the 4TU Federation.

That growth caused income from tuition fees to increase from 70 to 130 million euros over the past ten years. Direct government funding for teaching also increased from about 330 million in 2006 to 370 million in 2015. But that extra cash could not be invested in new teachers as the direct government funding for research fell over the same ten-year period from 650 to 540 million.

The analysis shows clearly why the technical universities were una-

ble to hire new teachers despite the additional funding for education that now they get from The Hague following the abolition of the basic student grant.

Cuts in research led to a fall in the direct government funding per student at the technical universities. In 2006 they received an average of 32,000 euros per student, in 2015 only 21,000 euros. The number of students per teacher — the student-staff ratio — has therefore increased at the TUs.

The 4TU Federation, which represents the interests of the technical universities, thinks the ministry of Education should change the funding model. The technical universities should be given more money per student, concludes the federation. **AS**



PHOTO: GUY ACKERMANS

VEERMAN AND VEERMAN

Kees Veerman (on the right in the photo) graduated with a PhD on 13 February at the age of 77, with a study of the market position and profitability of Dutch greenhouse horticulture. His namesake Cees Veerman (68) was one of his examiners. Kees Veerman is the second oldest Wageningen PhD graduate of all time. He did break another record though. His supervisor was emeritus professor Olaf van Kooten (newly retired) and the other examiners were Vinus Zachariasse (ex-director of LEI), Jozef Tettero (professor at the University of Amsterdam) and ex-minister and ex-WUR director Cees Veerman — all of them long-retired. **AS**

A NURSERY FOR TURBO TREES

In the recently rejuvenated Populetum near the Dutch town of Zeewolde grows what may well be the poplar of the future. The only thing is, Wageningen research still has to pinpoint which one it is.

It is a lovely February day when researcher Paul Copino shows off 'his wood'. The Populetum is not really his of course, but a joint project by Wageningen Environmental Research and the Dutch state forest service *Staatsbosbeheer*. Nor is it a wood yet. More a number of trial plots with spindly, bare tree trunks a couple of metres in height. Here and there between the newly planted poplars, the thick stumps of the felled previous generation stick out of the ground. The old trees had had their day; their trunks have been harvested and used. Job done, and the future is for the new generation. Part of the total of 20 hectares has already been planted with new poplars. The rest will come next year.

The first Populetum was planted in the 1970s. 'One of the aims was to select the best poplar clones of varieties for the newly drained polders,' explains Copini. 'The poplar is a pioneer species that grows fast and makes a lot of biomass. A real turbo tree with which you could create a new woodland microclimate in a relatively short

time, where other trees could flourish too.'

And Wageningen was the source of these poplars, the clones for which came from the extensive plant-breeding programme run by Rob Koster, one of Copini's predecessors. His name lives on in the Koster poplar, a fast-growing variety that is popular both in the Netherlands and abroad. The clones from that programme are still in use.

In the new Populetum, which houses a total of 25 known poplar clones, there is also a trial plot with new clones. These are eight experimental clones from the breeding programme, which have not yet been made available. They are called Canadian poplars and are crosses between the European black poplar (*Populus nigra*) and the American black poplar (*Populus deltoides*). The Koster poplar is a member of this group too.

Copini might have the next 'Koster' in his wood. Factors in the selection, besides growth rate (wood volume), include things like trunk shape (for use for timber) and disease resistance. Research is also being done, in collaboration with the Forest Ecology and Management group and SHR Houtresearch, on the scope for wood modification, to see whether poplar wood has potential for use as building material. **© RK**



Researcher Paul Copino among the young poplars in the Populetum near Zeewolde.



Poplar cuttings piled up ready for planting.

PHOTOS: ROELOF KLEIS

THE HUSBAND

On 9 March 1918, Prince Hendrik attended the opening of the Agricultural College in Wageningen on behalf of the Royal Family. He is standing in front of the flight of steps to the town hall in his long, light-coloured uniform coat surrounded by government officials in top hats and professors in berets and white jabots. His wife should really have been there, but Queen Wilhelmina unfortunately couldn't make it, probably because of the First World War. A pity. At least then there would have been one woman.

As of 9 March, WUR will be celebrating its centenary with numerous activities. The Resource editors have therefore been unearthing unusual photos in the archives.

See also *Highlights from 100 years of WUR* on p. 16, *Looking back* on p.18 and *the story in the 100 years of WUR series* on p. 12.

See the photo series '100 years... of visiting dignitaries' on resource-online.nl



PHOTO: WUR



VACCINATING BADGERS CAN STAMP OUT TB

By vaccinating fewer than half the badgers in the country, tuberculosis can be brought under control in Ireland, shows a study by Inma Aznar. She got her PhD for this research on 9 February.

In the 1950s, TB, a bacterial infection that is dangerous for humans, was a serious problem in Ireland. Through a big programme, the government did its utmost to wipe out the disease among livestock. With initial success, or so it seemed. And yet the disease has managed to survive at low densities until today.

'In the 1960s, people discovered that the badger was spreading the disease,' explains Inma Aznar, a research at the Irish department of agriculture, and a PhD student at WUR. 'Badgers are common all over Ireland,' says Aznar. According to her, they are very prone to infection with the disease. And they survive it, so they can continue to pass it on for a long time, and TB keeps on coming back in Irish livestock. 'If you don't monitor that very strictly, the disease could easily spread to humans as well,' explains her WUR supervisor Mart de Jong.



PHOTO: SHUTTERSTOCK

The Irish government has decided to vaccinate badgers throughout the country in an effort to combat the spread of TB.

So everything possible is being done to control the disease. The main method used to date was culling badgers. Which is undesirable, as they are actually a protected species. And the territory of the culled animals gets taken over by others. Aznar took a different approach, and conducted studies in three areas of Ireland to see whether it could

help to vaccinate badgers. Some of the badgers in these three areas were given an actual vaccine, and a control group received a fake one.

The results seemed disappointing at first. The vaccine did not always work well enough to protect the badger. But at the population level, vaccinating was worthwhile. Using a model study, Aznar found

out that vaccinating 30 to 40 percent of all badgers would suffice to wipe out the disease in the long term.

The Irish government has now decided to roll out the vaccination programme nationwide. If everything goes as predicted, Irish livestock will eventually be entirely TB-free. **SVG**

HUMANS ARE MAIN SOURCE OF ANTIBIOTIC RESISTANCE

The idea that people mostly get infected by antibiotic-resistant bacteria by eating meat is mistaken. A Wageningen study shows that most infections with these bacteria are passed on from person to person. 'But that does not mean we should be less strict about antibiotic use,' says Dick Mevius of Wageningen Bioveterinary Research.

Extended spectrum beta-lactamases (ESBLs) are enzymes that break down certain antibiotics. The bacteria which produce these enzymes are therefore resistant to those particular antibiotics. One bacterium can pass

fragments of DNA on to another, so that the recipient bacterium can manufacture ESBLs too. Mevius and his colleagues studied how this distribution works. The study was implemented in collaboration with Utrecht University, the RIVM, UMC Utrecht and the veterinary health company, GD Animal Health.

Genetic analysis of the enzymes brought important information to light. The ESBLs in the bacteria in sick people are more like those in healthy people than those found in livestock and meat. This means that the main route of infection with ESBL-producing bacteria is person-to-

person, rather than via animals and meat. This is contrary to what is commonly supposed.

Meat does contain ESBL-producing bacteria, but the risk of infection is small as long as meat is well-heated and processed hygienically. Contrary to what was previously believed, the livestock route plays only a minor role. Mevius: 'This is remarkable, especially when you consider that the Netherlands is one of the most densely populated countries, with both humans and animals.'

Five percent of the human population carries ESBL-producing bacteria. Mevius: 'It is important to realize that expo-

sure does not always turn people into carriers, let alone make them ill. Because these are ordinary gut bacteria, which do not normally make people ill. They are only dangerous when resistance is lowered, in the elderly for example, or in people undergoing chemotherapy.'

The production of ESBLs by bacteria is the result of a continuous arms race, says Mevius, between bacteria and the antibiotics that we use to fight them. 'That is why it is still important to use antibiotics in moderation and to focus primarily on health management and the prevention of infection.' **TL**

'WEAK' FUNGI INHIBIT PATHOGENS

The fungus *Zymoseptoria tritici*, which causes leaf blotch disease in cereals, is less damaging than was assumed until now. 'Weak' strains of fungus inhibit strong fungal strains, thereby limiting outbreaks of the disease, say Wageningen researchers.

Until now, plant scientists thought that the harmful strains of fungus that affect wheat plants reproduced fast at the expense of the 'weak' fungus strains that don't affect the plant, which is how plagues can develop. But the research group of phytopathologist Gert Kema has now discovered that the 'weak' fungi can also reproduce. As a result the harmful fungi do not gain the upper hand and the wheat plant can withstand the pathogen for longer, as they announced this week in *Nature Genetics*.

Their findings mean that the course books on plant science will have to be rewritten as they assume that *Zymoseptoria tritici* soon puts an end to the wheat plant's resistance. Now it turns out that fungal strains that do not cause disease in the plant can also reproduce in resistant wheat plants. In doing so, they prevent the harmful fungus

strains from reproducing fast. The research ties in with earlier observations that the increase in virulent fungal strains is slower in practice than should be the case according to the course books.

