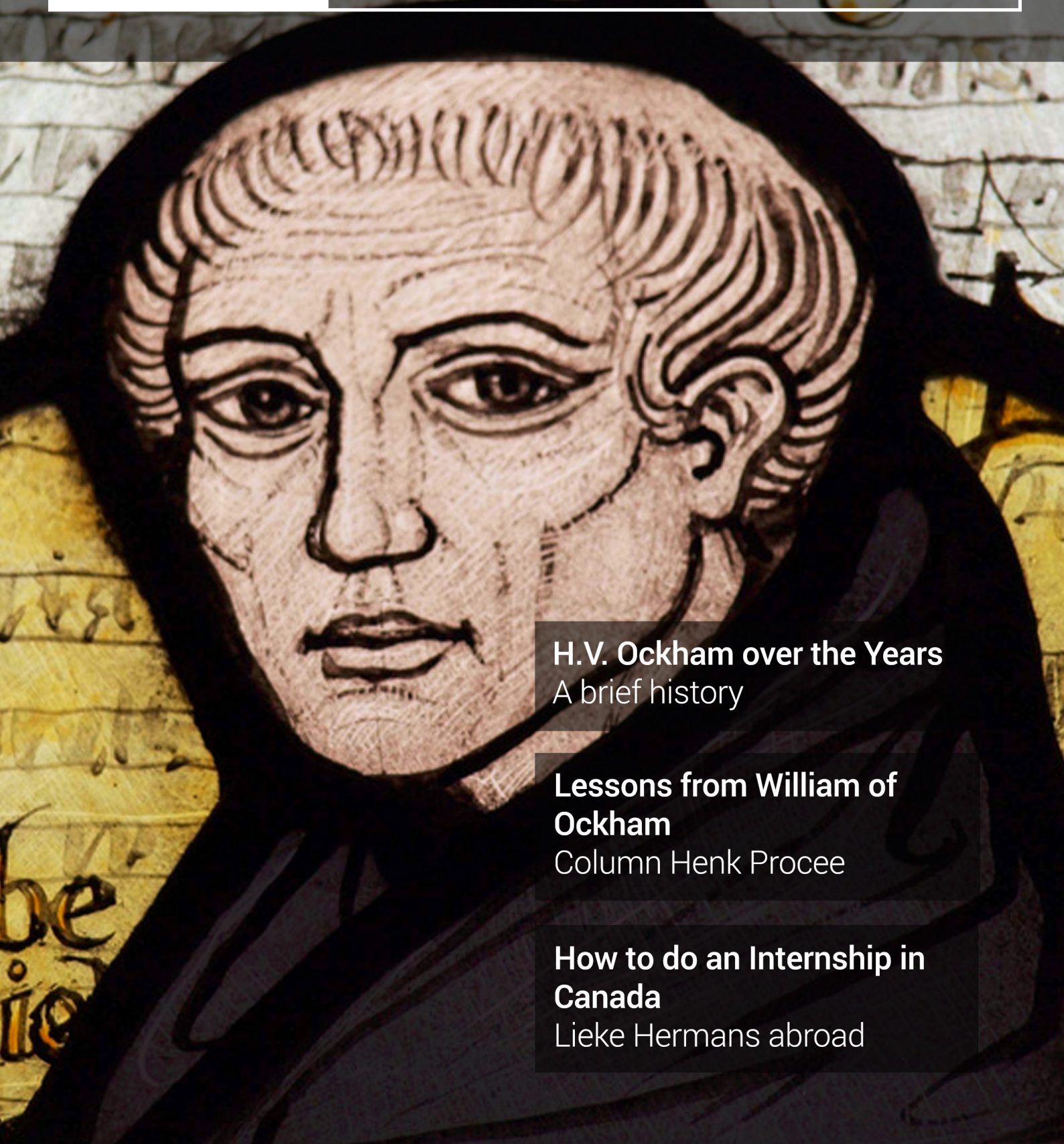




OCKHAM'S RAZOR



H.V. Ockham over the Years
A brief history

Lessons from William of Ockham
Column Henk Procee

How to do an Internship in Canada
Lieke Hermans abroad

CONTENTS

- 3 From the Board
- 4 Editor's Letter
- 5 H.V. Ockham over the Years
- 8 Inside Information from an Honours Teacher
- 9 Column: Lessons from William of Ockham
- 10 Life after Honours: Julius de Hond
- 12 News in Science
- 14 How to do an Internship in Canada

