



university of
 groningen

Science Shops Today

Annual review/report 2019



Content

Preface	3
2019 in numbers	3
Building bridges	4
Samen WIJS	6
Let's introduce Irene Maltagliati	7
Putting sustainability on the agenda	8
Let's introduce Ariska Bonnema	7
Celebrating twenty years of Living Knowledge	10
Time Team Thesinge	12
My 90-year-old roommate	14
The birth of modern science	16
FEB's Learning Communities	18
Column Saskia Visser	20
Publications en presentations in 2019	21

About the cover

Kim Veenman is a RUG-almnus, illustrator, writer and biologist. She works for journals as a freelancer and she is currently writing her first children's book. "I immediately became enthusiastic when the Science Shops asked me to make a cover. It was a challenge, because I had to visualise the colorful synergy between different disciplines. What you see is interaction and people working together. The 'wave' you see in the middle reflects the bridge between the university and society. I do honestly think that people are connected no matter what and that results in the best things." www.kimveenman.nl

Colofon

The Wetenschapswinkel Courant is a publication of the joint Science Shops of the University of Groningen. For a free subscription, email: tawi@rug.nl

Editorial board: The editorial board for this year was: Ariska Bonnema, Karin Ree, Saskia Visser, Vincent Hazelhoff and Pim Schievink

Cover: Kim Veenman

Layout: bauburo visuele communicatie

Print: Facilitair Bedrijf RUG, Grafimedia

ISSN: 1389-8612

Most of the projects covered in this annual review are published as reports or articles. You can download them for free via www.rug.nl/wewi. Do you have interest in one of the projects, please get in touch with the Science Shop that did the project.

Science Shops

Bèta Science Shop

Nijenborgh 6, 9747 AG Groningen
Karin Ree: c.m.ree@rug.nl / 050 - 36 34132
Karin de Boer: m.k.de.boer@rug.nl / 050 - 36 34686
Henk Mulder: h.a.j.mulder@rug.nl / 050 - 36 34436
science-shop-fse@rug.nl

Science Shop Economy / Careers Company

Postaladdress: Postbus 800, 9700 AV Groningen
Visitoradress: Duisenberg Building, Zernikecomplex, Nettelbosje 2, 9747 AE Groningen
Wijnand Aalderink: febforbusiness@rug.nl
050 - 36 37182

Science Shop Medicine & Public Health

Postal address: UMCG, Sector F, Wetenschapswinkel G&V, PO Box 30.001, HPC FA12, 9700 RB Groningen
Visitors adress: Hanzeplein 1, Gebouw de Brug
Els Evenboer k.e.evenboer@rug.nl / 050-3616635

Science Shop Education

Grote Rozenstraat 3, 9712 TG Groningen
Lieneke Ritzema: wewi-onderwijs@rug.nl
050 - 36 36997
Denise Leidelmeijer: d.f.m.leidelmeijer@rug.nl
050 36 32373

Science Shop Language, Culture and Communication

Postadres: Postbus 716, 9700 AS Groningen
Bezoekadres: Oude Kijk in 't Jatstraat 26, 9712 EK Groningen
Saskia Visser: s.j.visser@rug.nl / 050 - 36 35271
Vincent Hazelhoff: v.hazelhoff@rug.nl / 050-3637370

Knowledge Center Philosophy

Oude Boteringestraat 52, 9712 GL Groningen
Marc Pauly: 050 - 36 36948
Ariska Bonnema: kcf@rug.nl

The Science Shops online:

www.rug.nl/wewi

The Science Shops on Twitter:

[@ScienceShopsRUG](https://twitter.com/ScienceShopsRUG)

The Science Shops have a partnership with

Green Office Groningen

Visserstraat 47/49, 9712 CT Groningen
Irene Maltagliati: greenoffice@rug.nl / 050 - 36 35358
Wijk Inzet Jongeren Studenten (WIJS), winkelcentrum Paddepoel, Dierenriemstraat 106A

And before you know it, you're 40...

We marked our birthday last year with the modesty fitting a Groningen-based organisation. Some fantastically creative suggestions for celebrating had been put forward, such as our colleague Vincent's offer to ride a delivery bike from the UG office in Papenburg (Germany) via the city of Groningen to Campus Fryslân in Leeuwarden, Frisia, collecting new research questions from different science shop projects in rural areas as he went. Sadly, time was against us. But perhaps one day

We kept it simple. On the 21st of March, during our anniversary gathering at the University Museum Groningen, students presented their work to an audience comprising organisations, lecturers, managers and fellow students. Former city councillor Frank de Vries, who now works as a planner for the National Programme Groningen, an organisation that coordinates and supports initiatives designed to improve the quality of life in the province, emphasised the importance of collaboration. Alumna Fiona van Gelder told the audience

that the lessons she learned when she did her student project about multilingualism for the Science Shop over fourteen years ago are still proving relevant to both her career and her private life. Stories like these make you realize that every day is a day worth celebrating at the Science Shop. What can be more rewarding than being able to use your scientific knowledge for the benefit of society? What could be more gratifying than joining forces with local residents and organisations to learn new things and seeing motivated students expand their horizons? This year's annual review is full of examples: from inclusive agriculture to co-living, from archeology to sustainability. Personally, I am particularly pleased to have intensified our collegial collaboration with WIJS (WISE; the Science Shop initiated by Hanze University and municipality). I am excited about exploring answers to our city's challenges together with them, TalentWeb Groningen, and the Noorderpoort and Alfa colleges. And let's not forget how our colleague Saskia Visser has helped the University of Oxford to establish their Science Shop! Looking ahead, we are immensely

proud to have been invited to organise the next international Living Knowledge Conference. Way back in 2000, we helped bring this international network into being. Planned for 2020, we now have to wait one more year because of the Corona pandemic. But we look forward to welcoming around 300 participants from around the globe in 2021; what a fantastic opportunity to expand our knowledge. And we 'Groningers' might be known for our sober approach to life, but on this occasion we intend to push the boat out and treat our friends and colleagues to an uncharacteristically lavish 21st birthday celebration. For now, happy reading!

*Henk Mulder,
Chair UG Science Shops*



2019 in numbers

Statistical overview of questions and projects 2019

	Questions	Resolved questions	Students	Employees	Ext. Publications	Presentations & events
Bèta	34	53	105	3	40	44
Philosophy	10	8	8	2	2	4
Education	29	19	19	2	1	4
Economy	71	71	637	28	71	71
Medicine & Public Health	33	20	17	6	7	6
Green Office	0	0	0	3	0	20
Language, Culture & Communication	33	22	59	3	17	4
Total	210	193	834	47	138	153

Building bridges

A few years ago, a Groningen-based project won the Science Shop Award. The prize was a sculpture that the winner gets to keep for a year. It depicts a vulnerable climber on his hands and knees, concentrating on the daunting task of crossing a glass bridge – a fitting symbol of the work that the Science Shops do. Many of our students will recognize themselves in the sculpture. They often find themselves faced with the challenge of building bridges – not only between academia and society but also between various ‘conflicting’ social interests: farming versus nature conservation, grey versus green, the authorities versus the public, etc. Below are a few examples, one of which actually involves a physical bridge.

By Karin Ree

Combining nature conservation with agriculture

Intensive farming ruins biodiversity. It is with good reason that the term ‘green asphalt’ is applied to monocultures that offer birds and insects absolutely no food or shelter. Fortunately, some farmers are striving to find alternatives. Some, for example, are experimenting with ‘nature-inclusive’ agriculture in an effort to give the environment a chance. A fine example is the ESsentie pilot project, set up on the Westeresch near Veele (South-East Groningen) in 2018 and still ongoing. This collaborative initiative brings together farmers, nature organizations, provincial authorities and researchers. The Groningen Nature and Environment Federation is a fan of the ESsentie project and they asked the Science Shop to chart the opportunities and challenges. Joris Degenaar, who is studying Industrial Engineering and Management, chose the project as the subject of his Bachelor’s thesis.

The term ‘nature-inclusive agriculture’ covers a broad spectrum of activities. It can include non-inversion tillage and

growing green manures to foster healthy biodiversity in the soil. Strip tilling, which entails growing different crops side by side in narrow strips, reduces the spread of plant disease. Features such as field margins and hedgerows on farmland can also make all the difference to many plant and animal species. And herb-rich grassland helps restore biodiversity in pastures.

What can be achieved on the Westeresch and what lessons can others learn from this project? Opportunities are nice, of course, but we learn at least as much, if not more, from setbacks. During the interviews Joris Degenaar held with many of those involved in the project, three essential factors emerged: finances, organisation and knowledge. How can the environmental value of agricultural products be reflected in the price? How can we maximise the essential collaboration between farmers, environmental organisations, the authorities and scientists? And how can we ensure that the considerable knowledge and experience about nature-inclusive agriculture gained in the course of ESsentie and other projects

is shared effectively? After all, nature-inclusive agriculture is not only important for farmers.