The Wageningen group discovered the secret sex life of the *Septoria* fungi that explains why the weak strains of fungus survive. The harmless fungal spores are able to make male sex cells. Those male sex cells fertilize the female sex cells of the harmful fungal strains, and consequently the offspring belong to both the strong fungal strains and the weak ones. The phytopathologists demonstrated that as a result, the weak fungi remain in the fungal population for a long time.

Based on this observation, they developed a mathematical model that describes this long-term resistance in agricultural systems. This model also explains observations in natural ecosystems that had previously been inexplicable. The researchers believe they have detected a widely operating phenomenon that probably also applies to many other fungi that cause plant diseases. **AS**



Leaf blotch disease on wheat.

VISION

'There are still new antibiotics to discover'

American researchers have discovered a new class of antibiotics encoded in the DNA of the soil microbiome. These malacidines could potentially be used to treat multi-drug-resistant bacteria such as MRSA. The study, published in *Nature Microbiology*, shows that there are still potential new antibiotics to be discovered in nature, says Jerry Wells, professor of Host-Microbe Interactions.



What makes this finding so remarkable?

'Most antibiotics were discovered in the 1950s when soil bacteria were found to be a rich source of natural products with antibacterial activity. But in the last 30 years only a few new classes have entered the market. Many organisms only produce antibiotics under specific conditions, in competition with other organisms for example, and not in laboratory cultures. This makes it impossible to test their antibiotic potential. In this study the researchers found a new class of antibiotics without having to culture the bacteria that naturally produce them. They did this by extracting DNA from these bacteria, and then using other easily cultured micro-organisms as factories to produce the antibiotics.'

What makes this new antibiotic promising?

'Malacidine was used in this study to treat surgical wounds infected with multi-resistant bacteria in rats. In humans, these kinds of wound infections are hard to treat in hospital. It is not yet known if these drugs will be safe and effective in humans but there is clear potential. That is very good news, even though the malacidines were not effective against gram-negative bacteria, for which we urgently need new treatments for multi-drug-resistant strains.'

Should we revisit nature in the search for new antibiotics?

'This study shows that there are still potential new antibiotics to be discovered in nature. Many of the antibiotics discovered in the past came from organisms such as bacteria and fungi in the soil. Natural antibiotics are difficult and very costly to produce synthetically, due to their chemical complexity.' **TL**

FAECAL PARASITE CALLS FOR BETTER PURIFICATION

The more people are connected to sewage systems worldwide, the greater the risk they run of contracting diseases from their drinking water. Unless, that is, there is a drastic improvement in water purification systems. This is the conclusion drawn by PhD candidate Lucie Vermeulen, who graduated with distinction on 16 February for her research on the presence of *Cryptosporidium* in rivers globally.

This single-cell parasite in faeces is a major cause of diarrhoea. The pathogen is spread via surface water, among other routes. But little is known about how many parasites there are in the water and how big a risk there is of infection via rivers. In an effort to close those gaps in current knowledge, Vermeulen developed a model that maps the distribution of pathogens such as *Cryptosporidium*. The map shows polymakers where the problem is most urgent. This is the first model of a pathogen on a global scale.

The model calculates how many pathogens end up in rivers, using data on population density, connection to sewerage systems, incidence of disease and the efficiency of the water purification system. In most parts of the world, it turns out there are so many *Cryptosporidium* parasites in the rivers that everyone would fall ill every year if people drank that water on a daily basis. Luckily, most people do not have to re-



One of the ways the pathogenic parasite *Cryptosporidium* spreads is via river water.

sort to drinking surface water. Two percent of the global population do so, about 160 million people. But in countries such as Papua New Guinea, Angola or Kenya, we can easily be talking about one quarter of the population.

Vermeulen calculated future scenarios as well. These showed that the efficiency of water purification systems is crucial for the quality of the river water. At present, about 60 percent of the world's population are connected to sewer-

age. From the hygiene point of view, that proportion should be increased. But doing that will also increase the number of parasites that eventually end up in surface water. 'The more households you connect to the sewers, the poorer the water quality,' is how Vermeulen sums up the situation. But she is not arguing against more households being connected to sewerage systems. 'As long as it goes together with improved purification.' **IK RK**

POWER ATHLETES DO NOT NEED EXTRA PASTA

Power athletes often eat high-carbohydrate food such as pasta or bread before they train. Wageningen research shows, however, that this makes no difference to how muscles respond to a training.

Athletes pay attention to their diets in order to get the most out of their training. 'We know for example that endurance sportspeople can improve performance in the long term by occasionally eating a low-carbohydrate meal before training', says Marco Mensink of Human Nutrition. Their muscles then respond better to the training, and recover faster. 'Little is known, however, about the influence of carbohydrates during strength training.'

Wageningen PhD candidate Pim Knuijman and colleagues from Radboud University Medical Centre in Nijmegen and Papendal sports centre studied the role of carbohydrate intake among power athletes. The test subjects, 13

sporty men in their twenties, went through a strength training programme on two separate days. They had to start in the morning with one and a half hours of cycling. Then they had a meal and in the afternoon they did their strength training. The meal they ate before the first strength training was high in carbohydrate and low in fat. Before the second training, 12 days later, their meal was the other way around: low in carbohydrate and high in fat. In terms of calories and protein levels, the meals were the same.

The researchers took a small sample of muscle tissue before and after the training, to determine how the muscles had adapted to training. They found no difference between the state of the muscles after high-carbohydrate and low-carbohydrate meals. Mensink: 'So the idea that you need to consume plenty of carbohydrate before intensive strength training is wrong. This supports the idea that protein intake is the most important thing for strength training.' **IK TL**



Eating extra carbohydrate before strength training turns out to have no effect on muscles.

Not everything our *Resource* journalists write gets into the magazine. Below is a sample of other things you can read about on resource-online.nl.

CHINA GETS MILK



PHOTO: SHUTTERSTOCK

In the next 30 years, the people of China are expected to start drinking three times as much milk as they do now. That has implications for the environment and for land use both in China and elsewhere. Only modern and efficient Chinese dairy farming can limit the climate impact, shows research by an international team including WUR researcher Gerard Velthof.

SMART GREENHOUSE IN SAUDI ARABIA



PHOTO: SHUTTERSTOCK

In the cultivation of greenhouse tomatoes in Saudi Arabia, water savings of more than 95 percent are possible, show the first experiments at the new research station for greenhouse horticulture in Riyadh, which was set up by WUR. The researchers are testing three types of greenhouse for the production of tomatoes. They are com-

paring the low-tech greenhouse consisting of plastic tunnels, which is widely used in Saudi Arabia, with more advanced types of greenhouse. Not only does the high-tech greenhouse save a lot on water, but production per square metre is higher in it too.

TAIL RESEARCH

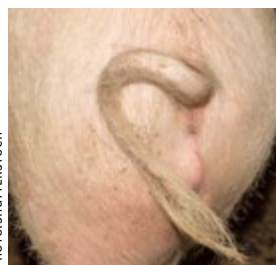


PHOTO: SHUTTERSTOCK

Wageningen Livestock Research is going to work with vets, livestock breeding experts and livestock feed companies in professional net-


works to figure out how pig farmers can stop docking pigs' tails. Routine docking of pigs' tails to prevent tail biting is banned in the EU but farmers can obtain an exemption if other measures they have tried have failed. In non-organic pig-farming, getting exempted is pretty much standard practice, so tails are still being docked in spite of the ban. The new study aims to come up with effective ways of combatting tail biting so that farmers really can stop docking tails.


MEANWHILE ONLINE

NEW CODE OF CONDUCT



PHOTO: SHUTTERSTOCK

From plagiarism to anonymous complaints: the national code of conduct for scientists is in for an update on all fronts. And all scientists can contribute their ideas. Until the beginning of March they can read the draft version on vsnu.nl and add their own comments and suggestions. The old code of conduct dates from 2004. After a thorough evaluation, an entirely new version is now on the table. 

tribute their ideas. Until the beginning of March they can read the draft version on vsnu.nl and add their own comments and suggestions. The old code of conduct dates from 2004. After a thorough evaluation, an entirely new version is now on the table. 

Check them all out at resource-online.nl

PROPOSITION

'Data are like separate notes on a sheet of paper'


Lucie Vermeulen read through her thesis one more time last week just to be sure. She did not want to be surprised by a question on the big day and stand there lost for words. In between, she reflected on her seventh proposition, which refers to her great passion.

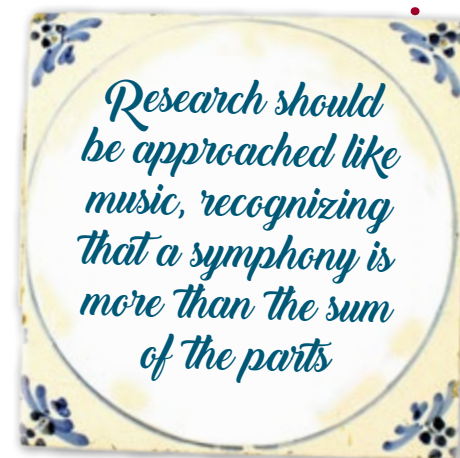
'*Cryptosporidium* is a parasite that lives in the excrement of humans and animals and is found in rivers around the world. Unfortunately I didn't get to travel for my research; I turned the existing datasets into a model that can predict the spread of the parasite and thus say something about water quality now and in the future.