FROM THE BOARD

Dear Reader,

Greetings, and welcome to the first issue of "Ockham's Razor", the magazine of Honoursvereniging Ockham. The Board of Ockham is thrilled at the inception of this excellent new way of reaching and connecting with all members of our association, both old and new. The Experiencie has worked hard to bring this enterprise to fruition.

Our members belong to a diverse array of fields and disciplines. Ockham's Razor endeavours to establish a medium through which Ockham members in varied stages of their academic or professional careers can be motivated to flourish in their respective areas of study or work, hurdles notwithstanding.

We are already halfway through this academic year, and a lot has happened in the association. We have gained several new members, especially from the Masters Honours Programme, and expect to obtain more once the new class of Bachelor students start their Honours Programme. A few subtle but pleasant changes and additions have been made to the Ockham Room. There have been fun activities on the occasions of Halloween and Sinterklaas as well as the Dies. There has also been a lecture by Fokko Jan Dijksterhuis (Honours teacher and new Honorary Member of Ockham), and a workshop by Ben Elsinga (Author of The Young Professional).

Equally exciting events are planned for the remainder of the year; the details of these will be revealed in time through the monthly newsletter. Amongst our various other plans for the association, one is particularly worthy of note. In keeping with a fairly new tradition, and encouraged by the popularity of the preceding study tours, a new Study Tour for 2016 has been planned. I am pleased to announce that the destination for the study tour this year is Switzerland. Individual excursions will be described in the upcoming weeks.

With this momentous announcement, I shall take my leave. I am positive that this magazine will prove to be a great addition to the association as well as immensely enjoyable.

Best Regards,

Saumitra Ramesh Athlekar
Secretary of H.V. Ockham



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EDITOR'S LETTER

Dear Reader,

After months of hard work, we proudly present to you the first edition of Ockham's Razor! Ockham's Razor is a magazine that is meant to improve the network both within and outside of the association. Therefore, the magazine mainly focuses on the experiences of people in and around the Honours community of the University of Twente, together with interesting articles about science and other businesses. The magazine that lays in front of you is a result of the contributions of its editorial team. Caroline, Marieke, Rik, Belinda, Hanna, Laura, Lisette and I hope that you will enjoy reading this magazine! Furthermore, we welcome any suggestions or remarks from you, the reader. Your suggestions can help us to improve the quality of the next editions of this magazine.

Ockham's Razor is meant as a way for H.V. Ockham members to share their experiences. Also, we took the first edition as an opportunity to give you more insight in our association. The cover article of this issue features the history of H.V. Ockham. In this article, you can read how H.V. Ockham came to be and developed through time into the vibrant association it is today, organizing fun activities, inspiring lectures and even international study trips. Also, in an interview with honours lecturer Irene Visscher-Voerman, you can read how she experiences teaching students in the Honours Programme.

It might not surprise you that these Honours students are generally very talented and ambitious. Indeed, their endeavors are usually far from limited to their study and honours programme alone. Not without a small sense of proud, we can say that being part of H.V. Ockham is being part of a group of people with truly fascinating undertakings. These credentials have not seldom lead to alumni ending up in prestigious institutions and companies. In this magazine we tell the inspiring adventures of these members. In our first edition, Lieke Hermans and Julius de Hond kick off with sharing their stories.

I hope you enjoy reading the very first edition of Ockham's Razor, and that this magazine can inspire you for your own experiences to come!