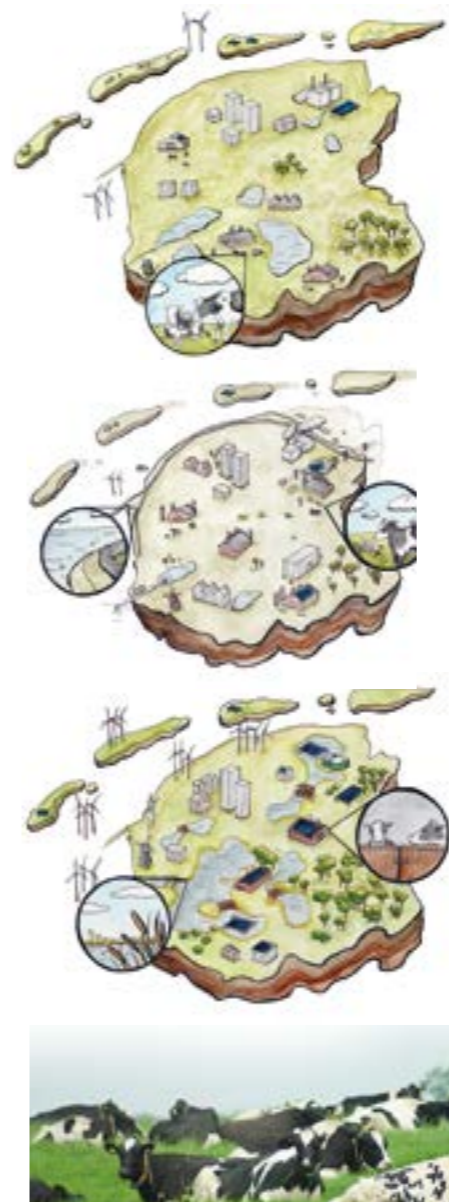
Green or grey?

What can Friesland do to improve its climate policy? Arjan Zuidema, who is studying Energy and Environmental Studies, carried out research on behalf of the Frisian Environment Federation to establish what it will take for Friesland to achieve national climate targets. The province has set the target of becoming energy-neutral by 2050, but climate policy is not only about energy – there are many other sources of greenhouse emissions. So where do the opportunities and challenges lie for this specific province?

Friesland’s landscape is characterized by two defining features: cattle and peat. Whilst agriculture and land use account for 17% of greenhouse gas emissions in the country as a whole, in Friesland they account for 60%. Due to the low water levels, the dry peat oxidises release large quantities of carbon dioxide in the process and cause widespread natural damage. Cows are also major contributors

to Friesland’s greenhouse gas. In order to reduce its greenhouse gas emissions by 95%, to bring it in line with the Paris Agreement, Friesland will have to reduce its cattle population and its pastureland as well as significantly boosting its peatland water levels.

The figures produced by Arjan and the accompanying images created by Leonie Belt help us to gain an understanding of what the landscape of Friesland could be like in 2050. If nothing is done, the province, which is currently green/blue, will turn grey as it succumbs to drought and salinisation. Despite high dikes, part of the province will disappear altogether as the sea level rises. If the necessary measures are taken, the landscape will change drastically too: instead of pastures, we will see lakes, swamps and wood-



land; and windmills, solar energy parks and bulrush plantations will stand where cattle once grazed. The choice is ours.

A bridge too far

There used to be a bridge over the Starckenborgh canal to the north of the city of Groningen, a symbolic link between the city and the rural region. The bridge is no more. In September 2018, a remote operation error led to a barge colliding with the Paddepoelster bridge and damaging it severely. What links the people living on either side of the canal now is their common desire to see the bridge rebuilt. That sounds straightforward. Surely it’s just a matter of the Department of Waterways and Public Works carrying out the necessary repairs? Unfortunately, it’s not that simple. The policy of the Department of Waterways and Public Works is to focus on shipping and the modernisation of the canal, and the bridge doesn’t fit in with their plans. The conflict has escalated beyond cyclists and people walking the Pieterpad trail needing a way to get across the canal and is developing into a complex tug-of-war between the public and the authorities.

Could some kind of temporary bridge be built that can serve until a decision is reached? Student Ruben Kuik (Industrial Engineering and Management), on behalf of the ‘Bring back our bridge’ action group, assessed the logistical pro-



Don’t say ‘moi’ (Gronings for ‘hi’) before you have crossed the bridge

blems arising from the disappearance of the link and possible solutions. The damaged bridge has since been removed altogether, so the action group’s favourite option, namely to repair the original bridge, is no longer viable. The best possible compromise, given the conditions laid down by the Department of Waterways and Public Works, is a temporary high bridge. For cyclists, it will mean pushing their bikes up and over it – just like the vulnerable climber on the Science Shop prize.

This situation inspired me to write a variation on the famous poem ‘De moeder de vrouw’ by Dutch poet Martinus Nijhoff (1894–1953). Translator’s note: my free translation is based on Myra Heerspink Scholz’s English translation of Nijhoff’s original poem.

Jan Altink returns

*I went alone to Pad’poel just to see
the bridge. It wasn’t there. The old link
between Stad and Reitdiepland,
cut off. Dazed, disoriented, I walked
about ten minutes through the silt along the shore
From the opposite bank the cries
of stranded walkers merged
with the despair of cyclists thwarted.*

*On the quayside lay a sign, already showing signs
of rust; turning it over, I read
‘Groningen – the cyclist’s city’; with regret*

*I thought back, homesick, to how the landscape used to look
when time was something to be savoured, stretched.
Have a heart! Bring back our bridge!*

Wising up

Students of vocational, university of applied sciences and university education roll up their sleeves to work together on societal challenges



Time and time again, it is becoming clear that projects have a larger impact if people from different knowledge institutions work together to tackle one problem. After all, societal challenges such as poverty and loneliness require a broad approach in the professional field. In the SamenWIJS project, students of the University of Groningen are working on current societal issues in our city, together with students of vocational institutions and university of applied sciences, the Municipality of Groningen and other organizations.

By Denise Leidelmeijer and Vincent Hazelhoff

In part due to the subsidy granted via the City Deal Kennis Maken (CDKM) impulse regulation, the Science Shops at the University of Groningen (UG) joined hands with student and youth neighbourhood organization Wijk Inzet Jongeren & Studenten (WIJS), an initiative of the Municipality of Groningen, WIJ Groningen and Hanze University of Applied Sciences. The goal of the collaboration is to better assign societal projects to the right students, to help more residents of Groningen and societal organizations. Whether through hel-

ping people complete their tax returns or conducting large-scale research into communication in the Oosterparkwijk neighbourhood, the students of both educational institutions are contributing to the city, learning within society and also gaining credits for their education programmes. The CDKM 2019 Regulation is giving another boost to this collaboration with the SamenWIJS project.

Multilevel and multidisciplinary collaboration

From this year onwards, the regional training centres Alfa College and Noorderpoort are also joining the project. The

power of multilevel (different educational levels) and multidisciplinary (different types of education programmes) collaboration lies in the uniting of each contributor's strong points: approachability and accessibility (in vocational education), approaching issues in a practice-oriented manner (at a university of applied sciences) and making a connection between complex issues and scientific research (at university). This collaboration is needed, as practice is often much messier than books would have us believe. In addition, collaboration between students from vocational, university of applied sciences and university education can dispel their preconceptions of one another and create an environment in which students can learn with and from each other.

Loneliness

The students are currently looking into loneliness in the neighbourhoods of Groningen. Clients from around the



city are helping the students by giving them specific issues to explore. For example, the neighbourhood organization Buurtcirkel Selwerd wants to find out how they can get a better picture of lonely people in their neighbourhood and, above all, how to reach them. But other questions are also posed, such as: how do you know if someone is lonely? Do these people need support and do they want to/can they work on this? With these specific issues to explore, the students get to work in mixed groups. Some students are working with the

Protestant parish De Fontein, following up from a previous student initiative that took place one and a half years ago, when students made and ate pizza together with lonely elderly people in the church. The elderly people are still talking about it and, for this reason, they are very happy to have the students from SamenWIJS come and help.

Skills

But how do you work together as students? To start with, the students' education programmes stipulate various

learning objectives and quality requirements. The 15 students meet every Tuesday morning for half a year. One week, the students receive guidance and coaching by lecturers from the participating educational institutions and work in their own groups (of 4-6 people) on an intervention for their allocated neighbourhood. They regularly give short presentations to the class to demonstrate how far they have come. The next week, they get to work independently, with de Ruimte (the WIJS shop in Paddepoel) as a base camp. There, the students can have conversations with residents, visitors and their clients.