Over the past four years I've spent a lot of time working on my own. Doing research is fun but music has been important to me all my life. I

spent five years in the student orchestra De Ontzetting. That is actually the nicest thing I've done in Wageningen. I played the trumpet and

was even the chair for a year. Now I sing in La Bomba, a group of women vocalists. We knew one another through De Ontzetting and the orchestra's logo is a bomb, hence the new group's name.

When you play music in a group, everyone knows their part but that doesn't necessarily make it cohesive. You have the combined sound, the harmony, the intonation and role of the notes in the piece. All those elements together turn the notes into music. Doing science works in the same way. You come up with a research design and collect data and measurements. But you still don't have anything. Your data are like a score, separate notes on a sheet of paper. It's only when you start to uncover relationships in the jumble of data that the whole becomes more than the sum of the parts.'  KvZ



Lucie Vermeulen obtained her PhD on 16 February 2018 for research on the spread of the parasite *Cryptosporidium* in rivers around the world (see p.10).

Life in student flats through the eyes of a former caretaker

‘Everyone stoned or dead drunk’



In 1969, a student could rent a room in the brand-new Asserpark for less than 60 guilders (30 euros) a month. The emergence of the star-shaped blocks of flats had a decisive influence on student culture in Wageningen. Former caretaker Martin Ruijs can tell you all about it after 40 years in the job. ‘They used to throw all kinds of stuff out of the window. Tables, chairs, TVs. Even a car tyre once.’

text Linda van der Nat photos Guy Ackermans, archive Martijn Ruijs and Idealis

‘It’s so clean,’ notes Martin Ruijs in surprise as he walks into Annie’s Kroeg. The cafe belongs to Asserpark, the star-shaped block of flats that was the home for many years of the caretaker for student accommodation provider SSH-Wageningen (now Idealis). ‘Is it always this clean here or did you tidy up for me?’ he asks one of the students on the bar committee. They laugh – it is always this clean. Ruijs: ‘I have seen a layer of muck that thick’ — thumb and index finger ten centimetres apart — ‘on the floor on a Friday morning. Beer, glass, beer mats. Quite disgusting.’

It has been a while since Ruijs was at Asserpark; he retired more than eight years ago after having been a caretaker for nearly 40 years. He spent the first while at Nobelweg, where Wageningen’s first block of student flats was erected in 1959. Three years later, he moved to Asserpark.

FIRST STAR-SHAPED FLATS

The number of students at Wageningen had shot up in the preceding years. At the same time, private individuals were becoming less

keen on renting out rooms. So measures had to be taken. The mayor at the time decided to build star-shaped blocks of flats for students like the star-shaped flats for families in the west of Wageningen. Asserpark was the first in 1969. It was followed by Hoevestein, Bornsesteeg, Dijkstraaf and Rijnsteeg. The last of these has since been demolished and replaced by Rijnveste. Asserpark has 17 stories. It initially had 387 rooms, with an average of 12m² each, spread over 48 corridors. Each corridor had eight rooms, a communal kitchen, shower and washing area. There was a launderette and supermarket on the ground floor. The very first tenants paid 59.50 guilders (about 27 euros) in rent and 30.50 guilders (about 14 euros) in service charges per month.

Ruijs started work there as a maintenance employee. He was not much older than the students. ‘I came from a different background and wasn’t used to student life. It was the hippie era, of course, and Asserpark was too bourgeois for the students. For example, the kitchens had a big steel bar table with bar stools, which they hated. They wanted to get rid of it and have cushions on the floor. It was only later that I



▲ Martin Ruijs in front of Asserpark in 1983.

1958

Student complex on Nobelweg opens

1969

Asserpark star-shaped flats open, Martin Ruijs becomes caretaker for SSH-Wageningen in Nobelweg complex

1970

Hoevestein star-shaped flats open

realized what that weird smell was in all the corridors.'

GIRLS SEGREGATED

In the first few years, the five top storeys were reserved for girls. Ruijs: 'The ladies were on storeys 12 through to 16, and going up from 11 to 12 was like entering a different world. The ladies really were much better. It might sound stigmatizing but women are more used to taking care of things from a young age than men. Men are just that bit more boorish in how they treat things.'

The segregation of the sexes in the star-shaped flats ended in 1970. From that time on, corridors could be 'mixed'. This idea did not take off immediately and there were still 18 single-sex corridors in 1976. Ruijs: 'A lot of governors and parents didn't like the idea. They said flatly: we don't want this. Of course it was a different era, more protective. There was a lot of discussion about this internally. But the students themselves wanted it.' It was a strange setup initially, says Ruijs. 'In the first few years you mainly saw couples who'd move in together. Then a woman who was dating a male student would say: come and live with me because that's allowed now. So at first you had really skew distributions with women and the occasional man, or the other way round.'

DEAD DRUNK

Ruijs and his family lived in a corner house at the foot of the block of flats. That sometimes meant he was called out in the middle of the night. 'Before the flats had a cafe, there would be a party on one or more of the corridors every week. The place would get a complete make-over. All the mattresses in front of the windows, a serious sound system and a bar in the corner.'

WHY THAT STAR SHAPE?

The star-shaped flats with their distinctive form have been part of Wageningen's silhouette for years. This shape was chosen because the municipality wanted a slim-look building. The contractor was also able to save a lot on construction costs and hours because of the 'rigid core'. People, gas, water and electricity were all transported via the heart of the building.

Local residents would then be knocking on my door in the middle of the night because it was going on and on. There've been times when I turned up at the corridor and no one was capable of communication anymore. Everyone stoned or dead drunk. So I'd pull the plug on the sound system, close all the windows and doors and come back the next day for a proper chat.'

This illustrates the understanding Ruijs developed over the years with the tenants. 'I never wanted to play the police officer. You can chase after everything like a bull in a china shop but you need to keep things liveable. Compromising, a bit of give and take, talking to people, appealing to their sense of reason.' But there were two areas where Ruijs always took students to task: cleaning and theft. 'Dirty pans were their own business. But a layer of dirt in the shower or toilet was just not on, of course. You can't have the bathrooms making people sick.'

Students who brought traffic signs back to their corridor could also count on a reprimand from Ruijs. 'Traffic barricades with flashing lights, For Sale signs with the pole still attached - incredible what they'd bring back. I would collect up all the signs, then call the municipality and tell them they could come and get another batch. I never just left them — those things are really expensive. Sometimes I had 1000 euros worth of signs.'

SUPER LADY

Asserpark was renovated in 1988. The communal kitchens were modernized, the corridors got more showers and the supermarket and laundrette went. The flats also got their own cafe, Annie's Kroeg. That solved a lot of problems, says Ruijs. 'It pretty much meant an end to the noise nuisance.' The pub was named after the cleaner Annie van Brakel, who kept the stairwell and office clean. 'A super lady,' says Ruijs. 'She was really a mother to those lads and lasses. She knew everyone, heard all the news, got called on for all sorts of stuff.' He stands up and goes over to the bar. 'There always used to be a photo here above the door to the pantry. Let's see, yes, there she is. A really nice person.'

Ruijs was no longer living in the caretaker's house by then. In 1985, he and his family moved to Rhenen. 'It was time to move on. The downside to that house is that you always have a third



▲ Asserpark just after it was completed in 1969.



▲ A kitchen in Asserpark, late 70s.



▲ One of the many corridor cats.



▲ Asserpark occupants in the late 70s making lampshades from gin bottles.

1972

Martin Ruijs becomes caretaker at Asserpark

1973

Bornsesteeg star-shaped flats open

1977

Dijkgraaf star-shaped flats and Droevendaalsesteeg open

1978

Rijnsteeg star-shaped flats open



▲ An Asserpark student in his room.

of the tenants looking down on you. A student would say: Wow, Mr Ruijs, have you washed your car again? You could never sit outside either. We didn't have much sun and it was really windy around the flats.' Ruijs also regularly had to go out to the garden and clear various household objects off the lawn. 'They used to throw all kinds of stuff out of the window. Tables, chairs, TVs, lids, forks, knives. Even a car tyre once. I've also had to scrape cats off the roof that had fallen off a balcony.'

COULDN'T GIVE A SHIT

Asserpark always remained Ruijs' base. 'I had my office here, my cubbyhole. I spent twenty years working at Droevendaal too. That was completely different. Not my thing at all. Permissive, no restrictions. They were growing pot and smoking it on a massive scale. It was completely anarchic there, they couldn't give a shit — excuse my language. I take good care of my things but there they would break everything up in no time. You really had a different class of people here in Asserpark.'

Not that he didn't experience some tumultuous years in the star-shaped flats. For example, Ruijs recalls a to-do with 'the bikers on 8b'. 'They would take those ancient things leaking oil upstairs in the lift and then tinker with them in their rooms. Sometimes the place would be blue with smoke. It was a huge mess and they never did any cleaning. But if I took them to task about this, the message didn't really get through.' The arguments ended in a squatting campaign in 1978. 'At the time, we were unfortunate in that there were a lot of vacancies. I believe we had about 100 empty rooms in the block of flats. They were all occupied by squatters with the help of the tenants on 8b. A very regrettable situation. When I was personally threatened at one point, I said to our director: if you lot don't do something about it, I'm going to throw in the towel.'