Tim Hermans
Editor in Chief



H.V OCKHAM OVER THE YEARS

It has now been more than 6 years since the foundation of H.V. Ockham. This seems like a good time to look back at how it all started. After the first generation of honours students successfully completed the programme in 2009, a few of them started brainstorming to establish an association. In the honours programme they had worked together for one and a half years, and they wanted an association as a means to stay in touch with fellow students. As a result the oldest honours association of the Netherlands was formally founded on the 29th of October 2009. It was celebrated with a founding party, held in the Blomzaal of the Faculty Club. ▶





► The initiative takers formed the first board. In the first year they organized a mini-symposium about development aid in cooperation with Studium Generale. The hall in the Vrijhof was packed with visitors. Even Radio 1 attended, since one of the speakers was Wiet Janssen who had fallen into disrepute. He had been promoted recently, but four professors of other Dutch universities strongly criticized his promotion a day before this presentation. Also the board organized a variety of social events, like a bowling night and a dinner out.

The second board (2010/2011) continued where the first board had ended. Monthly drinks in the Theatercafé were organized and the first Dies Natalis was celebrated. At the beginning of the academic year 2011/2012 Ockham held an introduction barbecue, such that the new generation of honours students could get to know each other before starting the programme.

The third board wanted to increase the visibility of Ockham, which they did first of all by trying to find suitable board clothing. The famous Ockhamster was also born that year, but had to wait for another year before it got its batteries and ball. During this year, the association also became officially affiliated with the Student Union. The board members' efforts to actively promote the honours programme paid off: the number of applicants tripled compared to previous years, which overwhelmed Miko Elwenspoek, programme

coordinator at the time. Former honours lecturer and member of the first hour Henk Procee was offered an honorary membership in honour of his retirement.

Under the supervision of the fourth board, the association song was composed by the LiedCie, despite the committee not being officially endorsed. The process to write the song took several months. It went through various iterations and was set to a number of melodies before the LiedCie – which had quickly become one of the largest committees in Ockham – found the right setting. The SympCie also organised the first dinner colloquium on gaming in collaboration with KIVI. This event managed to sell out well before the deadline. In this year the honours programme for the first time offered a second track, Design, next to the Science track. This almost doubled the capacity of the programme and caused Ockham to grow rapidly. In that year Ockham also decided to include students from the Excellence Stream, the extracurricular mathematics programme. Outside the university, the board members further improved the contacts with the other honours organisations in the Netherlands.

Under the next board (2013/2014) the collaboration outside of Enschede developed further, which resulted in the foundation of the Dutch Honours Alliance, an umbrella association in which the biggest university honours associations are united. The number of members