The students respect each other's input and listen well to each other. They have mutually divided their tasks and like that the clients give them enough space to make their own decisions as a group. The contact that they have with their clients is highly valued: the students are presented with a concrete issue, so that they can help residents in a very focused manner. Working on actual problems within the city in an issue-oriented manner doesn't only lead to a focused attitude among the students but also to a flexible one – as working with neighbourhood organizations and volunteers isn't actually always a flawless process. It is precisely for these sorts of situations that the ability to adopt a proactive attitude is an indispensable skill for working life after completing your studies.

Let's introduce Irene Maltagliati

Six years ago, I moved from Italy to the Netherlands to study Health, Environmental and Social Psychology. After I graduated, I got the chance to study the public opinion in Groningen on natural gas, biogas and hydrogen. Moreover, I taught students on how to design projects that can encourage people to behave more sustainable. Since 2019, I am the Green Office coordinator of the University of

Groningen. Our main goal is to make sustainability an integral part of our university. I coordinate four student-assistants that work on outreach and communication. Together we support more than 150 Green Office ambassadors, organise events about sustainability and we develop a subsidy programme to help student associations become more sustainable.



Putting sustainability on the agenda

Engage, inform and organize

How do you get students and staff involved in sustainability? And how do you get sustainability onto the University's agenda? The Green Office recently organized a number of activities designed to raise awareness, encourage involvement and promote the adoption of a more sustainable lifestyle. These initiatives included a Sustainable Education Event and a Sustainability Week, packed with lectures, debates and other activities. Our approach was consistently positive and optimistic.



By Francine Nijp

What is the Green Office?

The Green Office is a dedicated platform within the University of Groningen tasked with organizing and coordinating sustainability-related projects. It is run by a number of staff members together with a student team. As well as organizing activities designed to inform, inspire and connect students, the Green Office is also committed to improving the sustainability of the University's management and policy. More than 150 ambassadors devote their energy to promote the Green Office's sustainability objectives at faculty level, working in close collaboration with our student team.

Sustainable Education Event

During a brainstorming session with students in December 2017, it was sug-

gested that each faculty at the UG should organize its own sustainability day. The aim of this day was for students to learn about sustainability in general, but more importantly to identify the unique contribution that their specialism can make. To generate faculty support for this idea, we organized a daylong Sustainable Education Event, where various sustainability-related study opportunities were highlighted and experts from different academic disciplines (from psychology to law) gave interesting lectures and workshops. The topics addressed ranged from feminism to the lessons we can learn from wolves.

The event, held in February at the Energy Academy, was organized by the Green Office in collaboration with the New Energy Coalition and the Future Planet Innovation Minor. The day started with a fascinating keynote presentation during which former minister and

children's writer Jan Terlouw outlined his take on sustainability and the future of society. Later in the day, students were given time to visit the information fair to find out about the various sustainability-related study opportunities the UG offers. Over 50 staff members and 350 students attended. An added bonus was that new sustainability project partnerships were forged during the event.

Sustainability Week

October 2019 marked the Green Office's fifth anniversary. To celebrate, the Green Office held its first Sustainability Week. An impressive 650 staff and students joined us for the various activities, debates, lunchtime walks and lectures.

Sustainability can be controversial, and issues such as climate change are on the heavy side, so we decided to fo-

cus on activities that would inspire people and get them thinking, motivating rather than paralyzing them. For example, together with Pint of Science and the Young Academy Groningen we organized a debate, advertised as 'A vaccine against climate apathy'. While the audience members sipped a sustainably brewed local beer at Baxbier, an ethicist, a comedian and a researcher taught them that all hope is not lost and that there are still ways in which we can turn the tide. In fact, we can see the climate crisis as an opportunity to bring about radical change for the better.

During a week packed with lectures,

debates, lunchtime walks and workshops, a wide range of themes were addressed, including Flygskam (flying shame), the ecology of the Zernike campus and the Noorderplantsoen, a sustainable lunch in the centre of Groningen, ocean plastic and what we can do individually to reduce plastic in our own city. We rounded off the week with a well-attended clothing swap event.

The Green Office plans to hold a second Sustainability Week in 2020. The challenge we have set ourselves this time is to reach as wide an audience as possible, not just staff and students who are already sustainably engaged.



Former politician with a green heart Jan Terlouw at the Sustainable Education Event



Let's introduce Ariska Bonnema

I'm Ariska, the new coordinator of the Philosophy Knowledge Centre – the Science Shop linked to the Faculty of Philosophy. Besides philosophy, I also studied linguistics, specializing in second language acquisition and psycholinguistics. So far, I have devoted most of my time as coordinator to promoting our Science Shop in an attempt to boost the number of questions we receive. An interesting challenge, given that people tend not to realize that the question they have is a

philosophical one, so they don't think of contacting a philosopher to ask for help. Which brings us to the burning question: 'What is a philosophical question?' Unfortunately, there is no easy answer. You could say it's a question about ethical standards, or a 'what is' question, or a question that gives rise to other questions. Well there you go, it seems that we already have at least one question we can put on our list, namely 'What is a philosophical question?'



Celebrating 20 years of *Living Knowledge*

In case *Living Knowledge 2021* in Groningen is your first encounter with the *Living Knowledge* network, we hope you feel welcome. Actually, we are sure you feel welcome! As *Living Knowledge* consists of such a friendly, flexible and diverse group of people who value all perspectives, fitting in is easy. We are looking forward to see old and new friends at our postponed 20th anniversary party and in anticipation we like to share some good family stories with you. Because that is how we see it, *Living Knowledge* is an international family of Science Shops with many community partners and responsible researchers as in-laws and our enthusiastic students as a new generation.

By Saskia Visser

The start in a Dutch polder

It all started 20 years ago in the middle of nowhere, in a Dutch polder where 17 people from Science Shops around the world got together. Norbert Steinhaus from the Bonn Science Shop was there: "My dearest memory is still linked to that kick-off meeting in Dronten when the network was established. It was the moment when we built long lasting friendships. We were sitting until 4am in the morning – drinking and talking, because everybody brought a special drink from their home country – and started working at 9 am again." They were working on the first Science Shop EU-proposal with the aim to unite local Science Shops into a more resilient international network. Norbert got involved in the Science Shop from a very profound motivation. "I believe that all people need a voice, someone to advocate their rights and interests. We were longhaired left wing students with this idea to open up research, we did not fit in the organisation of the university. So we formed our own separate institute and did basically everything as volunteers at first. In 2000 we had professionalised and just formed a network with our colleagues in Germany. We were ready for the next step."

Emma McKenna from Queen's University in Belfast joined the Science

Shop in 2001, but through her colleague Eileen Martin they were part of the initial *Living Knowledge* collective. Emma remembers what working in the Science Shop was like in those days: "Inside the University, Science Shop type work was still very untypical and we were working on a small scale, mainly in social sciences. Our developmental dream was to have pilot projects in other areas. But it was a lot of work to even get academics to consider their students doing community engaged projects and many said



Dancing at the LK Conference in Belfast, 2008

a flat no. On the community side, we were doing quite a bit of work helping people to understand what research is. The drive for demonstrating outcomes and evidence based policy making was still in early stages and many partners were overwhelmed by the thought of having to do research. Often they wanted someone to talk things through - many discovered they were already doing research but just hadn't thought of it in that way"

Effect of an international network

What changed for Science Shops with the establishment of the *Living Knowledge* Network? Norbert and Emma both mention the increase in recognition for the work Science Shops do. Norbert: "In the beginning my colleagues thought of me as the 'tourist', going to all these fancy cities like Paris, Rome, Barcelona and even to Canada or Australia. Although it was not seen that I

more or less just flew in and out, sitting all day in rooms without windows! But gradually this network became more valuable, also for colleagues which were not directly involved in international projects. Experiences were shared and new partners were found. Externally the Bonn Science Shop was recognized as a key player in the international movement of Science Shops. Requests came from international partners, but also from German universities, NGOs, ministries..."

Emma adds: "The network was really a source of support and gave me a sense of having colleagues around me doing similar things, even if they were in different countries. The first project I was involved in was ISSNET and I remember my first meeting in Innsbruck and realising how far this concept could go with the right kind of support. As direct benefits, the Network helped us establish projects in different academic areas by giving inspirational project examples. And being involved in European projects gave us more leverage to be taken seriously in different contexts both locally and nationally."