TEARS

He didn't 'shed any tears' when he retired, says Ruijs: 'I'm too realistic for that; you have to go in the end. But I did like covering for a sick colleague now and then. I worked at Bornsesteeg for a while, for instance. That's different again because of all the international students. I loved that, dealing with students in all

'DISINTEGRATION OF THE STUDENT COMMUNITY'

In the 1950s, resistance arose in student circles to the introduction of 'mass student housing'. The fraternities were particularly afraid that student society life would be snuffed out if students got accommodation with kitchens. At that time, most students rented a room from a landlady and ate their meals in the student society canteen. As early as 1955, Ceres was protesting against the 'rabbit hutches' that were planned for Nobelweg. In a letter sent to the university's directors, they predicted 'complete disintegration' of Wageningen's student community.



▲ Nobelweg was Wageningen's first block of student flats in 1958.



▲ Droevendaalsesteeg in the late 70s.



▲ Caretaker Ruijs's maintenance room in Asserpark.

1988

Asserpark renovated, Annie's Kroeg opens

shapes and sizes. The stuff they leave behind when they return home, vast amounts. Shoes, pots, pans, bedding, rice cookers. I've got a nice green Chinese poncho in my bike bag that I still use a lot.'

The stories keep on coming. For example the fear that would grip Ruijs and his wife on fine summer days. 'Students would stretch the springs of their mattress between the window and the edge of the balcony and put their mattress on top to sunbathe. Not just on the first floor, further up too.'

LIKE NORMAL PEOPLE

Ruijs takes another look round the neat and tidy cafe. 'I've worked behind the bar myself. Thurs-

'WHEN I WENT TO WORK FRIDAY MORNING, THE LIGHT WOULD STILL BE ON IN THE CAFE'

day evening is pub evening, right, and they'd sometimes ask me whether I wanted to spend an evening serving beer. It would always be packed because they would have hung up posters: The caretaker will be serving the beers tonight. Lots of fun but you were very busy. When it got to about one o'clock, I'd say: You carry on lads, but I'm calling it a day. And when I went to work Friday morning, I'd see the light still on.'

Ruijs has seen the students change in his 40 years as caretaker. 'In the early years you sometimes had eternal students aged 35 or more who were being subsidized by their parents. They mainly did the fun stuff and a little bit of studying.' That changed after the Bachelor's and Master's phases were introduced. 'There was much more pressure on students to finish their degree quickly. They became more serious, spent more time on their studies and started earning money with part-time jobs. Not that they all became paragons of virtue. They just became more like normal people.' 🗣️



▲ An aerial photo of Wageningen from around 1977. Asserpark in the foreground, then Hoevestein, Bornsesteeg, Dijkgraaf and Rijnsteeg (still being built).



▲ An employee from Woudenberg wine shop delivering beer to Asserpark in 1995.



▲ Rijnsteeg occupants watch a football match in 1994.



▲ Martin Ruijs in front of Asserpark in 2018.

2006

Rijnsteeg demolished

2009

Martin Ruijs retires

2012

Rijnveste built on site of Rijnsteeg

Highlights of WUR centenary



Laser Show 8 March

Celebrations get off to a flying start on the eve of WUR's actual anniversary. On Thursday 8 March, the Dutch Students Orchestra will give a classical concert in the Forum, after which it will be countdown time in the marquee between the Forum and Atlas – accompanied by the big band Sound of Science. Rector magnificus Arthur Mol will then officially open the centenary year, followed by a laser show.



Party of the Century 9 March

After the Foundation Day celebration during the day, the fun really starts in the evening of Friday 9 March. The joint party thrown by nine student societies has got to be the Party of the Century. One night, one ticket (6 euros), five parties in the town centre. The delights of DJs, live bands, world music and a silent disco, from 23:00 to 06:00



Creative innovation 10 March to 11 November

What do you get when artists and scientists go in search of innovations together? No idea. But in the coming months, it is going to happen. Ten young artists will each work on a project together with two researchers over two months. The results of their labours will be presented afterwards. Where, when and how is still to be announced.

The sower sows knowledge, of course: skills and wisdom. But in this centenary year he is sowing something else: festive happenings. There are lots of events on the centenary committee's programme. Resource picked 10 that you definitely mustn't miss.

text Roelof Kleis illustration Henk van Ruitenbeek



World Wide Wageningen

23 June

Wageningen alumni live all around the world. The main theme on International Alumni Day is sustainable nutrition and food. What better way to approach this theme than by sitting down to a meal together? The aim is to have 100 dinner parties around the world on that day.



Festival Wisdom & Wonder

15 september

The start of the new academic year is the right time for a party. On this Saturday, there is a campus festival for everybody. With workshops, performances, DJs, food trucks and more. If you'd like to perform yourself, you still have until 1 March to report to the organizing committee by emailing festival.100years@wur.nl.



System Earth

15 to 19 October

What do we really know about the earth as a system? And what do Wageningen scientists contribute to this knowledge? A week full of lectures, excursions and a big conference – Water Science for Impact – will showcase what Wageningen has to offer in terms of knowledge about water, soil and the atmosphere, and about how we treat them.



Music and science

3 November

Some scientists are good musicians as well. In that order. But that is not the only link between science and the arts. For a whole evening, student choir and orchestra WSKOV and student orchestra De Ontzetting will make music that makes connections with science. A one-off event in the Junushof.



What's Life?

12 to 14 March

We are going straight to the heart of the matter in the first week of the centenary year: life itself. What is life, actually? And how much tinkering with it is permissible? Throughout Science Week, there will be lectures by famous scientists from at home and abroad. On the last day, Mary Shelley's *Frankenstein* will come in for a lot of attention.



Signed

6 to 9 May

In 1943, students in the Netherlands had to decide whether to sign a declaration of allegiance or not. A choice between loyalty to the German government of occupation or labour camp in Germany. *Signed*, a play performed by actors including WUR students and staff, brings this turbulent period of history to life. The four performances are from Sunday 6 to Wednesday 9 May in the Junushof theatre.



Student championships

8 to 10 June

About 1500 students from all over the Netherlands will do battle for gold, silver and bronze from Friday 8 to Sunday 10 June in and around the Bongerd Sports Centre, in the Great Dutch Student Championship. Besides eight sports that are always included (football, volleyball, tennis etc.), the programme also features optional sports such as gymnastics, the triathlon, boxing, ultimate frisbee and beach korfbal. Oh yes, and there will be knots ball and pole dancing.

The complete programme is on wur.eu/100years



THE LAST BIG CELEBRATION

'I took this photo 25 years ago to mark the 75th anniversary of WUR, which was then still the Agricultural University. A big structure had been built in front of the Aula to get all the professors in the photo. Wim van Hof, a colleague who was working for the university, took the official group photo. He stood on the far side of Generaal Foulkesweg to fit everyone in it. I used a panorama camera of dubious quality. The focus was wrong too. If I'd known that lady on the right would one day be the President of the Executive Board, I'd have taken a few extra snaps.'

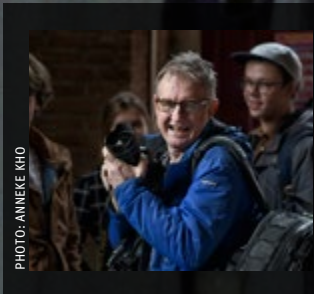


PHOTO: ANNEKE KIO

Guy Ackermans has been photographer for *Resource* and WUR for 35 years now. Capturing special moments through all those years. In this celebration year for WUR he shows us one of his most special 'pics'.

THE FRANKENSTEINS OF WAGENINGEN

Sometimes innovations do not work out as expected or intended, with the inevitable consequences. People have long been afraid of this, as the 200-year-old novel *Frankenstein* demonstrates. How do Wageningen scientists view the risks associated with their research?

text Stijn van Gils illustration Geert-Jan Bruins

Has the microbiologist John van der Oost ever felt like Frankenstein? 'Never' is his emphatic answer. 'I assume you're referring to my CRISPR-Cas research?' The researcher who was involved in the inception of this new method for making precise changes to DNA in organisms does not seem pleased with the comparison.

He feels it fails to acknowledge the many potential benefits of CRISPR-Cas. For example, the technique can be used to correct errors in the DNA and could consequently cure hereditary diseases. But it can also be a tool for developing food crops that can withstand drought or certain diseases, reducing the need for pesticides, water and energy to feed the global population.

MONSTER

Yet Van der Oost notes that the media like to zoom in on the potential dangers. That focus on fears is not new. It is exactly 200 years ago this year that Mary Shelley published her novel *Frankenstein*. It tells the story of a scientist, Victor Frankenstein, who comes up with an experiment in which he attaches dead body parts to one another and brings them to life with electricity. The result: an uncontrollable monster that ultimately commits a number of murders.

The moral of the story? Opinions differ on this, explains Henk van den Belt, assistant professor in the Philosophy chair group. He wrote an essay on the book for *Science* at the start of

the year. 'Some interpret it as a plea not to be ambitious. Man should not try to play God.' But the philosopher feels this anti-science interpretation is too one-sided.