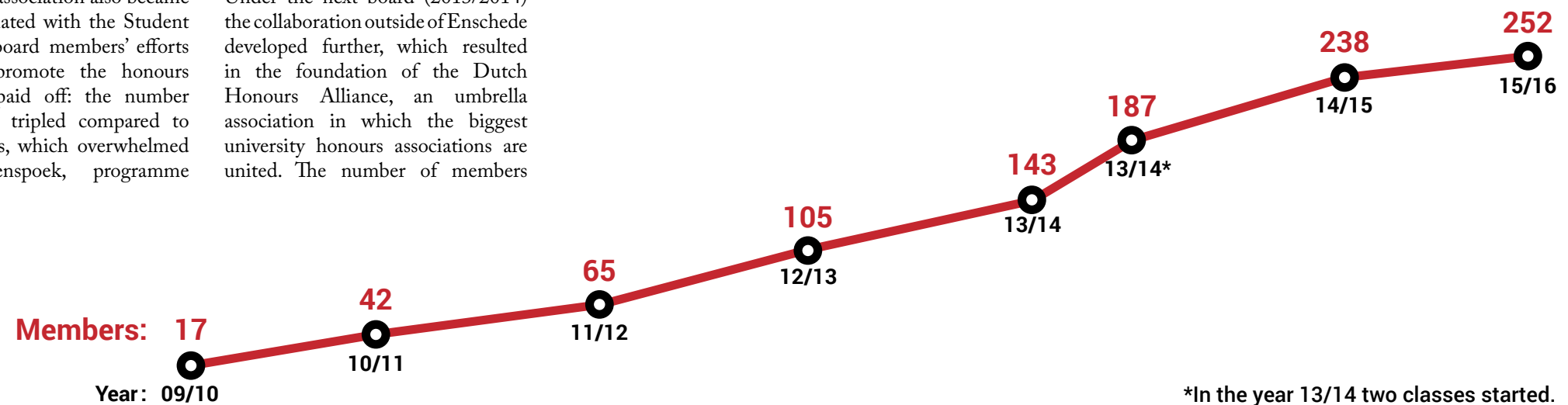


grew quickly that year, since two generations of honours students started in September and February. In addition, three master honours tracks had started and Ockham became a permanent member of the Student Union. To accommodate for the increasing internationalization of the association, all the correspondence was published in English from this year on. The first Ockham study tour took place in April 2014, where, amongst other things, the universities of Oxford and Cambridge and the Olympic Park in London were visited. Miko Elwenspoek retired as a professor at the university, and became the second honorary member. He stayed at the university as honours dean.

The sixth board had the honour to organize the celebration of the first lustrum. The highlights of the lustrum were a masquerade and the exciting "Quest for the Holy Grail". In this year the association room opened as well, providing members with a place to meet and study or relax, as well as giving room for activities such as a chocolate fondue to be organized. After the success of the first one, a second study tour was organized in May of 2015. This tour, themed 'Building Bridges', visited Malmö and Lund in Sweden, as well as Copenhagen in Denmark.

In September 2015, the seventh board was installed. It was the first board that fully switched to English, which also demonstrates how the association had kept increasing its international character over the years. Active participation of members and diversity of the community were key themes for this board.

Currently, the association has 252 members and nine committees. New committees and initiatives kept arising over the years. Hopefully, the association continues to attract new members while providing everyone a comfortable place in the association, and flourishes for many more years.



Inside Information from an Honours Teacher

Irene Visscher-Voerman teaches a course on instructional design in the design track of the honours programme of the University of Twente. With a lot of passion she tells about her experiences as a teacher at the honours programme.



Name:

Irene Visscher-Voerman

Honours Track: Design

Quote: "Insights from other disciplines might help you broaden or reframe your own scope!"

Who is Irene?

Irene Visscher-Voerman started her studies in Educational Science & Technology in 1988, and completed them in 1993 with a masters degree. From 1993 till 2009 she worked at the department of Curriculum Design and Education Innovation as both researcher and teacher. In the meantime she also followed courses at ArtEZ and obtained a Bachelor of Arts as a choir conductor. In 1999 she finished her PhD thesis on design methodology in training and education. In 2007, she became the director of the bachelor and

master programmes Educational Science & Technology at the University of Twente for several years. Nowadays she is the director of the Program Office Bachelor Educational Innovation and she is also head of the Centre of Expertise in Learning and Teaching (CELT), both responsible for supporting the redesign and implementation of the current bachelor programs into a module system (Twente Educational Model), with project led education. Besides this impressive career, she also has a busy family life with five young children. As if that isn't enough she also teaches at the course on instructional design in the design track of the honours programme for two evenings in the week. So, if you have any questions about time management, she is definitely the person to go to!

Introduction to the programme

Just like the students, the best teachers of the University of Twente are selected for the honours programme. When she was asked by Miko Elwenspoek, the Dean of the Honours programme, to become a teacher at the honours programme, she felt really honoured, but she took her time considering the offer because of the busy life she already had. Her colleague Jan van der Meij was asked by Miko Elwenspoek as well, and they decided to join forces and develop a module within the newly formed design track. The result was a module in which the students develop and test new masterclasses for high school students in collaboration with Twente Academy.

Experiences with students

If you ask Irene about her experiences with honours students, she will tell you that she was really impressed. Although the students had no knowledge about developing educational settings or materials, such as masterclasses, they already asked high level questions straight from the beginning. Furthermore, they came up with creative ideas and were able to work very independently. She enjoys teaching them very much and likes seeing that the students appreciated the course.

Added value

Irene saw participating in the programme as a nice new challenge, just like most honours students do. She acknowledges that it is important that programmes like the honours programme are offered to students who are looking for an extra challenge. Furthermore she mentions that it gives the more ambitious students the chance to work together with students with the same mindset, but from different disciplines. It sort of forces the students to look beyond the scope of their own discipline, which is definitely one of the added values of the honours programme.