Conferences to connect, learn and have fun

EU-funding for the network made it possible to organise the LK-conferences in eight European cities so far. They are a chance to meet old and new friends, learn from each other's experiences and have some fun. In 2009 the conference came to Belfast. Emma: "We got buy-in from our senior managers to run the conference, which was a big acknowledgement of our expertise and a vote of confidence in us. This was part of a bigger picture that helped to embed our work in the university. For our community partners, academics and students it was good to see the wider European context of their work. The conference strengthened nearby Science Shops in Dublin and Cork, which again helped to make Science Shops feel more like normal practice and less like an outlier." The many community partners that participated in the conference showed a city with a troubled history but a resilient population that had not lost its

sense of humor. A representative from an organization of elderly people challenged the idea that ageing was a problem by the famous words: "Ageing is better than death!" That sentence was of course included in a rap to wrap up the conference.

Norbert's Science Shop hosted the conference in 2012: "It gave us and many others memorable moments. People still tell me that they remember the conference – and the party we had on the boat on the Rhine. Having keynote speakers from an important foundation and a local foundation which also supports international cooperation in Bonn on board gave us a good recognition." That *Living Knowledge* Conferences are all about joining hands is also reflected in the tradition of dancing. Emma: "Of course all the dancing stands out too - Norbert Steinhaus rocking out on plastic guitar on the Bonn conference boat trip, the Ceilidhs at the Belfast and Dublin conferences, the Lindy Hopping in Copenhagen, and the Hungarian folk dancing in Budapest."

A promising future

Emma and Norbert are still very passionate about the *Living Knowledge* network. Norbert: "I believe in the Science Shop model. I see it grow, I see that more and multiple facets of engagement develop and I know it



Take to the river, Bonn 2012

needs support to keep the information flow." Emma adds: "The network is the place I come to really do deep learning about practice, to hear how others have overcome different challenges and to strengthen myself to continue with what can at times feel like a struggle. Our current project (CIRCLET) feels like quite a new venture - it is focused on reflective learning - and I feel so lucky to have people around me to mentor and support me as I think my way into this new space. I also really love meeting new people coming into the network. Hearing stories of people starting out on this journey and learning how they are adapting and refining practice. And maybe passing on some of the wisdom that others have shared with me!"



The first members of *Living Knowledge* in 2001 with among others Norbert Steinhaus (standing, 3rd from the left), Henk Mulder (4th from the left) and Eileen Martin (7th from the left)



Time Team Thesinge:

Residents and students bring Germania convent back to life

What was the exact location of the Thesinge convent? In response to this question, submitted by the Thesinge Historical Committee to the Language, Culture and Communication Science Shop, Archaeology and History students teamed up with village residents to look for the answer.

By Vincent Hazelhoff

Any visitor to the village of Thesinge in Groningen in the year 1550 would undoubtedly have gone to see the Benedictine convent, Germania. In the Middle Ages, the area around the convent, known as the ‘Ommelanden’, was grim and uninviting. Its waterlogged, saline soil kept all but the most determined farmers at bay. The ideal setting, perhaps, for a monastic life of prayer and work (*ora et labora*). A number of the beautiful religious works produced at the time by the nuns of Thesinge still survive today. In the 17th century, a period of severe political and religious unrest in Groningen, the nuns fled the convent and it was destroyed. Only the convent church remained – and still remains – intact.

Some of those currently living in Thesinge were curious to find out more about the exact location of the convent, who lived there and what they did. Their local historical committee approached the

Language, Culture and Communication Science Shop to ask for help. In response, a team of students and residents carried out low-threshold geophysical research into the exact location of the convent, under the supervision of Archaeology student Margreet Wieske.

The inventor and the resistance meter

But how do you research the foundations of a convent without disturbing the landscape? To find out, the Science Shop organized an excursion to Rottum, a village to the north of Thesinge, where some years ago ophthalmologist and ‘inventor’ Willem van Wijnen used his self-devised resistance meter to research the Rottum monastery. In simple terms, a resistance meter comprises two electrodes through which a current is passed using a battery. If you put the meter in the ground, you can measure the ground’s relative resistance. The greater the resistance, the greater the proba-

bility that there is something under the ground. By carrying out a measurement for every square metre, you can create a fairly accurate heat map of what is under the ground (see illustration 1). What makes this piece of equipment so useful is that it enables you to see roughly what is under the ground without disturbing the soil, thereby making archaeological research both affordable and relatively straightforward.

Taking resistance readings in Rottum was not difficult, given the scarcity of other buildings in the vicinity of the monastery church. The situation in Thesinge is rather different. The researchers found themselves having to march



Fig. 1

through people’s gardens in their rubber boots to get decent readings. The historical committee proved an invaluable link in the line of communication between students and locals. The students were allowed to get on with their research and were even invited to shelter in the mill when the weather got bad. Curious residents went to Margreet for advice each time something interesting was found in one of their gardens, such as the occasion when the remnants of the cloister foundations were unearthed during excavation.

Cloister, ramparts and the abbess’s residence

Margreet focused her readings on the graveyard surrounding the convent church and the pastureland on which the convent ramparts are thought to have stood. For her Bachelor’s thesis, she drew comparisons between her readings, the relevant literature and information about earlier excavations carried out in the village. The resistance meter readings revealed fascinating information (see illustration 2). The convent did indeed have ramparts, designed to provide protection from plunderers and other unwelcome visitors in the turbulent 16th and 17th centuries. The readings taken

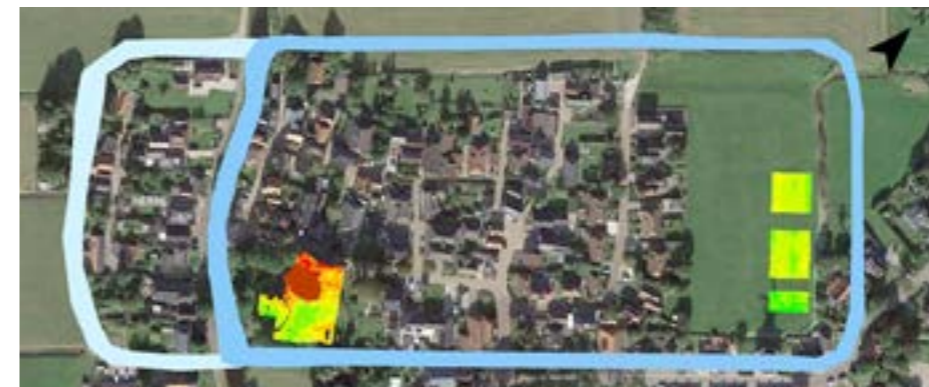


Fig. 2 en 3. The location and a cautious reconstruction of the convent

around the convent church give an indication of where the cloister must have been, as well as revealing the probable location of the abbess’s residence.

Citizen science projects: getting locals involved

Unfortunately, Margreet was not able to recreate a complete map of the convent church and grounds. Time was not on her side, and some readings did not work, either because of the rain (poor conduction) or because sheep had nibbled through the wiring. But the Thesinge historical committee decided to continue where she had left off, with Margreet and lecturer Stijn Arnoldussen providing coaching/advisory support where necessary. The commission members built their own resistance meter and collected their first geophysical data. Now, if we put together the relevant literature, the documentation of earlier excavations and the data collected by Margreet and the historical committee and add a dash of ‘archaeo-imagination’, we have enough to create a tentative reconstruction of what the convent must have looked like (see illustration 3).

The results are certainly interesting, but what makes this project so special is the level of collaboration. Local interest

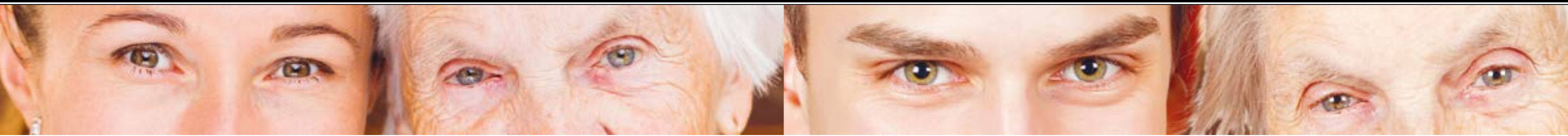
and involvement were such that 70 of the 550 or so residents of the village attended a successful information evening. It also led to a publication in the Dutch archaeology magazine *Archeologie in Nederland* and won a public award during a conference in Exeter. The evidence is clear: citizen science is so much more than an easy way of collecting lots of data. It shows what lies at the heart of science, namely the exchange of knowledge and a shared curiosity about the roots of modern civilization.



Thesinge’s Book of hours

One of the masterpieces left to us by the Thesinge convent is the ‘Thesinger getijdenboek’ dating back to 1515 (see illustration X), a richly illustrated book of hours, containing texts, prayers and psalms for use in private worship (see illustration 4). Thanks in part to research conducted by historian Elvira Ambrosius, the book has been fully digitized and is publicly available. Scan the QR code to browse this remarkable work.





My 90-year-old roommate

Young and old under one roof: a win-win situation?