Others read the book as saying Frankenstein's experiment was not wrong in itself but the scientist did not take sufficient care of his creation. 'The monster needed love but didn't get it, which is why it went off the rails.' Van den Belt finds this explanation too restrictive too: he thinks the book does indeed contain suggestions that some aspects of the experiment went too far.

PARALLELS

The design and result of Frankenstein's experiment are as bizarre as they are unreal. But if you look beyond the literal side of the story, there are plenty of parallels with modern-day Wageningen research. That research can also potentially lead to unexpected outcomes. The notion of something out of control is not so strange with a completely new technology like CRISPR-Cas. The technology can in theory be used to create designer babies or weapons that only have an effect on certain groups within the population. But even apparently safe lines of research can have unexpected side-effects.

Kor Oldenbroek, for example, worked at Wageningen Livestock Research on the improvement of cattle breeds, using the classic approach of selecting cows and bulls in a breeding programme. 'Sometimes you find milk pro-

duction increases but at the same time the cows become less fertile.' Because breeding programmes are relatively slow processes, Oldenbroek says animal breeders can respond in time and reverse developments that are resulting in animals with unwanted properties.

It is important, however, to track the 'breeding circle', he stresses. 'You always have to be very careful in setting objectives and evaluating them afterwards to make sure you are getting the desired results without any adverse side-effects.' That evaluation is even more important, he says, when using new techniques that speed up the breeding process.

REFUSED STUDY

Edith Feskens, professor of Nutrition and Health, does not immediately see any threats in her own research. After all, she studies how people respond to 'ordinary food products'. This involves looking for relationships between what large numbers of people are eating anyway and certain diseases.

Even so, Feskens has occasionally refused studies because the results could have become an uncontrollable monster. An occupational health and safety company wanted to know whether certain groups within the population were more susceptible to specific diet-related diseases. The idea was that those groups could be given more customized advice. 'There is nothing wrong with this scientifically. And there is evidence that more customized advice has

more effect. But it would also mean the health and safety company having access to data on people's genetic background and you never know what else they might use it for.' Feskens refused that research project.

There have been many more occasions, however, when Feskens did perform the study but tried to suppress the 'monster' in what she communicated about the outcomes. 'I am very cautious in press releases. If I were to find sugar had a beneficial health effect, I would first check and recheck my calculations, then publish it in a scientific journal but still not announce it in a press release. I think we need to be more circumspect as scientists. After all, a single study doesn't mean anything.'

TALKING ABOUT THE DOWNSIDES

Molecular Life Sciences Master's student Carina Nieuwenweg thinks scientists should be morally obliged to reflect on the potentially negative consequences of their work. She is studying how techniques such as CRISPR-Cas can make life easier. She is combining this

study with training at the Dutch Defence Academy where she is trying to get a picture of how enemies could weaponize those same techniques. 'As a scientist, you need to think ten steps ahead and have solutions for abuses before there has been any abuse.'

Nieuwenweg says there is enough debate in her degree course on how far you should go with techniques like CRISPR-Cas. But the communication could be more open. 'It comes across as much more honest if a scientist mentions all the downsides too. That makes you look much more neutral.' She thinks some scientists are afraid to speak their minds because of the way the public debate on genetic manipulation has been going. Genetic modification is still largely banned in Europe, despite the potential benefits for the environment, because of the perceived potential dangers.

PREVENTING

The philosopher Van den Belt is also sympathetic to the idea of completely frank communication. He says this could ultimately mean that a scientist may not be able to proceed with research they see as completely legitimate, even when scientists elsewhere in the world *are* allowed to continue. 'That is an observation, not a judgement. I personally feel there are specific applications that could be beneficial for the environment. It would be a shame if they didn't get a chance.'

Van den Belt is not impressed by the argument that you can't prevent innovation. 'It seems to be working pretty well in Europe with genetically modified food.' **B**



Professor produces fraud checker for food companies

No watering down



The horsemeat scandal in 2013 made food fraud a hot topic again in the Netherlands. Professor Saskia van Ruth has designed a checklist that companies can use to assess and eliminate the risk of scams in their supply chains.

text Albert Sikkema illustration Paul Gerlach

Food fraud means deliberately falsifying food products and food ingredients for your own financial gain, says Saskia van Ruth. Take the fraud committed by a Dutch meat processing company that was caught selling horsemeat as beef in 2013. Other examples are oregano mixed with chopped olive leaves, 'farm cheese' that is not actually made from raw milk or 'fresh meat' that has spent years in a freezer.

CRIMINOLOGISTS

Van Ruth heads the Authenticity and Nutrients group at Rikilt and she is a professor by special appointment in the Food Quality and Design group in Wageningen. Although the calls to combat food fraud are becoming ever louder, you cannot check every batch of food that is produced in the Netherlands or imported here, she says. 'Anyway, the fraud will already have happened by then. You really want a good system that can prevent fraud.'

That is why she and her colleague Pieternel Luning at Food Quality and Design contacted criminologists at the VU University Amsterdam about seven years ago. They started doing joint research on food fraud, which became the

basis for a risk assessment that they drew up. They wanted an overview of the factors that make food fraud more likely.

FRAUD CHECKER

That research has now resulted in a checklist with 50 questions for food companies. They can compare the situation in their own company against six food supply chains described by the researchers varying in the risk of fraud, from a low risk to a high risk. The checklist, the SSAFE Food Fraud tool, helps track down activities that are susceptible to fraud so that the company can improve its control over the activity or stop it. PricewaterhouseCoopers has now developed a handy app for the fraud checker.

The checker is based in part on basic knowledge about food fraud. For example, there is more risk with liquids than solids because liquid foodstuffs are easier to dilute and mix with other liquids. Van Ruth: 'Adding water to milk is simple and everyone in the supply chain knows that this is possible.' Products consisting of small particles, such as coffee, cocoa and spices, are also easier to mix with cheaper ingredients than larger products. In addition, the risk of fraud increases as the food supply chain becomes longer and more complex. 'In

that situation, there are more candidates who could commit fraud and these chains are often less transparent,' explains Van Ruth. 'What is more, consumers seem a long way off for many intermediaries. Anonymous players make the supply chain vulnerable.'

IN YOUR OWN BACK YARD

Companies often see fraud as something that happens externally, notes Van Ruth. They therefore usually carry out thorough checks of the products they buy from external suppliers. However, only one third of companies also check the products that leave their company. Yet fraud can also be committed in your own back yard without the company directors being aware of this. To identify this kind of fraud, the directors should check which employees have access to technology that could be used to falsify a product.

But why would a worker commit fraud without the boss knowing if this does not give them a financial advantage? 'It's not always about money,' replies Van Ruth. 'Employees might want to achieve their targets, avoid hassle or get a promotion.' That is why it is also important to find out whether a buyer is putting pressure on a supplier to deliver the goods cheaply



SIX FOOD SUPPLY CHAINS LISTED IN ORDER OF SUSCEPTIBILITY TO FRAUD

1. SPICES

Made up of small particles and therefore easy to mix. They are relatively expensive, which can be an incentive to commit fraud, and are traded in long supply chains, so there are more players who could potentially tamper with the product. What is more, the raw materials often come from countries where there is a degree of corruption and few controls.

2. OLIVE OIL

Liquid, so susceptible to fraud. The big question here is whether it is pure olive oil or whether another vegetable oil has been mixed in. Is the oil refined and cold-pressed as the label claims, and is the country of origin correct?

3 AND 4. MEAT AND FISH

The possibilities for fraud are limited. The biggest risks are in ground meat and meat that is added to other food products. Injecting water into meat to increase the weight is simple and also occurs. That is permitted, which means it is not fraud as long as the manufacturer states this on the label. With fish, it is mainly a question of whether the fish species specified on the packaging is correct.

5. MILK

Although this is a liquid that should be relatively easy to dilute, the chance of fraud is small. Milk is produced locally in short supply chains with close links between the farmers and their cooperative. Moreover, the milk composition is checked in detail on the farm and in the factory.


6. ORGANIC BANANAS

It is almost impossible to commit fraud with bananas. The only risk is that they might not actually be *organic* bananas. That is checked pretty thoroughly on the plantations though, where regular measurements are performed to check for chemical pesticides and artificial fertilizers.

or fast, and how dependent the supplier is on the buyer. 'If you make demands on your suppliers that are almost impossible to satisfy, you are virtually asking for fraud.'

VULNERABILITY RANKING

Based on these guiding principles, Van Ruth and her research partners assessed six food supply chains, for milk, meat, fish, olive oil, spices and organic bananas. The players in the supply chains were given the fraud checker and were asked to use it to evaluate their own situation.

The vulnerability ranking that this gave confirmed the general understanding that the researchers already had about susceptibility to fraud (see inset). Thus the spice industry is where there is most potential for abuse because the supply chain is long and complex, and ground food products can easily be adulterated without anyone noticing. 

The fraud checker can be found at ffv.pwc.com/vsat.



PHOTOS: SVEN MENSCHL

Winter AID participants portray an animal in the Crazy 66 puzzle tour.



The international society ISOW got Winter AID participants belly dancing in a workshop.



The Winter AID ended with a cultural evening in The Spot.

Is there room for some more?