Advice for honours students

One of the tips that Irene wants to give the students is that they have to keep looking beyond the scope of their own discipline. Your own discipline can have a lot of overlap with other disciplines even without knowing it. Also, insights from other disciplines might help you broaden or reframe your own scope!

COLUMN



Henk Procee is one of the founders of the honours programme and is an honorary member of H.V. Ockham.

Lessons from William of Ockham

By Prof. dr. Henk Procee

The Honours Association Ockham is one of youngest associations for students and alumni within the University of Twente. It is also one of the most enthusiastic and active associations. Since the establishment in 2009 there have been many activities - social, cultural, intellectual and just for fun. Nobody would be surprised that at this moment a new activity is emerging. Nothing less than an HONOURS MAGAZINE. I am extremely happy to introduce it to you.

In doing so I'll stand on the shoulders of William of Ockham, the godfather of the association. This bold and original medieval scholar is most famous because of his methodological rule, Ockham's razor: *Entia non sunt multiplicanda praeter necessitatem*. In translation: Entities should not be multiplied beyond necessity. However, this popular wording cannot be found in his writings. Therefore I give you another expression, even more beautiful: *Frustra fit per plura, quod potest fieri per pauciora*. In modern Latin: It is pointless to do with more what can be done with fewer.

Less known than his 'razor' is Ockham's attack on 'conceptual realism'. In his days there was a deep conviction that important abstract words do have an extra-mental existence. Words like God, Angels, and Laws of Nature. For Ockham these words were not denoting existing entities, but just names which could help us to reason about experiences. An example: When I say "I have nothing in my pocket", a conceptual nominalists like Ockham will accept that there are no keys, handkerchiefs, and coins in it. The conceptual realists would react differently. For them the important question becomes: What is the nothing existing in your pocket? It sounds odd, but many scientists and students think in realistic terms about scientific concepts, theories, and laws. It is extremely helpful to follow Ockham in his approach: all those wonderful words are no more and no less than concepts to help us to reason and to discuss about our experiences.

With these lessons from Ockham in mind, I wish this magazine great success as a means to inform, to discuss, to intensify contacts, and to have a good life, for everyone connected to the Honours Association. In the language of those old days is my wish: *Vivat, crescat, floreatque!*



Life after Honours: Julius de Hond



Name: Julius de Hond
Honours class: 5 (2010-2011)
Honours track: Science
Education: 2009-2012: Bachelor Physics at the University of Twente
 2012-2014: Master Applied Physics at the University of Twente
Current job: PhD student at the University of Amsterdam
Quote: 'Broaden your horizon, there are way more opportunities than you think.'

Julius de Hond, honours alumnus and secretary of the 4th board of H.V. Ockham, is a PhD student at the University of Amsterdam. Julius started in 2009 with his bachelor Applied Physics at the University of Twente. During his bachelor he first applied for the Excellence Stream. After half a year he decided to switch to the Honours programme, which back then only consisted of the Science track. In 2012 he successfully completed his bachelor and started with his master Applied Physics with a specialisation in condensed matter. Nowadays he is a PhD student in atomic physics at the University of Amsterdam.

So, Julius, let's start from the beginning. During your bachelor you decided to apply for an honours programme. Did you need an extra challenge besides your own bachelor?

I did not really do it for the extra challenge. It was the general concept of the honours programme itself which really appealed to me. Especially the fact that I could work with students with different backgrounds on topics which were not always related to my own bachelor programme seemed really interesting to me. As well as the opportunity to improve my writing skills.

Was it difficult for you to work together with students with different backgrounds?

No, not really. I thought it was very interesting! Due to the multidisciplinary composition of the group of students, a wide variety of perspectives was present, which in most cases resulted in really interesting discussions. A student who studies international business administration approaches a certain topic really in a different way compared to a physics student. So working together really broadens your own perspective and teaches you to think out of the box.

If you look back, did following the honours programme have added value for you further (educational) career?

That is hard to say as well. I already had quite a clear idea of the things that I wanted to learn during my

time at the university. I think the programme helped me improve my writing skills, for example, but if I wouldn't have joined in I think I would've been able to develop my writing ability elsewhere. What I think is worthwhile about the honours programme is that it offers an environment where motivated students can explore their interests.