Problem 1: Many elderly people in today's society know what it is to feel lonely. They long for more social interaction – and preferably not just with others of their own generation. Problem 2: Many young people are struggling to find affordable accommodation. Might not one group's problem be the other group's solution? But how, exactly? Jildou de Jong, a Master's student in Health, Care and Welfare at the University of Groningen, addressed this very issue in her Master's thesis entitled 'My 90-year-old housemate'.

By [Els Evenboer](#) and [Vincent Hazelhoff](#)

Intergenerational living

Jildou conducted her thesis research for the Science Shop for Medicine and Public Health. She investigated the relatively new concept of 'intergenerational living', whereby people from different generations live together in the same building and get to know each other through shared social activities. Jildou's research focused specifically on intergenerational living in care homes.

There are a number of care homes in the Netherlands where young people can rent an affordable room in exchange for doing voluntary work. They add vibrancy to the place, undertake activities with the elderly residents and generally exercise good neighbourliness. The concept of different generations living together has the potential to ease a number of societal challenges, such as loneliness, rising healthcare costs, staff shortages in the care sector, low occupancy rates in care homes and housing problems among the young. De Jong puts it like this: 'I have seen how generations who don't normally tend to mingle much can enrich each

other's lives and live together harmoniously. Intergenerational contact can have a significant positive impact on both young and old, but it doesn't happen by itself.'

Literature search and interview

Jildou used a literature search and exploratory interviews to draw up a list of care homes in the Netherlands where young people and elderly people live side by side. Five of those homes were willing to undergo research. Jildou observed that contact between young and old takes place at different levels. Relationships vary from formal volunteer-client arrangements to informal neighbour-to-neighbour contact or even, in some cases, genuine friendships. The spread in results showed that the care homes fell into two categories: (1) those with a 'higher level' of intergenerational contact and (2) those with a 'lower level' of intergenerational contact.

Jildou identified a positive relationship between the level of intergenerational contact and people's general sense of wellbeing. In care homes with a 'higher level' of intergenerational contact, both the older and the younger residents scored higher on affection, stimulation and lack of loneliness than

those living in the care homes with a 'lower level' of intergenerational contact. As one of the elderly residents of a care home with a high level of contact between the different generations put it, 'Yes, the students are great. If I need something, all I have to do is call Sven, and he's at my door within 15 minutes. Every time. Without fail. It's such a bonus. I love having the students around.'

Positive responses

Most of the elderly (83%) and young participants (90%) in Jildou's research said they would recommend intergenerational living to others. The elderly participants identified the following as benefits of sharing their care home accommodation with young people: a livelier atmosphere, the chance to keep participating in society, more activities and opportunities to offer and receive help. The young people also listed the reasons why they would recommend living in a care home together with elderly residents: companionship, enrichment, being able to contribute to society, an aid to personal development and a way of fostering cross-generational understanding.

Recommendations

The present research produced an initial impression of intergenerational living in care homes. As well as charting participants' experiences regarding the impact of intergenerational living on loneliness, affection and stimulation, the research also revealed that intergenerational living appears to contribute

positively to people's inner growth, their sense of being needed and their ability to participate in society again. Their contact with young people helps the elderly to expand their horizons and make new discoveries. Conversely, as care home coordinators point out, elderly people have a lot to offer other generations in terms of life experience, knowledge and wisdom. Also, as a result of their contact with elderly residents, young people become more conscious of the need to stop rushing sometimes, make healthy choices and take the time to celebrate the good things life has to offer.

It would be interesting to research intergenerational living at a broader level, also in other residential settings, and to investigate the impact of these new forms of intergenerational living on society as a whole, as part of

the wider social debate on how to build bridges between young and old. Jildou's position is clear: 'In today's ageing, individualistic society, I believe we need

to create more room for projects and initiatives that bring young and old together and encourage them to offer each other mutual support.'

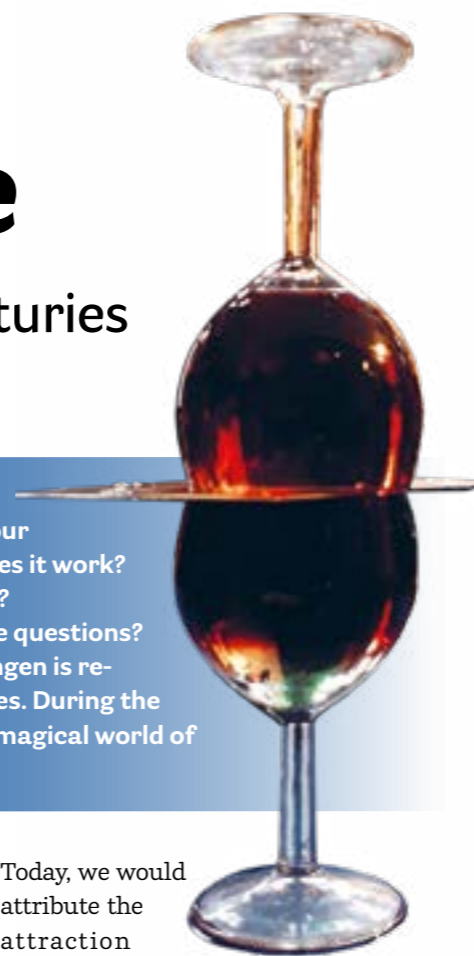
Factors that contribute to a positive experience:

- 1 Young and elderly people living side by side in the care home
- 2 Financial incentive for the young people, e.g. low rent
- 3 A good selection procedure to identify suitable young people
- 4 Emphasis on 'good neighbourliness' rather than a formalized relationship
- 5 Care home design and decor that appeals to both young and old
- 6 Evaluation meetings with elderly residents, young residents and staff so that insights can be shared and improvements can be made



The birth of modern science

DIY researchers in the 16th and 17th centuries



Imagine if you will: You live in the 16th century. Institutes and universities as we know them today do not yet exist. But there are certainly phenomena in your life that have awakened your curiosity. Take the magnet, for example. How does it work? How is it possible to make an object move from a distance without touching it? And perhaps more importantly, how are you going to find the answers to these questions? Dr Doina-Cristina Rusu of the Faculty of Philosophy at the University of Groningen is researching the emergence of experimental science in the 16th and 17th centuries. During the University Museum's 'Beyond the Lab' exhibition, she escorts visitors into the magical world of early modern experiments and the explanations researchers came up with.

By Ariska Bonnema

The possible explanations proffered back then are radically different from

those we are used to hearing today. Let's return to the example of the magnet. A magnet can attract objects from a distance – but not all objects. How come?

Today, we would attribute the attraction of iron to a magnet to magnetic fields and different sorts of atoms. But the measurements carried out in the 16th and 17th centuries led to the conclusion that there must be invisible pneumatic matter (called spirits) travelling between the iron and the magnet. And these spirits were credited with doing far more than just influencing magnets ...

Take, for example, the following experiment: Take two glasses of the same size and shape. Fill one with water and the other with wine. Cover the water glass with a thin plastic separator, flip it and place it upside down on top of the wine glass. Now remove the separator from between the two glasses. What happens? The wine out of the lower glass rises, and the water sinks. Why? Today, our explanation would be that water is heavier than wine. Back then, researchers had a very different explanation, again all to do with spirits.

The distillation of liquids was practised widely. People believed that wine was full of spirits, and distillation was seen as a means of removing those spi-



rits from the original liquid. The spirits turned into vapour and then condensed back into a much denser liquid form. Ever wondered why distilled alcoholic beverages are known as spirits? Now you know! The wine in the experiment we've just described rises because it is lighter than the water. Wine is lighter than water because it is full of spirits, the scientists of the time argued, and spirits always rise. A similar logic was applied to explain why distilled liquids are so combustible. Spirits are of a fiery nature, just like stars, and that makes them extremely flammable.

Beyond the lab

In the context of the 'Beyond the Lab' exhibition at the University Museum, Doina gave a workshop about her research, during which she gave demonstrations of experiments like those described above. She discussed with visitors the explanations proffered for phenomena in the 16th and 17th centuries. The central theme of the 'Beyond the Lab' exhibition was DIY researchers who go looking for explanations and solutions outside the context of a university or research lab. In the period under discussion, universities as we know them did not exist. The research that did take place was done by alchemists, monks and natural philosophers or people who had money. The experimental researchers Doina is studying could be said to have been the earliest examples of such DIYers!

The birth of experimental science

The experiments carried out in that period and the conclusions drawn from them may seem far-fetched and unprofessional to us. But they actually represent an important departure from Aristotelianism, the pre-Christian worldview

that was still prevalent at the time and that emphasised the inviolability of theory. If you were faced with a phenomenon you could not explain, the assumption was that the problem must lie with you and not with the theory. Perhaps you just needed to study the phenomenon more closely – and to keep studying it until it tallied with the theory. Within Aristotelianism, it was not uncommon for phenomena to be adjusted slightly to fit the theory – a practice that gradually revealed more and more cracks in the theory to those with eyes to see them.