Most new students come to Wageningen in September. However, a few hundred newcomers – exchange students and Master's students – were welcomed this month. They were shown around campus and town during the Winter AID. *Resource* asked them whether they had found a room despite the current housing shortage.

Of the 40 participants in the *Resource* survey, 28 (70 percent) had already found a permanent place to live; 11 of them had an Idealis room. Deepika, a new MSc student from India who lives in Haarweg, says: 'It was very easy to find somewhere via Idealis.' Gulce, an exchange student from Turkey who lives in Hoevenstein, agrees: 'It wasn't too hard to find the room'.

Idealis can confirm that housing everyone went smoothly this time. 'We were able to provide everyone with housing who had priority

and registered with us,' explains Helen Albers. She says the university supplies them with a list of students whose situation is urgent — 238 students this time. 'We try to house the people on this urgent list who are also registered with us. That was not all 238, since some find other solutions.'

PUT UP BY A FRIEND

The people who don't have an Idealis room went for sublets or private apartments. Amongst them are Bent from Germany and Bendeguz from Hungary. They were both looking for an apartment with their partners and were informed by Idealis that 'it is hard to find an apartment for couples'.

Of the 30 percent who do not yet have a permanent room, half have been promised they can move into permanent accommodation soon. For instance Dimitris, a new MSc student

from Greece, will move into a room in Earth House in two weeks' time. 'Until then, I'm being put up by a Greek friend.'

AIRBNB

The other half without a permanent room still have to find a solution. For instance Barbara from Italy, who stayed at an Airbnb place for two nights, now lives in a room in Haarweg, which she found through an Italian friend. 'I will have to move out in May and still need something for two more months.'

New Dutch students, who do not have priority, are particularly likely to have trouble finding a room. Michon, for instance, lives in Wageningen but still with his parents. 'I want to find something to be more independent, but it's too hard.' Annelieke, another Dutch student, gave up on the search after two months: she now travels from Utrecht every day. **LVK, TG**

PHOTO: KONSTANTINA TOGA



HOLIDAY HOME IN THE FOREST

Simone Dirks is a new Dutch MSc student of Environmental Sciences. Idealis informed her that since she already lived in the Netherlands she does not have high priority for student accommodation. So she started looking for a plot of land to purchase. She was planning to build a small, sustainable house of her own. However, the municipality informed her that buying a plot of land was not possible. Finally, after much searching online, she found and bought a holiday home in a campsite in the middle of the forest in Bennekom. Although she now spends around 30 minutes cycling to the university, she really likes her new home and she is planning to stay there for at least the next two years.

PHOTO: KONSTANTINA TOGA



SCAMMED ON FACEBOOK

While she was still in France, Erasmus student Melanie Desgranges posted a 'looking for a room' announcement on a Facebook page. Someone replied to her with a great offer and asked her to make a deposit of 900 euros. After she had deposited the money, the stranger disappeared and she could not find him, even after addressing the French police. Now Melanie has got over this awful experience. She is living in a temporary room in Wageningen that she can subrent for ten days, after which she will move to Asserpark for the rest of her exchange semester.

PHOTO: KONSTANTINA TOGA



ROOM SWAP WITH ANOTHER GIRL

Ricarda Schmidt, an Erasmus student from Germany, has lived in Vienna for the past few years, where she is doing her MSc. Through an Austrian Facebook page she found out that a student from WUR was looking for a room in Vienna for her exchange semester. Ricarda contacted this girl and they agreed to swap rooms. Ricarda now lives in this girl's room in Dijkgraaf and the girl is staying in Ricarda's room in Vienna. She considers herself very lucky to have found a room in this way.

Students urge action on rooms

TRAVELLERS

Viruses are real travellers. And they are not afraid of heights, according to a study by the University of British Columbia. The air at an altitude of 2.5 to 3 kilometres, just above the atmospheric boundary layer, is crawling with viruses and bacteria travelling back and forth. Every square metre on Earth releases 800 million virus particles into that layer of air. One sneeze and a sportsperson in Pyeongchang will get a cold. So put your hand in front of your mouth.

NEW LANGUAGE

Researchers at Lund University in Sweden have discovered a new language, Jedek, which is spoken in a village on the Malaysian peninsula. The language is used by precisely 280 villagers. Anthropologists had known about the village for a while but they had not realized until now that some of its inhabitants spoke their own language.

STRONG WOOD

Planes and cars made of wood? That could well happen. Scientists at the University of Maryland have developed a process that can make wood ten times stronger and tougher. It is then stronger than steel, but six times lighter. A boiling process removes some of the lignin from the wood. Then firm rolling compresses it, which results in incredibly strong wood.

CHASTE

The tooth-carp *Poecilia formosa*, known as the Amazon molly, only exists in female form. It reproduces through parthenogenesis, which means its offspring are clones. The species has survived nevertheless because of its great variation in the immune genes, the University of Würzburg has discovered. That makes them resilient without needing males to provide genetic variation. Still a mean trick.

The three main Wageningen student societies and the Student Council party VeSte have written to the municipal council urging action on the shortage of student accommodation. They want the municipality and the university to shoulder responsibility for the problem.

W.S.V. Ceres student society president Oscar Versteeg is very annoyed that there are still Dutch students having to live at home because they cannot find a room in Wageningen. It bothers him to

see how some member of his society have to commute for two hours to get to the university. 'WUR reserves 1000 rooms for international students. I understand that those students need a roof over their heads too, but it is not on to admit unlimited numbers of foreign students while Dutch students have to live in Ede, at a campsite or at home with their parents because they can't find a place to stay in Wageningen itself within a year. And it doesn't help, of course, to have a rule that there can be no more than five percent student houses

on one street.'

He joined forces with his colleagues at KSV Franciscus, SSR-W and the Student Council party VeSte to write a letter calling on the municipality and the university to deal with the room shortage. Campaigning for the municipal council elections has just begun and the letter-writers hope the local parties will put the room shortage high on the agenda. Versteeg: '30 percent of the Wageningen population are students, but students are barely represented on the Wageningen council.' **KvZ**

Four new sports at GNSK

Gymnastics, weight-lifting, the triathlon and hockey will make their debut this summer at the Great Dutch Student Championship (GNSK). The 60th championship will be held in Wageningen this year, for the first time in nearly 20 years.

At the GNSK, held in a different university town each year, university teams compete for the title of 'best student team in the Netherlands'. Eight sports are permanent fixtures (football, tennis, basket-

ball, badminton, handball, fencing, volleyball and squash), and there are a few optional sports that vary each year.

The Wageningen GNSK has selected nine optional sports: gymnastics, weight-lifting, the triathlon, hockey, rugby sevens, beach korfbal, cycling, Frisbee and boxing. 'We mainly went by which student sports clubs are very active here, what our facilities are suitable for, and which sports were chosen in previous years,' says board member Luc Roefs. 'The new

sports hall has a lot of gymnastics equipment, and the Wageningen Beasts are an enthusiastic and talented club. The nice thing is that there has never been gymnastics or weight-lifting at a GNSK, nor the triathlon or hockey either.' The typically Wageningen knotsball didn't make the selection. The GNSK starts on Friday 8 June and goes on until the end of Sunday 10 June. The campus and the Bongerd will be transformed into festival grounds with a campsite. Registration starts from 1 March. **LvdN**



PHOTO: SVEN MENSCHEL

It is partly thanks to the student strength training club Wageningen Beasts that weight-lifting will feature at the next GNSK.

Still glitches in registration with WUR card

A pilot scheme started this month in which students register at exams using their WUR cards. This means they no longer have to register in writing. But on 8 February the system was not yet working as it should.

A little under 200 students are resitting the exams for Organic Chemistry and Bio-organic Chemistry, in sports hall 4 at the Bongerd Sports Centre. When they have handed in their paper, they leave the hall, going past a table with an apparatus on it about the size of a cassette tape, which emits a loud beep each time a student places their WUR card on the appliance.

Sitting next to the appliance is someone from the IT department with two laptops. The student's number appears on one of the

screens every time. That is all that happens. The IT staff member says in a stage whisper: 'It's not working'. René de Koster, project leader of the pilot, curses under his breath. 'This really annoys me. The student numbers must be recorded, and that's not happening now. I don't know why not.'

In spite of this little glitch, De Koster is pleased with the innovation, which offers more protection of students' privacy. 'The AVG law, which expands the privacy rights of individuals, goes into effect on 25 May 2018,' De Koster says. 'The WUR card complies with this law.' Digital registration also reduces the risk of examination fraud. As soon as the student scans the WUR card, a passport photo appears on the invigilator's laptop screen. It does if the system is working, at least.



PHOTO: KENNETH VAN ZIJL

WUR has been piloting digital registration for exams this month.

'I'm happy with it,' says one student after the exam in the hall. 'This way no one can sit an exam for somebody else.' But a fellow stu-

dent is less sure about this: 'They don't look at the photo on your WUR card very carefully. I reckon you could still cheat.' **Kvz**

MEANWHILE IN... ITALY

'Many Italians perceive migration as a problem'

The attack by an Italian on six African migrants set off mass protests against racism in several Italian cities. Filippo Guerra from Italy follows the news of his country using media from different positions on the political spectrum.