Would you apply for the honours programme again?

It was really an interesting and stimulating time of my student life. I made a lot of new friends and I gained a lot of new skills. So yes, I would definitely apply for the honours programme again.

So, let's now focus on your future and ambitions. At the



moment you are doing a PhD at the University of Amsterdam. Can you briefly explain on what kind of project you are working?

I'm working on an experiment in the atomic physics group. We cool down gases to the point where the atoms move relatively slowly so that they can be controlled very well. My project aims to tune the interactions between the atoms using lasers. Crudely put this is interesting because atoms are quantum particles, and when you can control the interaction between quantum particles you can make a quantum computer (which does some operations much more efficiently than a regular computer).

Where do you see yourself in 5 years?

I hope to have a postdoc position. Hopefully somewhere close, or

maybe in America. The research at some American universities is very good of course. But by that I do not mean to discount their European counterparts! There are some great labs here that aren't as well-known as they deserve to be.

So, why didn't you do a PhD in America?

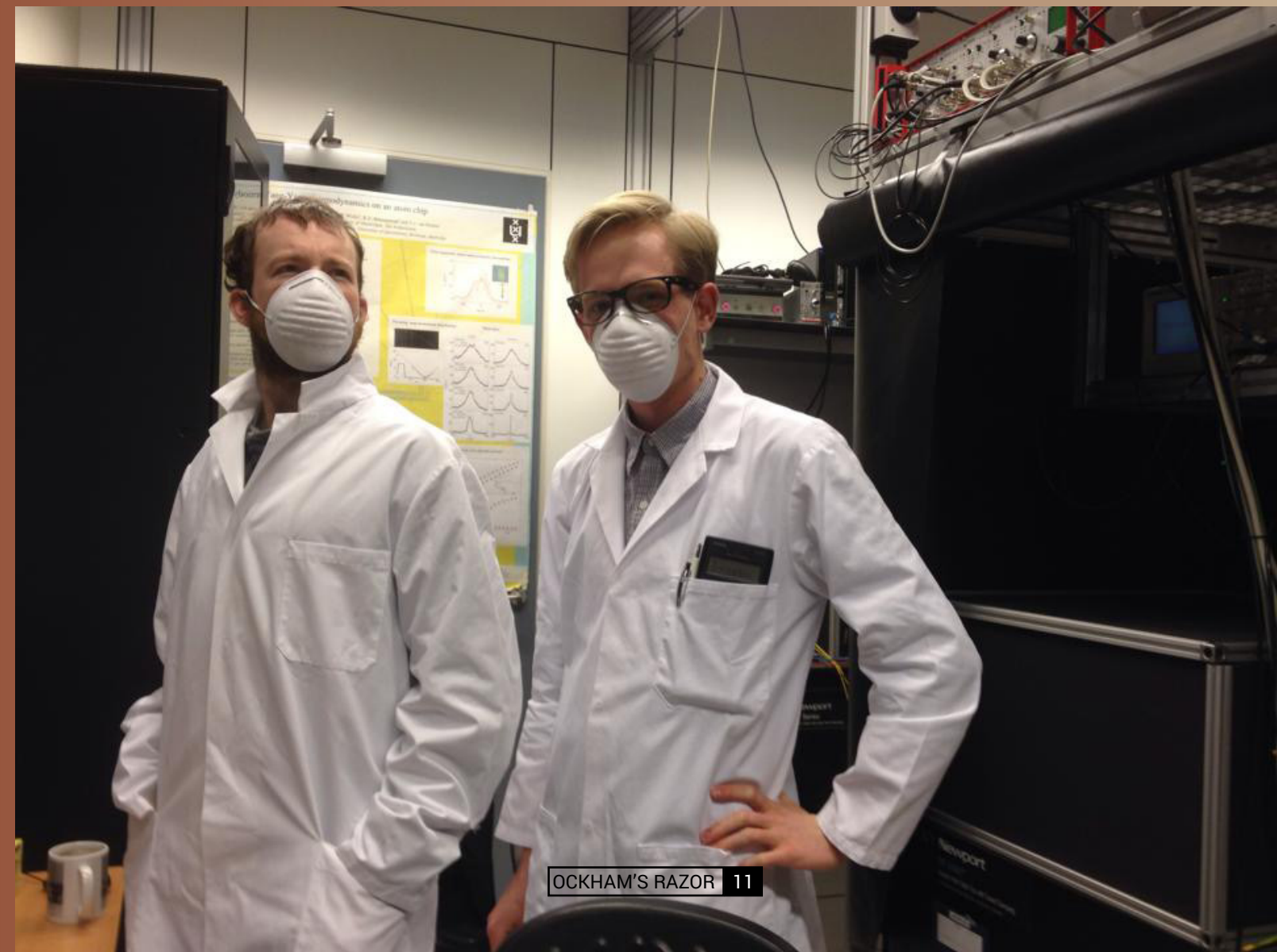
They are doing great research, but the way that they treat PhD students is not really attractive. As a PhD you have to get a scholarship or raise money for your project on your own. Furthermore, it is expected that you follow courses, while in the meantime they do have the same research expectations as in Europe. Therefore I decided to stay in the Netherlands.