The 17th century brought change. Experiments were carried out, and the results were taken seriously. New theory was built around results, rather than results having to be explained in terms of existing theory. This shift marked the birth of science as we know it today. Different hypotheses could exist side by side, unhampered by foregone conclusions. The methodology introduced by these DIY researchers still serves us well today. It may be old, but it works!

Academic-ID

Name: Doina-Cristina Rusu

Title: Manipulating Spiritual Matter: How did early modern science become experimental?

Motivation: During her PhD studies on Francis Bacon, the father of experimental philosophy, Doina developed a fascination for the early scientists' struggle to explain phenomena. She won a Veni, a prestigious grant for talented researchers, to continue her research into early modern science. Her research topic straddles two fields: the history of philosophy and the philosophy of science. It is also of relevance to contemporary philosophy of science.

Fun Fact: As part of her research, Doina made replicas of old measuring instruments, with the help of PhD student Lukas Wolf. This entailed such time-consuming tasks as filing down metal to create the perfect conductor rod for an electroscope, an instrument used to demonstrate the existence of static electricity.



Dr. Doina-Cristina Rusu

FEB's Learning Communities: breeding grounds for innovation and collaboration with the business world

All students following Master's and Bachelor's degree programmes within the Faculty of Economics and Business can opt to join extra-curricular Learning Communities. Within these Learning Communities, students step beyond the scope of their standard curriculum and link up with organizations outside the university to develop new skills and work on innovative topics relating to current social trends and the challenges associated with digitization, globalization and sustainability.

By Wijnand Aalderink and
Marjan van Ittersum

The number of Learning Communities has grown rapidly in recent years. There are currently seventeen taking place each semester, with over 200 student participants in total. Lecturers, students and external organizations are all welcome to nominate topics they would like to see addressed. The overall coordination of the project lies with FEB Career Services.

In this article, we highlight two examples of Learning Communities.

Women in Business

Diversity and gender equality are hot issues across the business world. In 2017, Selena Dolderer, organizational psychologist and researcher at the Faculty of Behavioural and Social Sciences, observed that there were still more men than women in top positions and decided it was time to act. She started a Learning Community called 'Women in Business; Diversity Management Skills'. It is currently running for the third time.

Selena is keen to get university students and staff talking about diversity on the work floor. Her area of expertise is diversity management. Within the Learning Community, she works with students of different years and from various disciplines, addressing and researching themes such as perceptions and prejudices surrounding the role of



women in business. Selena says that although we have made great strides towards creating equal opportunities for men and women in business, we are still hampered by unconscious preferences and structures that foster discrimination and limit opportunities to achieve genuine equality at the top.

Under Selena's supervision, the students produced an interesting publication containing interviews with different female consultants, managers and employees in very diverse organizations. To make their findings more widely accessible and to generate debate, the students also arranged a panel discussion with University of Groningen lecturers Dr Petros Milionis and Dr Stacey Donofrio. Reflecting later on their Learning Community experience, the participants observed that as well as learning more about diversity and gender equality, they had gained a deeper insight into their own authenticity and personal qualities.

Business value of Artificial Intelligence

The focus of this new Learning Community is the added value of Artificial Intelligence (AI), a new technology that is increasingly making its presence felt in society and in business. The participants are students from the Faculties of Economics and Business and Science and Engineering. Together, they research topics submitted by the six organizations named below.

IBM and CGI are both ICT service providers for whom the advent of AI presents exciting opportunities, but also challenges. As well as needing to



Women in Business

figure out how best to explain the new application options to their customers, they are having to restructure their own operations to make the most of the new possibilities.

Insurance providers TVM and Univé are in the process of transitioning to become IT companies, using data as the raw material for new forms of service provision.

The Municipality of Groningen is wrestling with a series of ethical questions relating to its role as a public organization. Which data should it collect? Which data should it disseminate to citizens? Who has the necessary insight to monitor this process effectively? How can citizens invoke their rights in

a digital society?

The sixth participant is Cursor Asset Management, a start-up that uses drone technology and high-quality video recordings to inspect physical objects such as buildings and bridges.

The Learning Community was set up in collaboration with the Municipality of Groningen. Students are assigned to multidisciplinary, multinational groups to work on their own topics. But they also join forces with the businesses and with their supervisors to puzzle out how the businesses can best incorporate AI into their organizational strategy. The programme also included a three-day trip to Berlin, including a group visit to HUB Berlin, Europe's largest IT innovation fair (which was canceled due to Corona).

The students are jointly supervised by Bas Baalmans of the Groningen-based Digital Business Center and Wijnand Aalderink from FEB Career Services, thereby ensuring that links are made between the two themes digitization and employability. The Learning Community offers participating students the opportunity to better their chances on the job market, while offering businesses the chance to engage in digital innovation and do some talent spotting.

New FEB Learning Community topics are introduced each semester. Students from other disciplines are also welcome. Interested organizations and alumni are invited to submit topic recommendations and participate.

For further information:

FEB contact persons:

Wijnand Aalderink, Director of Career Services and Corporate Relations,
m.w.aalderink@rug.nl, 050 3638207

Marjan van Ittersum, Learning Communities Project Leader,
a.g.t.van.ittersum-leegte@rug.nl, 050 3633710

Column

Artificial intelligence? Sorry, but we worry about simple things

Establishing a new Science Shop in Oxford



Many people think that Artificial Intelligence (AI) is something mysterious for the far future. But computers that can learn and make decisions without human intervention are closer than you think. Social media already use algorithms to decide which news feeds you will see, thus creating your digital bubble. Doctors are relying more and more on big data and computer assistance in order to decide on the best diagnoses and treatments. So AI is already affecting your life and our society, and this influence will continue to grow, containing positive and negative aspects.

Therefore it is about time to include citizens in the discussion on the future of AI. We should not expect big tech companies to take into account our privacy or the fair treatment of, for example, minorities.

This task to connect citizens and scientists in the field of AI was the core of my adventure at the University of Oxford. From July 2019 to January 2020, I had the chance to pilot a Science Shop in AI and find out if the concept was viable in Oxford. With Brexit on our tail, we seized the opportunity to collaborate with nine other new Science Shops across Europe in the EU-project SciShops to make our initiative work. There I was, catapulted to a new environment and unfamiliar subject. A linguist between computer scientists and big data experts, a Dutchy trying to make sense of acronyms and adept to British politeness. What was my 17 years' experience working in a Dutch Science Shop worth in this setting?

I must admit, at first I felt lost. It was like a total reset of the system, to stay in computer terms. There was nothing I could do automatically; even crossing the road or buying edible bread had to be done with the utmost concentration to avoid serious damage. Although we might think that in Groningen our Science Shops are small and often overlooked or not understood correctly, with my refreshed view I can assure you we are really well established! In Groningen it is so easy to reach out to an organisation and find interesting societal issues to work on together, easy to find the right courses for a project and explain to supervisors what a Science Shop project would entail.

Not to say that in Oxford people don't want to collaborate with local communities, it is just that they are not used to it. Many students and researchers come from other parts of the world to Oxford and stay a short while, so they lack a local network and

the need to build one. There are hundreds of public lectures and events organized by university staff each year, in which they are used to inform the public or reach out to schoolchildren, but not to really consult the audience. For example, a senior researcher on automated vehicles has never visited the local car factory. He does not imagine talking to the workers or management would add anything to his research. On the other side, local organisations see the university as a rich, powerful institute that could provide money or resources, but not as a partner to collaborate with on equal terms. "Artificial intelligence? Sorry, but we worry about simple things, like people who lack digital skills to fill out governmental forms."

So establishing a Science Shop in Oxford proved not to be easy, but on the other hand, my encounters also showed there is a need for it. We organized a workshop for PhD-students and 80% of them said they would like to make a connection outside Academia themselves and everyone agreed it was important for researchers to do so. Researchers asked my help in preparing a deliberative democracy event in which they wanted to consult the public about using and sharing different types of medical data. A lecturer warmly welcomed citizen science in her course and 25 students tested the river in the University Park in the pouring rain and still enthusiastically discussed it afterwards. Within half an hour their perspectives shifted from the researcher's - doubting the quality of data - to the citizen's perspective - what to do when you find out your river is polluted? Without much encouragement they asked me: How can citizens and scientists work together on this and how could we use AI to combine data and make a stronger case? These examples show a fertile Oxfordshire soil for a Science Shop to grow.