'The protests were a necessary response to a tragic occurrence. Most participants belonged to the left wing, where demonstrations are common. I would have liked to see more demonstrations against racist violence by centre and right-wing parties. Italy is extremely heterogeneous which makes it difficult for me to estimate how migration is perceived throughout the country. I have experienced that the issue creates tension and causes discussions in my family.

I would say that many Italians perceive migration as a real and important problem. This should not be trivialized since quite a lot of people are worried about traditions, religion and job opportunities. In addition, people get scared of foreigners when they hear

about migrants committing petty crimes. Consequently, right-wing parties frame migration as a problem but I do not see them suggesting viable solutions. The left-wing



Filippo Guerra, Master's student of Plant Biotechnology from Italy, talks about the perception of migration in Italy.



PHOTO: SHUTTERSTOCK

African migrants' tents in Genoa, Italy.

parties do not acknowledge that there is a problem. From my point of view this is an inappropriate response to the current situation. When I was still living in Italy I volunteered on a regular basis. We supplied food for migrants and provided a space where they could talk to locals. I think that actively working to make migrants part of the community is very important. Ultimately, I believe that an effective collaboration between the Italian government and the European Union is crucial for solving problems related to migration to Italy.' **JS**

YOU ON CAMPUS

While most students on campus are revising hard for their resits, Jolijn Miedema (21) has other things on her mind. The MSc student of Forest and Nature Conservation is working with other students and a couple of professionals on *Getekend*, a theatrical performance about students during World War II. 'I thoroughly enjoy working behind the scenes on something big.'

Miedema had already gained some theatrical experience at secondary school. When she saw the appeal for members of the production team for *Getekend*, she did not hesitate for a moment. 'You won't get many chances to create something like this in a team.' She describes herself as a 'social butterfly' who loves meeting new people. 'Very nice to work towards something with great people, and to really see results.' This is not the first time Miedema has organized an event, either. For the third time, on 5 May, she and others will be running the show at the Kabaal am Ge-

maal podium at the Liberation Festival. So May will be a very busy month for her, as *Getekend* is being staged just after Liberation Day, from 6 to 9 May. 'And I'm going away straight after that,' she laughs. She leaves for an internship in Peru at the end

'I thoroughly enjoy working behind the scenes on something big'

of May, to help save the Brazil nut from extinction. 'That seems like a noble cause to me. My choice of internship was not so much about the country, though it's a nice bonus to go to Peru, as about contributing to creating knowledge we don't have yet.'

Miedema sees communication as an important component of her degree course, which was something she realized after starting her Master's in Earth and Environment.



PHOTO: LIZA VAN KAPEL

'I chose that because in my BSc programme in Forest and Nature Management, I missed the links between the soil and what's on it. I soon realized that I liked the subject but that I didn't want to focus on it.' So after a few months she switched to the MSc in Forest and Nature Conservation. Her first choice of Master's was not a bad one though. 'I only noticed how much I liked ecology when I was so relieved to go back to it. If you just go on doing the same thing all the time, you never learn where your heart lies.' **LvK**

PARTIES

In the party mood? Wageningen Party Promotion (WUP) tells you where to find one. See too www.wageningenup.nl.



CERES - OPEN PARTY: WHAT HAPPENS IN VEGAS...

Thursday 22 February from 23:00 to 05:00

Take a gamble and come to Las Vegas at Ceres. Nobody knows how the night will end. Maybe you'll go home with the jackpot! Please note: you can only pay with your PIN pass.

LUCA - MINICULTURE CLUB NIGHT

Friday 23 February from 22:00 to 04:00

MiniCulture is bringing us a new Club Night full of good electronic music. A great line-up of Dutch talent: Pin Up Club Live, Merel and Gamma Intel. Nice way to start the weekend!

WAGENINGEN - PARTY OF THE CENTURY

Friday 9 March from 23:00 to 06:00

A party over five venues to celebrate the university's first hundred years. The result of a unique collaboration between nine student societies. Not to be missed! **L**



PHOTO: SVEN MENSCHER

The band *Tante Ans en de Bosduvels* performed on 8 February at GroenLinks Wageningen's Election Kick-Off Party in café Luca.

Wageningen Master's students do internships and thesis research all around the world, getting to know their field and other cultures. Here they talk about their adventures.

Looking for aquatic insects in Nepal

'I've actually always been really wary. If someone comes to help me, I usually assume they want money. So when someone came up to me at the airport in Kathmandu, the capital of Nepal, and wanted to help me find the bus, I assumed he too wanted to rip me off. I clearly looked like a tourist. But this man looked at my ticket, brought me to the bus and said: "In you get. Bye!" I did eventually get used to how helpful the Nepalese are.


PREDICTIONS

I was based in the Bardia National Park along with a fellow student. They are planning to merge a glacier river with a rainwater river there in three years' time so as to free up more farmland. For my research, I studied the aquatic insects in those rivers. I wanted to know whether there were certain indicator species that respond specifically to temperature, for instance. I wanted to use those species to predict the effect that combining a cold-water river with a warm-water one would have on the ecosystem.

We often took a raft down the two rivers to collect samples. Then, back in the laboratory, I would identify the insects we had found. We were the first students to work in this nature reserve and we were given total freedom to set up our own study. We were also the first to look at insects, rather than the standard choice: tigers. Now there are other students who are continuing our research. We hope that the rivers will be monitored for at least one year.

A LOT OF PUBLIC HOLIDAYS

The Nepalese are really brought up to love nature. If an elephant were to terrorize a village, the Nepalese would do nothing to stop it. Killing an elephant or a tiger is just as bad as killing a human out there.

Another thing that struck me was that the Nepalese have an awful lot of public holidays. For example, there was a huge annual holiday week, Tihar, in which sisters place a spot, a *tika*, on the forehead of their brothers. According to the Nepalese, the *tika* means you have a blood-tie with someone. You could also give the *tika* to a really good friend. The family we were staying with asked whether we would give a *tika* to their son. That was really lovely; we truly became part of the family at that point.'  EvK

THE WORKS



Who? Eva Drukker, MSc Biology
What? Four months at the National Trust for Nature Conservation for her thesis study
Where? Thakurdwara, Nepal



Read more interviews
on resource-online.nl

KONINKLIJKE NEDERLANDSE
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Science Cafe
Wageningen

KLV

RESOURCE

CRISPR-CAS

from evolution to revolution

Eugene Koonin, NCBI, Bethesda, USA
- Bioinformatics


John van der Oost, Wageningen University
- Molecular characterization

Niels Geijsen, Hubrecht Institute, Utrecht
- Genome editing of human cells

Annelien Bredenoord, Utrecht University
- Ethical considerations

FREE
Online registration
required
goo.gl/MwoAA9

Thursday, March 8th
14:00 - Registration
17:45 - Drinks
Aula Wageningen University & Research
Generaal Foulkesweg 1, Wageningen



In memoriam

PROF. DANE DANIJEL BIČANIĆ



Our ex-colleague Dane Danijel Bičanić passed away on 11 February. Dane (known to some as Dado) started work in the Nature and Meteorology department at Wageningen in 1980. In 1985, he started his own line of research on photoacoustics and photo-thermic phenomena in the Agrotechnology and Physics chair group. In 1990 he moved into the Agrotechnion on the Dreijen campus, where he set up an impressive laser laboratory. Dane was a man of boundless energy and enthusiasm. He led several EU projects, which always included scientists from the former Eastern Bloc countries. All these collaborations resulted in 312 registered publications. He never considered giving up work, even when the Agrotechnology and Physics chair group was closed down. He managed to keep his laser laboratory and joined the new Biophysics chair group in 2001.

It was a token of Dane's scientific achievements that he was appointed professor at the University of Zagreb in 2005, alongside his continued work in Wageningen. Dane was an impassioned teacher, and this was rewarded with the title of Teacher of the Year in 2008. This was an accolade he was particularly proud of. One year ago, Dane finally had to say goodbye to WUR because his workplace in the Agrotechnion had to be vacated, and because of his own health problems. A few weeks ago his health suddenly deteriorated very fast and not long afterwards he passed away peacefully in the presence of his family. Many people will remember Dane for his highly driven, enthusiastic, committed and helpful personality. We offer his wife Vesna and their children and grandchildren our condolences for their great loss, and we wish them strength. He was so proud of them.

Herbert van Amerongen and Edo Gerkema

100 years Wageningen University & Research

A sneak peek



Life

March - May

Grand opening event
Dies Natalis Unravelling Life:
Wisdom & Wonder
Artists in residence –
by Beelden op de Berg
Science week 'What is Life?'
Month of education:



Food

May - August

Science at the local market
Symposium 'Food for Future'
World Wide Wageningen
Green Student Challenge
SDG Conference:
Towards Zero Hunger –
Partnerships for Impact



Earth

September - November

WUR on Wheels
Festival Wageningen
Wisdom & Wonder
Company day:
Future Perspective
Campus safari
Science week 'System Earth'



On 9 March 2018, we will celebrate our 100th Dies Natalis. This will be the festive start of our centenary and we are looking forward to seeing you. We proudly present a diverse and inspiring programme. This is just a small selection.