Do you have any other (professional) ambitions?

This is something I feel I should be a bit cautious about, but I think I'd really like to have my own research group somewhere. I don't think about it too much, because you have to be a bit lucky to be successful in science. So for now I want to focus on my own research and try to do that in the best way possible.

Finally, any tips for current (honours) students?

Most programmes at the University of Twente train you in something relatively specific, but I think there are many people with skills that are appreciated in different fields as well. So if you want to broaden your horizon I'd say there are way more opportunities than you think, especially if you have a broad interest.



ANGRY BEES?

Scientists from Australia and France discovered that honey bees are less likely to sting when they are exposed to flower scents. To better understand when bees sting, the researchers exposed agitated honey bees to a variety of scents. They discovered that bees restrained themselves from attack in the presence of flower odours, the more attractive the scent, the less likely the bees were to sting. It is suggested that this behaviour results from the fact that the honey bees prefer to eat, rather than to fight. The findings might be important in understanding the effects of chemical signalling at a neurological level in honey bees and might have direct applications in beekeeping.

Source: <http://www.livescience.com/53188-flower-aroma-calms-angry-bees.html>

ICY GRAND CANYON DISCOVERED IN ANTARTICA

While trying to measure ice thickness in the region Princess Elizabeth land in Antarctica using satellite images and radio waves, researchers did an exceptional discovery. Under the glacial ice they uncovered traces of a rift almost as deep as the Grand Canyon in Arizona and found possible evidence of a glacial lake. Probably, the rift is around 1100 km long and one kilometer deep. According to the scientists, the canyon network might be older than the ice sheet itself or might be grinded out by flowing water underneath the glacier. To confirm the discovery, geoscientists in Antarctica are currently carrying out ground research.

Source: *An extensive subglacial lake and canyon system in Princess Elizabeth Land, East Antarctica, S.S.R. Jamieson (2015)*

"IM"POSSIBLE ENERGY MEASUREMENTS

For the first time scientists were able to determine transition state energies during a chemical reaction, something that was considered to be impossible for a long time. Researchers at the Massachusetts Institute of Technology measured the energy and mapped the structure during an isomerization reaction, by using lasers to monitor the change in vibrations of the molecules as they increased the energy given to the molecules. According to the scientists, the patterns of vibrations changed as expected near the transition state when specific levels of energy were reached. This kind of measurements can help understand the precise inner workings of more complex chemical reactions.

Source: *Spectroscopic characterization of isomerization transition states, J.H. Baraban et al. (2015)*

GAZE DIRECTION-DEPENDENT FEAR FOR ANGRY FACES

The direction of the gaze of an angry person influences the degree of fear or anger a person feels. At least, that is what three scientists from France claim to have discovered. They studied the brains' reaction on computational modelled facial expressions of 24 subjects. In their research they demonstrated that more anger is felt related to a direct angry gaze and more fear is felt with an averted gaze. It is shown that gaze direction enhances the perceptual sensitivity to threat-signalling emotions, arising in both the ventral face-selective and dorsal motor cortices of the subjects' brain. Furthermore, the researchers showed that feeling fear influences the reaction time of the brain to danger. When fear is felt, adrenaline is synthesized to ensure a faster response on a dangerous situation, also known as the fight-or-flight principle.