Artificial Intelligence is a buzzword inside the university and feels complicated for many others. But I have learned from my Oxford adventure that we should not be too easily impressed. Ordinary people are well equipped to think about consequences, bias and fairness of new technology. It is easy to understand that if we train automated decisions of recruiting new CEO's on historic data, we will continue to have only white middle-aged men in these positions. If we want a diverse and fair society, a more diverse group of people should be consulted. A Science Shop approach can make that happen and give everyone a say in our future. Accepting automated vehicles or not, technology should not be in the driver's seat.

— Bèta Science Shops — Publications

- **Carlijn Stokvis Sustainability calculation tool, a sustainability analysis of the KEI week** Bachelorrapport Technische Bedrijfskunde.
- **Kevin Biguet optimization tool for energy storage systems configuration at solar fields** Bachelorrapport Technische Bedrijfskunde.
- **Lieke de Groot Adoption of precision agriculture technologies, a decision tool for the seed potato sector in the Netherlands** Bachelorrapport Technische Bedrijfskunde.
- **Thijmen Pille Improving Facility Logistics for the Municipality of Groningen** Bachelorrapport Technische Bedrijfskunde.
- **Thomas den Hartog Prevention of microplastic soup via wastewater treatment** Bachelorrapport Technische Bedrijfskunde.
- **Joris Degenaar Barriers in the transition towards nature-inclusive agriculture in the North of the Netherlands** Bachelorrapport Technische Bedrijfskunde.
- **Maike Odijk Analysing the possibilities for the filtration of car tyre microlastics in Dutch separate sewage systems** Bachelorrapport Technische Bedrijfskunde.
- **Rob Koedijk Storage selection: the solution for congested grid areas? Helping cooperatives choose energy storage methods for easing congested grid areas in the Groningen province** Bachelorrapport Technische Bedrijfskunde.
- **Roel Steggink Sustainable thermal energy storage in Middelstum** Bachelorrapport Technische Bedrijfskunde.
- **Ruben Kuik Bridge over troubled water', Design of logistic route after Paddepoelsterbrug broke down** Bachelorrapport Technische Bedrijfskunde.
- **Raveen Johnson Environmental Analysis of Animo Coffee Machines** Stagerapport Energy and Environmental Studies.
- **Arjan Zuidema Frisian greenhouse gas emission policy** Masterrapport Energy and Environmental Studies.
- **Cleo Offers Alternatieven nodig voor drijfmetinjectie?** Stagerapport Energy and Environmental Studies.
- **Ron Poort What is the potential for industrial ecology with regards to water management on the Emmtec industrial site?** Masterrapport Energy and Environmental Studies.
- **Sjanne Rekker IV Where?! Investigation of the German implementation possibilities of IVWear's wearable intravenous**

- **therapy system** Master adviesrapport Science Business & Policy.
- **Robbert van Gool Natuurnetwerk in de Hunze realiseren door natuur te combineren met de functies energie productie en landbouw** Master adviesrapport Science Business & Policy.
- **Thamar van der Pol Moving with the times, Ageing shift workers at Abbott Zwolle** Master adviesrapport Science Business & Policy.
- **Tigran Airapetian. An approach in testing algorithms.** Master adviesrapport Science Business & Policy.
- **Frederike Menage. From soil to spoon: Launching innovative school-based nutrition project van Grond tot Mond successfully on the market.** Master adviesrapport Science Business & Policy.
- **Shane O'Connor, Immeke Fokkema, Iris van der Ham, Johnny Jose, Nicolaas Krijnen, Anna Mirnaya, Dieneke Post, Nino Papa. Current knowledge about expensive medicines among Dutch medical doctors.** Master rapport Science & Business.
- **Soheila Jalali, Franziska Saalman, Manon Spaans, Nicole Huber, Laura Arends, Robert Bos, Frank Luijckx, Marloes Groenhagen. Plenty of fish in the sea? Analysing European fishing policies in West Africa** Master rapport Science & Policy.
- **Harma de Boer, Ydwer Kuindersma, Thijs Oost, Sander Vanca Sociale Verdeeldheid tussen Inwoners en Nedmag** Bachelorrapport Sustainable Contributions to Society.
- **Alexander Schlatmann, Damin Booiman, Eva Neijman, Gijs Thedinga, Wytse de Haan. Balancing Ecology and Economy in the Ems-Dollard Estuary.** Bachelorrapport Sustainable Contributions to Society.
- **Paulius Barakauskas, Elske Veenstra, Marije de Boer, Sanne van Delden, Hugo Mohr. Disposable plastic cups at student associations in Groningen.** Bachelorrapport Sustainable Contributions to Society.
- **Jantien Vogel, Jeroen Schreiber, Evert Barel, Tamara Zwartz, Amber Kroon. Food forestry, growing towards a sustainable future FP.** Bachelorrapport Sustainable Contributions to Society.
- **Jacobien ter Brugge, Jeroen Grolman, Emile Nugteren, Max van Tyull van Serooskerken. Potential collaboration between Operatie Steenbreek and Evoscope.** Bachelorrapport Sustainable Contributions to Society.
- **Adriaen van der Moer, Iris Koomen, Iris Topal, Jeffrey van Dijk, Renske de Vries. Nutrition education in the Netherlands.** Bachelorrapport Sustainable Contributions

- to Society.
- **Kim Wierenga. Zernike Campus Groningen: verbinden tot één geheel.** Bachelorrapport Sustainable Contributions to Society.
- **Olivia Arkensteijn, Sarina Bouwmeester, Anicka Nguyenová, Matthijs Schuiling, Felix Wagner. Microplastics in cosmetics and self-care products.** Bachelor rapport verbredende module Garbage Patchwork, Honours College.
- **Ana Costov, Nina Frohn, Martijn Hoving, Paula Leutner, Gemma Stouwie. PVC in the environment.** Bachelor rapport verbredende module Garbage Patchwork, Honours College.
- **Lisa Förster, Hannah Habekotté, Alberdien Hakvoort, Celia López Escribano. Polystyrene; slowly phasing it out.** Bachelor rapport verbredende module Garbage Patchwork, Honours College.
- **Tabea Rademacher, Suzan Timmermans, Franka ten Voorde, Pieter Brongers, Nick Sledzinska. Planet or Plastic: analysing the role of food packaging in the global waste crisis.** Bachelor rapport verbredende module Garbage Patchwork, Honours College.
- **Yasmine Bouzouaa, Noa Mathilde Munster, Shaswat Sinha, Linde Wieringa. Recycling of PET.** Bachelor rapport verbredende module Garbage Patchwork, Honours College.
- **Linde Wieringa, Franka ten Voorde. Livesaver or troublemaker: bioplastics.** Honours College 2 nd year Bachelor advanced project.
- **Lieke van Iersel. A review on the biodegradation of plastics by several bacteria and fungi.** Honours College 3 rd year Bachelor advanced project.
- **Frits van den Berg, M. Karin de Boer. The effect of brown and black noise on persons suffering from a low frequency sound.** Proceedings of the 23 rd International Congress on Acoustics. <http://pub.dega-akustik.de/ICA2019/data/articles/000047.pdf>
- **Giulia Leone. Methodology for examining trophic transfer of microplastic form herrings (Clupea harengus) and salmon (Salmo salar) to grey seal pups (Halichoerus grypus).** Master onderzoeksrapport Mariene Biologie.

Presentations

- **Nienke Koelman, Peer Wubbolts, Isabelle Dubios, Lisa Schleijsen. The influence of seal rehabilitation and regulation changes on the Phoca vitulina population.** Eerstejaars Biologie/Life Sciences

and Technology, 25 januari 2019.

- *Majorie Slobbe, Fabian van der Straeten, Olle Odijk, Igor bij de Vaate. Exposure to microplastics is dangerous, or is it?* Eerstejaars Biologie/Life Sciences and Technology, 25 januari 2019.
- *Dide Hormes, Jens Boermans, Nard Boeding, Doreen Smid. Blackbird 2.0 Does urban evolution create a new blackbird species?* Eerstejaars Biologie/Life Sciences and Technology, 25 januari 2019.
- *Susanne Kuckuck, Michelle Luxwolda, Deborah Salle, Ilse Jansen, Marjan Kraai, Mireia, Martine Maan, Karin Ree, Karin de Boer. "Lost in Vibration" pissebeddenlabyrinth, Evoscope.* Nacht voor de Kunst en Wetenschap, 8 juni 2019, Der Aa Kerk.
- *Karin de Boer. Impact of plastic on marine environment.* Green Office Initiative: Tegenlicht Meet up, Plastic waste, Van Swinderen Huys, 9 oktober 2019.
- *Frits van den Berg, Karin de Boer. Presentatie 'Effect van ruis op klachten over een laagfrequent geluid'.* Congres Geluid, Trillingen en Luchtkwaliteit, Hoevelaken, 5 november 2019.
- *Frits van den Berg. Presentatie 'Effect geluidverrijking bij klachten over laagfrequent geluid'.* Jaarbijeenkomst KKAu (Kring Klinisch fysici - Audiologen), Doorwerth, 8 november 2019.