See for the full programme:
www.wur.eu/100years

announcements

STUDENT COUNCIL 2018/2019 ELECTION – SCHEDULE

The Student Council 2018/2019 election will be held from Monday 28 May 2018, 00:00 to Thursday 31 May 2018, 23:59 inclusive. The complete schedule for the Student Council election can be consulted via SSC online and MyPortal. A copy of the decision of the Student Council will be available for inspection at the office of the Secretary of the Student Council. Any person concerned may lodge a notice of objection to this decision up to and including 01 March 2018, with the Secretary of the Student Council, Hermijn Speelman, Droevendaalsesteeg 4 (Room B.103), P.O. Box 9101, 6700 HB Wageningen.

agenda

Thursday 22 February to Wednesday 14 March

FILMS FOR STUDENTS

The Party: a bitter comedy about a group of friends losing their certain-

ties in life. *A Ciambra*: an energetic drama about growing up in poverty-stricken Calabria. *You Were Never Really Here*: a sensitive character study disguised as a hard crime thriller. *Bar Bahar*: a social drama about three Palestinian women who live together in Tel Aviv. *M*: a social drama about Lila with a speech impediment and Mo who races cars. *7 Giorni*: a gripping romantic drama about an impossible love. *Call me By Your Name*: a homoerotic romantic drama about two boys in Italy. Venue: Wilhelminaweg 3A, Wageningen. €6.50/€5.

MOVIE-W.NL

Thursday 1 March, 12:30-13:20 LUNCH WORKSHOP 'SEARCH EFFICIENTLY IN THE RIGHT DATABASE' (WAGENINGEN WRITING LAB/WUR LIBRARY)

There are many places and ways to look up information. Knowledge of databases and search strategies will help you to find scientific publications on your topic efficiently and systematically. Learn about tips and tricks in this workshop. You can bring your

own research question to get advice. Admission is free. Be on time, as participant numbers are limited to 20. Venue: Forum PC0725. Info: info.wageningenwritinglab@wur.nl.

Thursday 1 March, 14:00 CONSERVATION SEMINAR WITH DR JABOURY GHAZOUL

Dr Jaboury Ghazoul is a tropical plant ecologist working on plant reproductive ecology and land use change. He leads the Ecosystem Management group at ETH Zurich and holds the Prince Bernhard Chair of International Nature Conservation at Utrecht University. This is a joint presentation by Wageningen Evolution and Ecology Seminars (WEES) and Future For Nature Academy (FFNA). Venue: Orion C2051.

WEESWAGENINGEN.NL

Wednesday 7 March, 19:30-22:30 MUNICIPAL COUNCIL ELECTIONS 2018: SUSTAINABILITY DEBATE

The Sustainable Wageningen Platform will hold a debate on sustainability in the run-up to the Municipal Council elections on 21 March. We'll be entering into debate with representatives of the political parties. Location: bblthk, Stationsstraat 2, Wageningen.

Monday 12-14 March SCIENCE WEEK 'WHAT IS LIFE?'

On the opening day of Science Week, three prominent scientists will reflect on the question 'what is life?' in relation to their own research; three young WUR scientists will present their fascination with studying biological, ecological and social life; and finally, the UFW will announce the winner of the UFW Research Prize. The second day of the Science week offers several sessions on recreating life and bioinspired design, and a demonstration of a range of bio-inspired robots. The third day focuses on 'changing and creating life', looking at for example the discovery of CRISPR technology and the legacy of *Frankenstein*. Registration via: www.wur.eu/scienceweek.

Deadline for submissions: one week before publication date (max. 75 words)
Email: resource@wur.nl

colophon

Resource is the magazine and news website for students and staff at Wageningen University & Research. Resource magazine comes out every fortnight on Thursday.

Address

Droevendaalsesteeg 4,
6708 PB Wageningen
(Atlas, building 104, bode 31).
POBox 409 6700 AK Wageningen.
Secretariat: Thea Kuijpers,
resource@wur.nl, 0317 484020
Website: www.resource-online.nl.
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Editorial staff

- Anton van Elburg (acting editor-in-chief) anton.vanelburg@wur.nl, 06 5429 8594
- Lieke de Kwant (Magazine editor) lieke.dekwant@wur.nl, 0317 485320
- Roelof Kleis (ecology, social sciences, economy), roelof.kleis@wur.nl, 0317 481721
- Linda van der Nat (Website editor) linda.vandernat@wur.nl, 0317 481725
- Tessa Louwerens (animals, nutrition), tessa.louwerens@wur.nl, 0317 481709
- Albert Sikkema (plant sciences, animal sciences, organization) albert.sikkema@wur.nl, 0317 481724

Others who work on Resource

Guy Ackermans, Sam van Beljouw, Annie Berendsen, Alexandra Branderhorst, Evelien Castrop, Cathy Chen, Susie Day, Teun Fiers, Marijn Flipse, Stijn van Gils, Aart-Jan van de Glind, Clare McGregor, Anne van der Heijden, Yvonne de Hilster, Hoger Onderwijs Persbureau, Lotje Hogerzeil, Anja Janssen, Liza van Kapel, Echica van Kelle, Helena Ligthert, Piotr Kukla, Sven Menschel, Carina Nieuwenweg, Rik Nijland, Madhura Rao, Manon Römken, Henk van Ruitenbeek, Julia Schäfer, Eva van Schijndel, Joris Tielens, Pascal Tieman, Konstantina Toga, Didi de Vries, Clare Wilkinson, Rob de Winter, Remo Wormmeester, Kenneth van Zijl

Design

Geert-Jan Bruins, Paul Gerlach

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External: Bureau van Vliet, T 023-5714745 m.dewit@bureauvanvliet.com
Internal (reduced rate): Thea Kuijpers, resource@wur.nl. T 0317 484020

Publisher

Marc Lamers, Corporate Communications & Marketing Wageningen University & Research



vis specialist

Wie zijn wij?

Aquafarm International B.V. is onderdeel van de Aquatic Wholesale Group. Als groothandelaar en fabrikant leveren wij een totaalpakket op het gebied van vijver- en aquarium producten, tropische vissen, vijvervissen en aquariumplanten aan speciaalzaken in binnen en buitenland. De sfeer in ons team is open en eerlijk, we werken hard. We doen al het mogelijke om onze klanten te bedienen, en wij staan altijd klaar om elkaar te helpen.

Een carrière bij Aquafarm geeft u ook het comfortabele gevoel van werken voor een gezond bedrijf. We bieden een marktconform salaris en een bonusregeling op basis van functioneren. Verder kun je rekenen op opleidingsmogelijkheden.

Job informatie

Als vis specialist bij Aquafarm verzorg je samen met circa 20 collega's de vissen en vang je orders voor klanten, zorgen voor een goede waterkwaliteit, schoonmaken, voeren en ziektes herkennen en behandelen maken deel uit van de werkzaamheden.

Wie ben je?

Je hebt een opleiding gevolgd in visteelt of biologie, in ieder geval heb je affiniteit met diervoorzorging en ben je geïnteresseerd om met siervissen te werken. Het werk is hands-on, levende have vraagt continue om verzorging en de werktijden zijn wisselend afhankelijk van seizoen, de hoeveelheid orders en aankomst van "late" zendingen, een 9-17 mentaliteit gaat daar niet mee samen. Van maandag tot donderdag werken we wisselend tussen 6.00 uur en 21.00 uur en 1 x per 4 weken draai je weekenddienst, op vrijdagmiddag zijn we gesloten en vaak heb je weekenddienst dan ben je op vrijdag vrij.

Reageren?

Enthousiast geraakt van de vacature? Stuur dan jouw cv en motivatiebrief op naar info@aquafarminternational.com ter attentie van personeelszaken.

>>TYPICAL DUTCH



ILLUSTRATION: HENK VAN RUITENBEEK

Looking after each other

Since arriving in the Netherlands, I have enjoyed a general feeling of safety, trust and a sense that people care about their fellow citizens and their belongings. As a result, I often left my bike unlocked when I parked it at the university. I couldn't imagine the lengths Dutch people go to in caring about others until the day I found my bike not stolen but locked!

I had spent a long day working on my ACT project and was eager to get home. When I reached the bike shed, I found my bike locked but my key was nowhere to be found. Not in my jacket pocket, where I usually leave it, nor in my backpack, trousers, the room where I had worked or on the path to the building. How could my key just have disappeared?

At the height of my confusion and panic, I caught sight of a note in one of my bike bags: *'Sleutels kwijt? Tel: ...'* ('Lost your key? Phone number: ...'). Now I was even more puzzled. Someone had found my key? How could that person know that it belongs to my bike, given the masses of bikes parked here? I hastily called to find out.

At the other end of the line a friendly Dutchman explained that he had parked his bike next to mine and seen that it was not locked and the key was still in it. Concerned about the security of my bike, he decided to lock it for me and keep the key until my return! Since then, I never forget to lock my bike anymore. Less out of fear that it might get stolen than to prevent the honest citizens of Wageningen worrying about it and taking action. **Rennie Eppenstein, Master's student of Organic Agriculture, from Germany**

Concerned about the security of my bike, he locked it for me and kept the key

Do you have a nice anecdote about your experience of going Dutch? Send it in! Describe an encounter with Dutch culture in detail and comment on it briefly. 300 words max. Send it to resource@wur.nl and earn twenty-five euros and Dutch candy.