Source: *Anxiety dissociates the adaptive functions of sensory and motor response enhancements to social threats, M. El Zein et al. (2015)*

How to do an Internship

At first, she was not too sure about going abroad. However, after hearing very positive stories about internships in foreign countries from preceding students, her initial doubts quickly disappeared. Lieke Hermans, H.V. Ockham alumnus and also treasurer of the 4th board, is studying a master of science in Technical Medicine at the University of Twente. Specializing in Sensing and Stimulation, she did internships in several hospitals and research institutes in The Netherlands. After the summer of 2015, another very valuable experience can be added to her resume: an internship at the University of British Columbia in Kelowna, Canada.



Name: Lieke Hermans
Age: 23
Study Programme: Technical Medicine
Country: Canada



"The study Technical Medicine is relatively new and internationally not very well-known yet. Nevertheless, its students are highly appreciated as interns, because of the excellent impressions they have left behind so far", tells Lieke. For Technical Medicine students, internships are mainly found through the connections of supervisors and professors. Consequently, arranging an internship in Canada did not take too much effort. Over the course of 3 months, Lieke worked in Kelowna, at the Centre of Heart, Lung and Vascular Health. Here, together with her co-workers, she studied the artery diameter change as a response to CO₂ and O₂ concentrations in the blood.

During her internship, cultural differences between Canadians and the Dutch rapidly became clear. For example, Lieke's working environment seemed less scrupulous than in The Netherlands. "Maybe I am generalizing, but to me it seemed that people were less strict. They worked hard, but they worked when they wanted to, lunched when they wanted to and dressed in the way they wanted", says Lieke. Especially the lack of formal appearance surprised Lieke: "During a thesis defence, all the Americans would wear suits, while the Canadians wore shorts and flip-flops". This informality well describes the very relaxed atmosphere

of the Health Centre. Lieke: "my co-workers were all very relaxed and friendly!" Anybody who has watched American sit-coms, knows that Canadians are often portrayed as extremely polite and friendly people. Lieke confirms: "It did not matter that I was a new intern in the organization. The people around me did not hesitate at all to invite me over for parties, BBQ's, and other get-togethers. Everybody would bring their partner, kids and even their dogs!".

However, not all differences were for the better. Food in Canadian supermarkets is, to Dutch standards, quite expensive. Moreover, things are not always like you expect them to be: "At the beginning of my internship I searched for hours in every lookalike Halfords and Gamma store to find a chain lock for the bike I borrowed from my landlord. Turns out they only sell those in sports stores!", says Lieke. Another example was an unlucky encounter with a Canadian washing machine, which resulted in flooding the basement of her landlord.

In such a new environment, how can you make the most out of your internship? According to Lieke, it is important to be open-minded: "The key to having a great experience abroad is to be approachable and willing to learn and adapt. My

in Canada

internship in Canada was an excellent opportunity to get out of my comfort zone. However, in the end it is very important to stay true to yourself and do only those things that you really enjoy".

And Lieke definitely did enjoy herself. To name just a few examples: she took salsa lessons for the first time, swam in the Okanagan Lake, visited Vancouver and drove around the country in a rented car. Besides having fun and learning more about heart, lung and vascular health, what else did the internship bring her? Lieke answers: "It is a very good feeling to discover that you can survive, have fun and be independent in a foreign country. Before my internship in Kelowna I had doubts about whether I should go abroad or not. Looking back now, I finally understand why almost everybody who went abroad is so positive about it. An internship abroad is very beneficial for your personal development and opens your eyes to the world".



"The key to having a great experience abroad is to be approachable and willing to learn and adapt. My internship in Canada was an excellent opportunity to get out of my comfort zone. However, in the end it is very important to stay true to yourself and do only those things that you really enjoy."