— Science Shop Education — Publications

- *Moreno Hidalgo. 'There is more in me than the eye can see: Embracing gender and ethnic cultural diversity in education'* brochure met activiteiten voor de workshops voor het symposium 'Gender and Ethnic cultural Diversity in Education', mei 2019

Presentations/ Evenets

- *W. Hager, 'Van rommelokaal naar Parel: een leegstaand lokaal als ruimte voor talentontwikkeling kind'*, posterpresentatie, Iustrum wetenschapswinkels RUG, Groningen, 21 maart 2019.
- *D.F.M. Leidelmeijer, 'There is more in me than the eye can see: Embracing gender and ethnic cultural diversity in education'*, organisatie symposium 'Gender and Ethnic cultural Diversity in Education', Groningen, 15 mei 2019.
- *D.F.M. Leidelmeijer, deelname aan de Landelijke Kennisdelingsdag City Deal Kennis Maken*, Den Bosch, 1 november 2019.

- *D.F.M. Leidelmeijer, 'Sociale veiligheid op school'*, deelname aan Kenniscafé VIII, Openbaar Onderwijs Groningen, 9 december 2019.

— Medicine and Public Health — Master theses

- *Jildou de Jong. Mijn 90-jarige huisgeenoot.* Een exploratief onderzoek naar het intergenerationale contact tussen ouderen en jongeren die samenwonen in verzorgingshuizen in Nederland.
- *Lieke Terpstra. De effecten van het project Eigen regie en participatie:* Een kwalitatief onderzoek naar de effecten die het project 'Eigen regie en participatie' heeft op haar deelnemers en hun sociale omgeving.

Reports

- *Pascal Mik, Els Evenboer. Samenvatting literatuur slaaphygiëne bij mensen met een licht verstandelijke beperking.*
- *Pascal Mik, Els Evenboer. Uitdrukken kansengelijkheid van jongeren in het onderwijs.*
- *Zinzi Pardoel, Nienke Riemersma en Jolanda Tuinstra. Eindrapport evaluatieonderzoek Eigen regie en participatie: Vrouwengroep Hestia.* Toegepast Gezondheidsonderzoek UMCG en Wetenschapswinkel Geneeskunde en Volksgezondheid.
- *Nienke Riemersma. Effectiviteit van diabeteshulphonden bij het vaststellen van hyper- en hypoglykemie bij patiënten met diabetes.* Een eerste verkenning van de literatuur.

Symposia

Poster presentations for the Science Shops' 40 year anniversary

- *Marjan Borgers e.a. Vrouwengroep Hestia: Meedoen in de maatschappij start met rust in hoofd, lijf en huis.*
- *Anne Bakker. De Kracht van de algemene voorziening. Sociale samenhang binnen algemene voorzieningen.*
- *Jildou de Jong. Mijn 90-jarige huisgeenoot.* Een exploratief onderzoek naar het intergenerationale contact tussen ouderen en jongeren die samenwonen in verzorgingshuizen in Nederland.
- *Pascal Mik. Overzicht literatuur slaaphygiëne bij mensen met een lichtverstandelijke beperking.*

Presentations

- *Lieke Terpstra. De effecten van het project Eigen regie en participatie* Een kwalitatief onderzoek naar de effecten die het project Eigen regie en participatie heeft op haar deelnemers en hun sociale omgeving. Presentatie tijdens bijeenkomst Vrouwengroep Hestia 2.
- *Adriaen van der Moer e.a. Nutrition Education In the Netherlands. Reconnecting children to food.* Spin-off van eerdere masterthesissen <https://www.hannn.eu/agenda/save-the-date-samenwonen-jong-oud>

— Knowledge Center Philosophy —

- *Artikel in de Margriet 'Kom erbij' over wonen in een woongroep*, augustus 2019
- *Christiaan Triebert. 'Filosofie in de onderzoeksjournalistiek'*, september 2019
- *Agnes Schilder en Andreas Schmidt 'Is geluk maakbaar'*, oktober 2019
- *Marc Pauly 'Overwegingen rondom gemeenschap, communicatie en beslissen'*, november 2019

— Language, Culture and Communication — Theses and other publications

- *J. Chateau, Huisje, Boompje, Wijkje: Place-making en communicatie in de Groningse Oosterparkwijk*, Dec. 2019.
- *Zandgrond, M., The Missing Components in Dutch Literacy Training: How to support and improve literacy training*, Juni 2019.
- *E. Ambrosius, Vrouwelijke verinnerlijking in geneeskrachtige getijdenboeken:* De inhoudelijke samenhang in de laatmiddeleeuwse getijdenboeken uit de Benedictijner vrouwenkloosters Selwerd en Thesinge, Juni 2019.
- *R. Klinkhamer, Meanderend door het institutionele landschap:* De ontwikkeling van de institutionele inrichting van het Generale Zijlvest der Drie Delfzijlen en het Winsumer- en Schaphalsterzijlvest vanaf het begin van de veertiende tot tweede helft van de vijftiende eeuw, Juni 2019.
- *C. Vermuyen, N. Schuiling, De representatie van Zwarte Piet in kinderboeken (1850-2013)* Juli 2019, bundel.
- *A. Rengeling, De digitale stem van ouderen:* Experimenteel onderzoek naar het effect van het gebruik van een narratieve versus informatieve tekst op de attitude en intentie van ouderen om deel te nemen

aan een digitaal Ouderenpanel, Juli 2019.

- *E. Mousavi Torshazi, Versterking Drents en Duits in het onderwijs:* Een onderzoek voor Wiesneus naar de vragen en informatiebehoefte van ouders en leerkrachten over de streektaal Drents en meertaligheid bij hun kinderen en leerlingen in de thuis- en schoolsituatie, april 2019.
- *M. Wieske, Benedictijnen in Groningen:* Een geofysische verkenning naar de ruimtelijke indeling van het voormalige klooster in Thesinge, april 2019.
- *17 Leeswijzers in opdracht van stichting Senia* (10 Nederlands, 5 Engels en 2 Duits). Commissie Spraakmakende boeken, 25 jaar spraakmakende boeken (Groningen 2019).

Presentations Poster presentations

- *V. Hazelhoff, Onderzoek naar het Kinderboek*, 21 maart 2019.
- *Noortje van der Laan, Taalleren met een app*, Letterenstudenten ontwikkelen taalapplicatie Mynn, 21 maart 2019.
- *Studenten Nederlandse Taal en Cultuur, Literatuur om over te praten.* Letter-

kundestudenten schrijven leeswijzers voor seniorenleesgroepen, 21 maart 2019.

- *M. Wieske, Benedictijnen in Groningen.* Een geofysische verkenning naar de ruimtelijke indeling van het voormalig klooster in Thesinge, 21 maart 2019.
- *C. Vermuyen, Onderzoek naar het Kinderboek*, 14 september 2019.
- *J. Chateau, Julia van der Zee, Communicatie in de Oosterparkwijk*, 14 september 2019.
- *Noortje van der Laan, Taalleren met een app*, Letterenstudenten ontwikkelen taalapplicatie Mynn, 14 september 2019.
- *E. Ambrosius, Vrouwelijke verinnerlijking in geneeskrachtige getijdenboeken*, 14 september 2019.

Presentations

- *C. Vermuyen, N. Schuiling, De representatie van Zwarte Piet in Kinderboeken*, 8 december 2019.
- *V. Hazelhoff, Over de Wetenschapswinkel Taal, Cultuur en Communicatie*, college vertaalwetenschappen, 4 december 2019.
- *V. Hazelhoff, About the Science Shop*

Language, Culture and Communication, college Minorities and Multilingualism, 3 december 2019.

- *V. Hazelhoff, De Wetenschapswinkel Taal, Cultuur en Communicatie*, presentatie Faculteitsbestuur Letteren, 25 november 2019.

— In the news —

- **'Uiterlijk Zwarte Piet weerspiegelt onze tijdsgeschied'**, RTV Noord, 5 december 2019 (<https://www.rtvnoord.nl/nieuws/216432/Uiterlijk-Zwarte-Piet-weerspiegelt-onze-tijdsgeschied>).
- **Afstudeeronderzoek laat zien: Zwarte Piet veranderde altijd**, 5 december 2019 (<https://www.nd.nl/nieuws/nederland/941346/afstudeeronderzoek-laatzien-zwarte-piet-veranderde-altijd>).

— Events —

- **Pop-up-Wetenschapswinkel**, Letterenfestival, 14 september 2019.
- **Sustainable Education Event**, 6 februari 2019.



The 40th anniversary of the Groningen Science Shops was celebrated by a well-attended poster afternoon, where students and organizations could meet.

Shared knowledge is power